UNIVERSITY OF ILLINOIS
LIBRARY

Class 610.5
Book LA
Volume 1907$^3$

My 08-15M

[redacted]

The person charging this material is responsible for its return on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.

University of Illinois Library

JUL 17 [illegible]

MAR 21 1986

AUG 20 1986

AUG 20 1988

L161—O-1096

Digitized by the Internet Archive
in 2016

https://archive.org/details/lancet1907unse

# THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology,
Chemistry, Pharmacology, Public Health, and News.

1305
19
vol 2

IN TWO VOLUMES ANNUALLY.

VOL. II. FOR 1906.

*EIGHTY-FOURTH YEAR.*

EDITED BY THE PROPRIETORS:

THOMAS H. WAKLEY, F.R.C.S. ENG.,
AND
THOMAS WAKLEY, JUN., L.R.C.P. LOND.

LONDON:
PRINTED AND PUBLISHED BY THE REGISTERED PROPRIETORS, AT THE OFFICES OF "THE LANCET," No. 423, STRAND,
AND Nos. 1 & 2, BEDFORD STREET, STRAND.
MCMVI.

610.5
LA
1907 pt.3

# The Ingleby Lectures
ON
# PELVIC INFLAMMATIONS IN THE FEMALE.

*Delivered at the University, Birmingham, on May 9th and 16th, 1907,*

BY THOMAS WILSON, M.D. LOND., M.CH. BIRM., F.R.C.S. ENG.,
OBSTETRIC OFFICER TO THE GENERAL HOSPITAL, BIRMINGHAM.

## LECTURE II.

*Delivered on May 16th.*

### SYMPTOMS AND COURSE.

MR. DEAN AND GENTLEMEN,—The amount of illness and suffering produced by inflammation of the uterine appendages is out of all proportion to the mortality. The symptoms vary infinitely in severity. In a considerable number of women the physical signs of these affections are found, so to say, accidentally and no pain or disturbance of function is present that can be attributed to the disease. In another large group of cases the patients apply for the treatment of sterility, and it is found that changes, often of considerable extent, are present without any history to indicate the origin of the disease. In many cases this apparently dates from childhood, when the pelvic inflammation may have passed through its acute stage without giving rise to symptoms so severe or localised as to lead to its detection, or with symptoms that are masked by the presence of some graver affection of the lungs or peritoneum. Many of the cases of sterility, however, give a history of some disturbance of function, local pelvic pains or uneasiness, or other suspicious symptoms, dating from about the time of marriage, and in a considerable proportion of these patients signs suggestive of gonococcal infection are present. The onset of the affection may have been acute and more or less severe following upon a labour or abortion. In many cases the disease starts insidiously. A not uncommon history is one of child-bed followed by a red discharge of some duration and by a history of general weakness lasting for several months; afterwards such a patient may consider herself well for months or even years and then from slight or no obvious cause be seized with acute pelvic peritonitis. In such an acute attack the underlying condition of the uterine appendages is often found to be one that has most likely existed for years and that can with great probability be ascribed to the last labour. In many other cases the patient with chronic disease of the appendages, even on the closest cross-examination, can give no indication of the time when the inflammation probably originated.

Chronic and persistent symptoms are usually present in different degrees of severity, often varied by acute exacerbations, which are specially liable to occur at the menstrual periods. Among the symptoms pains of varying character and intensity are most frequent. These may be felt in one or both sides of the lower abdomen, in the sacral region, round the hips, deep in the pelvis, or sometimes shooting down the thigh as far as the knee. Sometimes these pains are only noted at the periods, but generally they are more or less present in the intervals and are especially marked after work or exercise and are relieved by lying down. Dyspareunia is not uncommon. Frequently disturbances of menstruation are present, often due to complicating affections of the uterus but in many cases apparently due to inflammation of the appendages. In the early stages and during acute exacerbations the menstrual discharge is frequently profuse and still more often prolonged, sometimes lasting for many weeks. In the chronic stage (and this is especially true of tuberculous affections) menstruation is often scanty and infrequent. In some cases puberty appears to be delayed in girls whose appendages have become diseased before that epoch and in not a few of the women the menopause takes place early; in many other cases the menopause is postponed. Various discharges are complained of—mucous, serous, and purulent. In some rare cases such a discharge may be profuse at intervals and result from intermittent hydrosalpinx or pyosalpinx. As a rule, it depends on concomitant endometritis, in which condition intermittent profuse discharges are also sometimes observed. The functions of the neighbouring organs, especially of the bladder, are frequently disturbed; pain and frequency of micturition are complained of, especially at the menstrual periods. Pain in defæcation is sometimes observed. Constipation is one of the most frequent symptoms, but occasionally rectal irritation is present and there may be the passage of quantities of clear or inspissated mucus from the bowels.

In most cases, especially when local symptoms are present, disturbances arise in distant organs. These in many cases combine to form the clinical picture of neurasthenia, which often seems to depend on long-continued and repeated pains, especially in women of neurotic or unstable temperament. In many instances, especially where collections of pus have existed for some time, a condition of toxæmia arises. Constipation often appears to have a marked effect in promoting such a condition. The patient becomes prematurely aged, is sallow and anæmic, worn and haggard; there is a certain degree of wasting; the hair is dull, dry, and becomes thin; the muscular tone is flabby; the appetite is capricious or poor and the digestion impaired; the skin is sometimes dry and harsh; and the urine is often diminished in quantity and loaded with urates. In not a few cases in the course of time, sometimes after many years, severe cachexia gradually develops, and the patient eventually dies from exhaustion or as the result of a terminal infection. Operation for pelvic inflammations in women reduced to the cachectic state is attended by considerable risk, and three of the deaths that have followed my operations for pyosalpinx occurred in such patients.

The symptoms, local and general, above described, may persist for years or may clear up after the adoption of appropriate treatment. In a considerable proportion of the cases intercurrent acute attacks of pelvic peritonitis are observed varying in number and severity. In many women one such attack is observed and with proper care is not repeated; in others repeated attacks take place at short intervals, and in still others the latent intervals may be prolonged, even lasting for years. In patients who have suffered severely enough to call for operative treatment a history of repeated acute attacks is very common. They occur in patients affected with non-suppurative conditions as well as in those with suppurative affections, but in the latter class they are more frequent and tend to recur at shorter intervals. Thus of 40 cases classed as catarrhal salpingitis half the patients gave a history of acute attacks, and of these 13, or one-third, had had three or more; of 19 cases of hydrosalpinx, in eight there had been acute attacks, in six of them, or one-third of all the cases, three or more; among 71 cases of pyosalpinx, 56, or about three-fourths, had had acute attacks, many of them having had three or more. In another group of cases the patient gave a history of an acute attack of pelvic peritonitis months or years before being seen and of having never been well since, while about an equal number of women had been affected with chronic, less severe but persistent symptoms from the commencement of the illness.

The acute attacks of pelvic peritonitis so frequently seen in these conditions are common to them and to inflammation of the vermiform appendix, and without making a careful vaginal and rectal examination it is impossible to tell which of the two affections is present. Occasionally, as in three of my patients, one has to deal with a right-sided pyosalpinx with which the inflamed appendix is closely adherent. The total number of cases in which I have found the vermiform appendix involved is 20; in one case it was adherent to a hydrosalpinx, in three to simply inflamed and adherent appendages, and in 16 to suppurating tubes.

Inflammations of the appendages appear in the female sex to take the place to a large extent that is occupied by inflammations of the appendix in the male. Thus in the seven years from 1900 to 1906 inclusive 1086 cases of appendicitis were admitted into the General Hospital, of which only 364—or as nearly as possible one-third—occurred in the female sex.

There are many points of similarity in the pathology and clinical course of the two affections. In both the appendix and the Fallopian tube we have to deal with a hollow muscular tube with narrow lumen lined by mucous membrane. Each communicates with a viscus from which noxious germs are able to obtain access. Under certain conditions such germs may give rise to inflammation of the mucous and other coats of the tube, and as a result the openings may be closed. In this way a collection of irritant material may take place in a closed cavity, where it may give rise to chronic pains or discomfort or may remain entirely latent.

120513

From time to time, from slight causes or for no obvious reason, acute attacks of inflammation are set up, and as a result of such an acute attack the wall of the viscus may perforate and give rise to peritonitis. In appendicitis the intercurrent acute attacks appear to be much more apt to become diffuse or spreading—a tendency that is explained by the fact that the micro-organisms implicated differ from those usually found in cases of pyosalpinx. In appendicitis the germ most frequently found is the bacterium coli commune, while in cases of pyosalpinx this organism is not common, the condition depending in the great majority of cases on the gonococcus, streptococcus pyogenes, or on various saprophytic organisms. All these germs are relatively of lower virulence than the bacterium coli with the exception of the streptococcus, which as a rule soon loses its virulence and dies out in a closed cavity.

A possible source of infection of the Fallopian tube from the vermiform appendix or *vice versâ* is by way of the connective tissue in the appendiculo-ovarian ligament, but by far most frequently extension of infection from one to the other takes place by simple contact. In all my operative cases the appendix had become adherent in exactly the same manner as any other viscus that happened to be in contact with the tube and ovary at the time of acute inflammation. On examination afterwards the affection of the appendix has usually been limited to its peritoneal coat, and where the change has been more advanced the peritoneum and muscular coats have always been most affected, the mucous membrane being normal and the lumen empty. In some cases, however, the tube or ovary becomes affected secondarily to an appendicitis, as was shown by the case of a girl of 12 in the post-mortem room, where a gangrenous appendicitis had set up an abscess in the right adherent ovary.

The intercurrent attacks of acute pelvic peritonitis are frequently called "obstruction of the bowels," "inflammation of the bowels or of the bladder," sometimes "typhoid," and much too frequently of late years "appendicitis." The onset is most likely to take place at a catamenial period, but very frequently occurs in the interval between two periods. It is occasionally perfectly sudden, usually as the result of an accident, such as a fall, or a blow, or of over-exertion in straining or lifting; in many such cases the onset is accompanied by hæmorrhages into the pyosalpinx itself or into the ovary. Much more commonly the onset is not sudden but acute, pain in one or both sides of the lower abdomen gradually increasing in the course of a few hours or of a day or two until the patient is obliged to give up work and go to bed. The pain is often attended by a feeling of nausea or retching, and sometimes it causes actual vomiting or occasionally a feeling of faintness. Not infrequently the beginning of the attack is marked by shivering, or even in rare cases by a distinct rigor. The temperature rises to 102° or 103°, or even higher; the pulse becomes more frequent, often out of all proportion to the rise of temperature. Pain and frequency of micturition are commonly among the most serious complaints. Much less often there is rectal irritation, amounting sometimes to severe tenesmus and accompanied by the passage of copious mucus, occasionally mixed with blood. The aspect of the woman soon alters, especially if she persists in getting about; her features become drawn, her countenance pale, and she soon presents the appearance of a patient seriously ill. In many such cases a remarkable improvement in the symptoms and in the aspect of the patient follows rest in bed, even for a day or two. According to the severity of the symptoms cases are divided into simple acute pelvic peritonitis and septic peritonitis. In the former cases the symptoms—pain, elevation of temperature, increase in the pulse-rate, and sickness—are all moderate in degree and promptly relieved by rest in bed. In the latter the aspect of the patient is bad, the pulse is rapid, there is more or less frequent vomiting, the abdomen becomes distended, and the patient is sleepless and unable to take nourishment.

### DIAGNOSIS.

The symptoms of which the patient complains serve merely to indicate the necessity for careful objective examination, on the result of which depends the diagnosis and consequently the treatment proper to be pursued. The examination involves a complete investigation in the first place of the condition of the pelvic organs and tissues, and in the next of the condition and functions of the rest of the body. The pelvic exploration includes inspection, palpation, and percussion of the lower abdomen; vulvar and vaginal examination by inspection and palpation and sometimes by the use of the sound and speculum; rectal examination; and abdominal palpation with the help of a finger in the vagina and one in the rectum. In a case of pelvic inflammation in the female none of these methods should be neglected, and by their means it is generally possible to obtain fairly accurate information as to the nature of the condition with which we have to deal. Since the indications for treatment depend on the results of examination it will be convenient to consider the two subjects together.

### PUERPERAL PELVIC INFLAMMATION.

The puerperal state has been seen to be the commonest occasion for the origin of pelvic inflammations generally; of 260 cases, 176, or nearly two out of three, could with great probability be referred to the last pregnancy, ending either at full term or in abortion. The symptoms of infection may arise early, in the first two or three days, or later, in the second or third week. Frequently the symptoms are only observed when the patient begins to get up towards the end of the second week, but it is probable that more careful observation at an earlier date would show in the great majority even of these cases some indication of abnormality in temperature, pulse, lochia, or other symptoms. The worst cases are those in which infection takes place during or soon after delivery: a chill or rigor with marked rise of temperature and the general symptoms of fever occur as a rule within 48 hours, attended sometimes by pain and usually by tenderness to pressure in the lower abdomen. The lochia sometimes dry up; where the infection is due to saprophytes the discharges become foul; in the worst cases of streptococcal infection they may be normal in naked-eye appearance and amount, as well as in odour. On pelvic examination within the first two or three days after infection the vagina is hot and may be dry, the uterus is tender and flabby, and there is a general feeling of bogginess of the tissues; around the uterus nothing definite can be made out. The patient may die from acute toxæmia without developing more distinct local signs. At the beginning of the infection a leucocyte count is of importance in prognosis, a high percentage being of good omen and a low one unfavourable. The early formation of a distinct inflammatory exudation is a favourable sign, as indicating the local resisting power of the tissues.

If the patient survives the signs alter in the course of a few days as the local barriers to the spread of infection begin to be formed. From the sero-fibrinous exudation at first thrown out a deposit of fibrin takes place; the serum drains away or may accumulate in the peritoneal cavity, and especially in Douglas's pouch. The tissues in which fibrin is deposited are brawny and of board-like hardness; and from the shape and position of such a brawny tumour an inference can be drawn as to the part affected. In cellulitis the portion of the cellular tissue most commonly involved is that at the base of the broad ligament on one side, and here a more or less conical tumour forms with its truncated apex at the isthmus of the uterus, which is sometimes pushed towards the opposite side, and with its outer end or base spreading widely over the side and posterior wall of the pelvis, as well as upwards over the brim into the iliac fossa; the vaginal fornix is obliterated, the vaginal wall pushed downwards by the lower surface of the tumour, which is usually concave, and extends low down on the side of the pelvis. Through the rectum the brawny hardness may be felt extending backwards on the pelvic wall as far as the middle line, involving the utero-sacral fold and coming close to the side of the gut. Frequently at this stage the hardness extends to some extent towards the other side behind and in front of the supravaginal cervix, and the swelling may open up the layers of the broad ligament, the uterus being apparently embedded in the side of the tumour. The upper abdominal surface of the swelling is usually well defined but tender.

If the peritoneum is the part affected the fibrinous deposit takes place on the surface of the serous membrane and in the connective tissue immediately below it as well as on the surface and in the walls of the organs in contact with it, especially of the large and small intestine and omentum. When the peritonitis extends above the brim of the pelvis a fixed tender hardness is felt in the lower abdomen, the upper border of which is not well defined, partly by reason of the accompanying distension and muscular resistance, and partly because the upper border of the indurated tissues gradually shades off. The upper part of such a swelling is resonant to percussion, being formed of coils of intestine with thickened walls. On vaginal and rectal examination the whole pelvis is roofed in by a firm board-like hardness, from whose middle the vaginal cervix projects downwards. From the cervix the hardness extends in curved surfaces with the concavity downwards to the sides of the pelvis, over which it spreads widely. Through the rectum it is made out that the tissues behind the uterus and above the vagina are hardened, and that the utero-sacral folds are frequently infiltrated and encroach on the lumen of the gut. Behind the upper part of the wall of the vagina a tongue-like process is commonly felt extending downwards in the recto-vaginal septum for some distance, usually ending below in a sharp border. All these changes, as felt by the vagina and rectum, affect the subperitoneal layer of connective tissue—that is to say, they are the signs of a general pelvic cellulitis; but in such cases the further progress of the case shows that the cellulitis is secondary to peritonitis, which constitutes the primary and principal affection.

In many cases an accumulation of serum takes place in the peritoneal cavity in one or several loculi and in this case the principal collection is found, as a rule, in Douglas's pouch. A tender, fixed median lower abdominal swelling may extend as high as the umbilicus; the contour may be fairly well defined; percussion shows that the upper and lateral parts of the tumour are formed by adherent intestine, the lower portion above the pubes being dull. Internal examination shows that the cervix is pushed upwards and forwards behind the pubes and that a rounded tense or yielding elastic swelling extends downwards to a considerably lower level, filling the pelvis and flattening the rectum against the posterior pelvic wall. On abdominal examination the body of the uterus can frequently be felt distinct on the front of the tumour. Apart from the history such a tumour might contain serum, blood, or pus. Blood would be found if the history was that of a ruptured tubal gestation. Under the conditions we are now considering, infection following parturition or abortion, the contents would be serum or pus, and the solution of the question as to which of the two is present has to be sought in the general condition of the patient and in the accompanying physical signs. Where the contents are serous the aspect and general condition of the patient are less grave; the temperature is raised, but is not so constant and not so high as in a case of suppuration; the consistence of the tumour is more elastic, like that of a thin-walled cyst. When suppuration takes place there is, as a rule, a considerable amount of brawny hardness of the surrounding tissues, and the vagina and cervix are œdematous and swollen and dark bluish in colour. A determination of the proportion of leucocytes present in the blood is often of value, although in the early acute cases a leucocytosis of 15,000 or more is frequent even when the exudation is merely serous. In suppuration the blood-count may be no higher at first, but is more persistent or shows a gradual increase.

When septic infection spreads by way of the veins the pelvic signs at first are those of an inflammation of the uterus, which remains tender and enlarged, usually flabby, of the consistence of wash-leather, but later becoming harder. The tissues around the uterus remain soft, but it is often possible to make out small tender cords or nodules formed by the thrombosed veins. As the infection progresses repeated rigors occur with rise of temperature to 103°, 104°, or higher, followed by remission, and these, together with the slightness of the physical signs discovered on a careful pelvic examination, are characteristic.

A late puerperal infection—that is to say, one in which the symptoms first become marked towards the end of the second week or later, is usually due to pelvic cellulitis, to phlebitis, or to upward spread of a gonorrhœal infection.

In the early stages of puerperal infections the indications for treatment are (1) to attempt to limit the entry and spread of the infecting organisms, and (2) to support the patient in her fight against the invasion. The first indication is met by cleansing the uterus and vagina and by keeping the patient absolutely at rest, every movement appearing to favour the spread of organisms further into the tissues. The cleansing should be undertaken without the slightest delay on the first onset of suspicious symptoms and is best effected by the use of the finger to explore the uterus and remove any portions of placenta or membranes that may be left behind, followed by a copious douche of many pints of salt solution or of some mild antiseptic; afterwards the employment twice or three times a day of large vaginal douches of weak lysol or izal solutions is advisable. The use of the curette in these cases is to be deprecated on at least three grounds: it is impossible to tell when the uterus is empty; it is particularly easy in the soft condition of the uterine muscle to cause injury or even perforation; and finally by removing the superficial layers of the endometrium the barriers of fibrin and phagocytes are removed and fresh blood and lymph vessels are opened up for the free entry of germs.

The second indication, to support the patient in the struggle, is to be met by absolute rest to spare her strength; by nourishing diet suitable to the state of the digestive organs to keep up her strength; by quinine in large doses, as a general and nervine tonic, and for its effect in promoting leucocytosis; by sponging the skin with tepid water when the temperature rises above 102°; by attention to the regular evacuation of the bowels; by the administration of alcohol in regulated doses or of hypodermics of strychnine when the use of these drugs is indicated by the state of the pulse, tongue, or skin; and by the relief of pain in the first place by the application of heat to the lower abdomen, and in the second by the administration of belladonna or morphine in the smallest possible effective doses. In addition to these means methods have been devised with the purpose of directly antagonising the germs or neutralising their toxins. Most of them have so far not advanced beyond the experimental stage. Of those to which I have given a fair trial may be mentioned antistreptococcic serum which has occasionally appeared to me to be of service in appropriate cases; and collargol in subcutaneous injections, or by inunction in the form of Credé's ointment, which has produced no obvious effect.

In the early stages of pelvic inflammations surgical methods are indicated when pus has formed, or where a tense elastic swelling is present in Douglas's pouch. In the latter case an incision by knife or scissors is made immediately behind the cervix and extended as far as may be necessary to each side; the lateral portions should be inclined backwards, so as to make the whole incision convex forwards. When the fluid is evacuated the opportunity is taken to ascertain the condition of the appendages by bimanual examination. The cavity is afterwards packed loosely with iodoform gauze, and this is changed every second day. The relief afforded by this method of treatment is often marked and immediate, and the relief of tension appears to have a considerable effect in limiting the degree of the inflammation as well as its spread.

When pus has formed it should be let out at the earliest possible moment by the nearest route. Where it has collected in Douglas's pouch the posterior vaginal incision is used; for abscess in the lateral cellular tissue an incision one inch above and parallel to the middle two-fourths of Poupart's ligament is carried down through the tendon of the external oblique muscle and the transversalis fascia into the subperitoneal space. When the pus collects in a space in the peritoneal cavity above the pelvic brim an incision must be made directly into the abscess cavity. In any case great care has to be taken not to open up the general peritoneal cavity; the pus is removed by swabs or by gentle local irrigation and the cavity freely drained by rubber tubes or gauze.

In the early stages of puerperal infections treatment by more radical operations offers little chance of success. Patients who are gravely septic bear anæsthetics and operations very badly. On the other hand, recovery often takes place without the aid of surgery in cases that appear practically hopeless. Most of the patients operated upon under these conditions die and it is open to doubt whether the few who survive do so because of, or in spite of, the operation. My own experience of removal of the uterine appendages with or without the uterus in six cases of recent puerperal septic and pyæmic conditions has not been such as to encourage me to add to it; in none of the patients was death prevented, while in at least three it was hastened. The main indication is to let out pus and afford drainage; care should be taken not to interfere with the protective barriers set up by nature and especially not to be too vigorous in cleaning away the fibrinous exudations and breaking down the adhesions that shut off the general peritoneal cavity.

## GONOCOCCAL PELVIC INFLAMMATIONS.

In rare cases gonorrhœa may lead within two or three weeks of the infection to a virulent and spreading peritonitis. Much more commonly the inflammation only spreads upwards into the tubes and peritoneum after the lapse of months, or sometimes even years. The relation of the infection to pregnancy and the puerperium is of peculiar interest not only from the scientific point of view but from that of the practising obstetrician. In married women a severe vulvo-vaginal and cervical gonorrhœa is not very common; the great majority of infections are due to marriage with men in whom gonorrhœa of more or less ancient date has never thoroughly healed. Some practitioners there are who hold the opinion that gonorrhœa once acquired never entirely clears up, but this is undoubtedly a gross over-statement. In the circumstances attending marriage a gleet, however slight, is apt to become more virulent, and gonococci become implanted, usually in the cervix and in the urethra; the resulting catarrhal inflammations are frequently slight and attended by a trifling sense of local irritation, white or yellowish discharge, and some heat and frequency in micturition, all which symptoms may pass off in the course of a few weeks. If the patient conceives the discharge and local irritation may become more marked, but are commonly supposed to be due to the pregnancy. When delivery takes place either in the earlier months or at full term the gonococci find conditions favourable for their growth and development, and extension upwards into the body of the uterus and thence into the Fallopian tubes and peritoneal cavity is particularly apt to occur. This upward spread takes place gradually; at first the endometrium is invaded, as is shown by the lochia becoming more profuse and continuing to be bloody for a longer time than usual and perhaps by a little local uneasiness, especially in connexion with the bladder; after a few days the tubes become involved, but this only gives rise to a little uneasiness or dull aching pains in the sides of the lower abdomen; finally, the infection spreads into the peritoneal cavity and then, for the first time, the local pains become severe and the temperature and pulse markedly raised. The apparent beginning of a gonorrhœal inflammation in the second or third week or even later after delivery is thus explained, the upward extension taking a certain time to develop. The physical examination of such a case before the peritoneum is invaded may show thickening in the course of the Fallopian tube, more easily observed in the inner part near where it joins the cornu of the uterus. As a rule, however, attention is not called to the pelvis until the peritoneum is involved and then the signs of a localised peritonitis are present with an amount of serous effusion into the cavity and of induration of the surrounding tissues varying with the severity of the inflammation. In some cases puerperal gonorrhœal infection sets in suddenly with fulminating symptoms of peritonitis, but even in these cases the symptoms in the course of two or three days frequently undergo a remarkable change for the better at the same time as the local signs become those of a limited pelvic peritonitis.

The diagnosis of the gonorrhœal nature of a case of puerperal infection, as of gonorrhœa generally, depends upon the recognition of gonococci in the discharges from some of the infected surfaces; search has to be made in the secretions of the urethra and cervix, and in the lochia. The lochia, at first bloody, later becomes purulent or mucopurulent, often of greenish colour. Other indications may be present. If pressure on the urethra from above downwards discloses the presence of opaque secretion, that is in itself suspicious, and the suspicion becomes more marked if Skene's ducts contain such secretion, even in minute quantity; sometimes these ducts are felt to be thickened, hard, and tender, and occasionally the whole urethral wall is thickened and indurated. Much less commonly the ducts of Bartholin's glands are inflamed and contain purulent secretion which can be pressed from them; or the orifices of the ducts are surrounded by a red areola; or the glands themselves are hard, tender, and enlarged by inflammation. In the presence of any of these signs in connexion with the urethra or Bartholin's gland a presumption of infection by the gonococcus is raised, but remains merely a presumption, since the same changes may be due, though rarely, to other causes. The affection of the baby by purulent ophthalmia, which in the great majority of cases is due to infection by the gonococcus, may be an important indication of the nature of the case. The late onset of the infection in the puerperium and the condition of the discharges are also suggestive but the diagnosis can only be made certain by the discovery of the gonococcus. In the early stages of the disease this is easy, the organisms being present in enormous numbers, but soon the gonococcus becomes crowded out by the growth of other germs, and after a lapse of a few weeks its detection becomes difficult or even impossible.

The treatment of a case of acute gonorrhœal peritonitis is conducted on the usual principles, with the addition of attention to the inflammation of the accessible portions of the tract, the vulva, vagina, and cervix. Where there is severe acute inflammation of this part of the tract absolute rest in bed is indicated, together with the use of bland and unirritating douches. Even when the affection has not penetrated to the tubes or peritoneum it is best in the acute stage of gonorrhœa not to attempt any heroic measures to cut the affection short, such treatment rendering the upward spread of the disease more likely. When the acute signs subside applications of 2 or 3 per cent. solution of nitrate of silver may be made with advantage to the affected surfaces.

### Subacute Pelvic Inflammation.

When an acute attack of puerperal, gonorrhœal, or other inflammation begins to subside nature undertakes the task of clearing away the inflammatory exudation and other débris resulting from the struggle. In equal steps with the improvement in the local signs and general condition of the patient absorption of the more recent exudations goes on and gradually the signs of peritonitis, with its accompanying cellulitis, are replaced by those proper to the underlying condition of the tubes or ovaries, the uterus returning more or less completely to its natural position. Remains of hard, brawny exudations may persist for some time, most commonly on the side of the pelvis, on which in many cases of pyosalpinx a hard, uneven elevation is felt, widely spreading over the surface. Absorption of this exudation and of the collections of serous fluid in the peritoneal cavity takes place with varying rapidity; sometimes a tumour of considerable size will disappear in the course of two or three weeks, in other cases the swelling subsides to some extent but remains considerable for many months, and this appears to depend commonly on collections of pus in the ovary or tube.

The amount of recovery after an attack of severe inflammation is often surprising and may be so complete that conception takes place promptly and the patient may even pass through the resulting pregnancy with comparatively little disturbance. In a very large proportion of the cases, however, recovery is only partial, the organs and pelvic peritoneum remaining in a state of subacute or chronic inflammation, and the patient suffering more or less severely from the various chronic symptoms that have already been detailed, or frequently experiencing repeated acute attacks. In some cases these attacks gradually decrease in severity and after the second or third there is no recurrence. Such a course has appeared to me to be more frequent after infection by the pyogenic organisms. A typical case of this kind was the following:—

The patient, aged 25 years, was admitted to the General Hospital, Birmingham, on the eighth day after labour with a retained placenta and pelvic abscess; the leucocyte count was 24,000, the temperature was 101° F., and the pulse was 116. Pus giving a pure culture of streptococcus pyogenes was evacuated by a posterior vaginal incision and the patient was discharged a month later. Three months after the labour she was readmitted with an acute attack of peritonitis. There was a mass chiefly in the right posterior quarter of the pelvis, the temperature was 100·8°, the blood count was 9000, and the pulse was 112. The attack subsided promptly with rest in bed. Three months later she was admitted with a third attack of acute pelvic peritonitis attended by considerable exudation behind the uterus. The general appearance was good, the temperature was 98·4°, the pulse was 76, and the leucocyte count was 11,700. Through a posterior vaginal incision serous fluid was let out, which gave a feeble growth of staphylococcus albus. Bimanual examination with two fingers through the incision showed that there was a small swelling about each set of appendages, probably due to matting. The patient made a good recovery and has remained well since. Here the streptococci died out completely in less than six months, and the successive attacks of acute pelvic peritonitis gradually diminished in severity.

In other cases the acute symptoms soon subside, the patient returning to work and remaining fairly well, even for long intervals, and then on slight occasion developing a dangerous illness. Such a case occurred in a woman, aged 22 years, who had had a six months' miscarriage 15 months before admission and had made a fair recovery. Three days before admission the patient was at work, in the course of which she made a sudden turning movement which appeared to cause something to give way in the lower abdomen. On admission she was gravely ill, and was constantly vomiting; the temperature was 101° F., the pulse was 132, and the leucocyte count was 28,000. A double tumour was present in the posterior part of the pelvis; lower abdominal distension and rigidity prevented the determination of the upper border of the swelling. Eight days later the patient was very much better, the temperature varying from 98° to 101°, the pulse being 100, and the leucocytes numbering 17,000. The mass was now well defined, very much larger, and extended upwards to the umbilicus. 14 days later the swelling had nearly subsided into the pelvis, the temperature and pulse were normal, and the leucocyte count was 11,500. A diagnosis of double pyosalpinx was made and five weeks after admission the abdominal radical operation was performed, both tubes being found distended with pus. A small collection of pus was also present in a pouch among the intestines at a little distance above the pelvic brim; this pus and that from the tube both gave pure cultures of streptococcus pyogenes. The patient made a slow but otherwise satisfactory recovery and was discharged to a convalescent home six weeks after the operation.

Treatment during the subsidence of acute symptoms has to be directed towards aiding the patient to get rid of the débris. For this purpose the most important means is prolonged rest, until the acute symptoms have completely passed off. If arrangements can be made for much of this rest to be taken in the open air the patient convalesces with greater rapidity. Nourishing diet suited to the digestive powers, careful attention to the excretions, and the administration of tonics are the other important points in the general management of such a case. Means intended to promote absorption comprise the local use of copious hot vaginal douches, vaginal tampons saturated with glycerine, glycerine and ichthyol, with solutions of iodide of potassium and vinum opii, or other agents. The application of iodine or of repeated flying blisters to the lower abdomen is of less use. In many cases the local application of heat to the pelvis by means of an electric bath has appeared to me to be of decided service. In the more chronic cases the continuous administration of small doses of mercury and iodide of potassium, as recommended by Professor J. W. Taylor, deserves a trial. When the acute symptoms have completely subsided gradually increasing exercise, especially driving and walking, is of service and a change of air and scene is indicated. For some months it is advisable for the patient as far as possible to keep her bed during the menstrual periods and at any rate to be careful to avoid at this time any form of over-exertion, whether at work or exercise, and particularly to avoid "catching cold."

At any time during the months succeeding the acute attack the question of operation may arise and I find that among my operations 11 non-suppurative cases out of 83 and 29 suppurative out of 152 were operated upon within a year after labour or abortion. Among the suppurating cases pus in the ovary and pelvic abscess formed the most frequent conditions calling for early operation, 12 cases of pelvic abscess out of a total of 41, and 12 of suppurating ovarian out of a total of 31 being operated upon in these circumstances. The principal indications for early operation are found sometimes in the persistence of severe symptoms such as fever, pains, and general illness, and at others in the occurrence of repeated acute attacks of pelvic peritonitis following each other at short intervals. In such cases it is important to wait whenever possible until there is a strong probability that the pus has become sterile, a point to which I shall return later.

## Chronic Pelvic Inflammation.

In the chronic stage of pelvic inflammations, when active changes have long since ceased, the amount of local change varies enormously. In a large number of cases the only physical signs are those of adhesions, as shown by the immobility of organs which in normal circumstances are moveable. The uterus is not infrequently bound down in retroversion by adhesions left after pelvic peritonitis, the adhesions being found most dense and abundant about the body of the uterus itself, the ends of the Fallopian tubes sometimes remaining free in cases where infection has spread through the wall of the uterus into the peritoneal cavity. Where the spread has been by way of the tubes the adhesions are most abundant and firm in the neighbourhood of the peritoneal ostium. The adherent ovary does not slip from between the fingers in bimanual examination, so that it is particularly easy to palpate. The position of such an adherent ovary varies; sometimes it is plastered on to the side of the pelvis, a considerable interval intervening between it and the side of the uterus. More often it is adherent to the back of the broad ligament at a lower level than natural, often close to the side of the uterus.

In many cases the signs of an old inflammation are more marked and are to be found in matting together of the appendages to form a characteristic swelling, which is sometimes called the tubo-ovarian tumour. This tumour comprises the thickened Fallopian tube, ovary, and broad ligament, all of them adherent to each other, and the mass occasionally also adherent to other structures, especially the omentum, coils of intestine, and uterus. A vivid imagination may sometimes trace the thickened tube in its course round the ovary, which forms a small firm mass in the middle and lower part of the lump. Where there are adhesions to intestine the apparent size of the tumour often varies remarkably at different times, being larger when the adherent coils are distended and smaller when care has been taken to empty them before examination. The shape of the tubo-ovarian tumour is uneven on the surface, on the whole rounded or oval; the consistence characteristically varies from part to part, the ovary forming a firm part of the tumour, the tube usually feeling less firmly solid, and any cyst that may be present in the ovary or in connexion with the layers of broad ligament forming a softer portion. The mass is tethered more or less firmly by adhesions; there is tenderness, usually not very severe. In two-thirds or more of the cases the affection is bilateral, though usually the changes found differ on the two sides. A smaller similar tumour may be present on the opposite side, or there may be merely the signs of an adherent ovary, or the uterus may be drawn over and adherent to the opposite side in the absence of any obvious swelling in that situation. Examination by the rectum enables the size, shape, and consistence of the tumour to be determined more accurately and its relation to the back of the broad ligament and to the uterus to be more clearly defined.

In other cases the tube is distended into a sac containing serum or pus. Hydrosalpinx forms a thin-walled cystic swelling; pyosalpinx a hard, thick-walled tumour. In some of the larger cases of hydrosalpinx the tumour forms a considerable swelling rising out of the pelvis into the lower abdomen, where it forms a more or less rounded well-defined tumour extending as high as, or even higher than, the umbilicus, not tender, and in this situation often showing a certain amount of mobility. Bimanual examination shows that the uterus in the great majority of cases is on the front of the tumour, though occasionally it is found retroverted with the tumour lying above and in front. In the smaller cases the distended tube, together with the ovary, forms a mass varying in consistence from part to part, the ovary lying below in the midst of the tumour and feeling firm, while the dilated tube, softer and more yielding, curves round it. Where the hydrosalpinx has attained a greater size the outer end forms by far the larger portion and it may sometimes be made out that the inner end attached to the cornu of the uterus is thickened to the size of a finger or so and characteristically convoluted. The outer and lower part of the tumour is practically always densely adherent to the side of the pelvis or the back of the broad ligament, as is evidenced by lack of mobility. In the largest cases and in those where the uterus is retroverted the relation of the tumour to the uterine cornu is often difficult or even impossible of recognition. In a small number of cases a hydrosalpinx opens up the layers of the broad ligament and extends downwards towards the pelvic floor; in such cases the uterus is pushed forward and towards the opposite side and the physical signs are those of an intra-ligamentary ovarian cyst. In most cases of distended tube the appendages of both sides are affected, but as a rule not symmetrically. With a hydrosalpinx of fair size there may be found a smaller hydrosalpinx on the opposite side, or merely the signs of an adherent ovary, or of an ovary and tube thickened and matted together, or the uterus may be drawn over and adherent to the opposite side in the absence of any obvious swelling in that situation. A hydrosalpinx is not tender to pressure. Any tenderness that may be present is due either to the condition of the ovary or to that of the pelvic peritoneum.

Pyosalpinx forms a hard, uneven, and immoveable tumour; the hardness depends on inflammatory thickening of the walls of the tube and of the broad ligament and pelvic peritoneum as well as on the incorporated ovary. The consistence often varies at different parts; the pus tends to collect more in the outer ampullary portion of the tube, in which position there is accordingly often a softer and more yielding part. The mass is usually tender, though in chronic cases this sign may be entirely absent. The shape of the tumour is irregular and uneven. Occasionally it can be made out that there is a large, irregular, rounded tumour with a thickened firm prolongation uniting it to the cornu of the uterus. In the larger cases the shape is sometimes elongated and curved like that of a sausage or banana, and in the same cases the consistence, owing to the relative thinness of the walls and abundance of fluid contents, is frequently softer and more cystic, sometimes resembling that of a hydrosalpinx.

The physical signs are bilateral in more than two-thirds of the cases, but as in the case of hydrosalpinx, so here, the signs are usually not symmetrical. Where two large tumours are present they frequently come into close contact in the middle line, but it is generally possible to make out that a large mass filling up the posterior portion of the pelvis is double by feeling an antero-posterior groove on the lower surface, either through the vagina or much more easily through the rectum.

In the intercurrent acute attacks of pelvic peritonitis great variety in position is found in the physical signs, and these vary according as the peritoneum with its adjacent connective tissue is infiltrated and hardened (fibrinous peritonitis) or as collections of fluid form in the peritoneal cavity (serous peritonitis). The upper portion of the tumour is formed by adherent intestines and omentum and consequently the upper limit feels ill defined on bimanual examination. As absorption takes place the induration diminishes irregularly and gradually the physical signs of enlargement of one or both sets of appendages become marked. The induration tends to remain longest as a rule on the outer and posterior pelvic wall where it may often be felt as an uneven, broadly adherent firm plate between the outer end of a pyosalpinx and the pelvic wall.

In cases of pelvic inflammation, no matter to what germ the disease may be attributed, it is of the greatest importance in deciding upon treatment to be able to diagnose whether pus has been formed. Help in making the diagnosis may be sought in the physical signs. In the early stages when, in the middle of hard, board-like exudation, patches of softening make their appearance along with the general symptoms of suppuration, the presence of pus and its location become evident. In the presence of an acute intercurrent attack of pelvic peritonitis it is impossible to diagnose the presence of pus until the acute symptoms have passed off, and absorption of the recent inflammatory products has taken place. Then, if the case be one of pyosalpinx or of suppuration in the ovary, the resulting tumour is hard and nodular and usually firmly fixed by adhesion to the wall of the pelvis. If no pus be present the consistence is less dense, and frequently thin-walled cystic portions may be made out, due usually to small cysts in the ovary or to hydrosalpinx. Much help is afforded by a leucocyte count in many cases, but this requires to be taken into consideration along with all the other symptoms and physical signs. The leucocyte count is merely a link in the chain of evidence, a strong one no doubt, but still only a link. In acute intercurrent attacks of pelvic peritonitis the blood count is commonly found to be raised, being often 15,000 or more, even in non-suppurative cases. As the attack passes off the blood count in these cases rapidly falls to normal. In suppurative cases, on the other hand, the count is sometimes observed to increase or to remain for a considerable time above normal. The location of the pus has a marked influence on leucocytosis, collections in the peritoneal cavity as a rule giving a higher and more persistent blood count than collections in closed cavities, as, for instance, in a pyosalpinx or suppurating ovary. The particular micro-organism present has also an influence. In attacks of acute gonorrhœal salpingitis the blood count is raised only to a moderate degree, usually not more than 14,000 or 15,000. In infection by the staphylococcus and streptococcus the blood count is frequently much higher. In tuberculous affections the number of leucocytes does not exceed, and often falls below, the normal average; when it remains persistently high it points to the occurrence of a secondary infection by pyogenic or saprophytic organisms. In a doubtful case repeated estimation of the leucocytes is important and frequently enables us to form a correct opinion as to the presence of pus.

When pus has formed it is of great advantage to know whether it still contains living organisms or not. Where these are still present it is better, whenever possible, to postpone radical operation, and to content ourselves with opening and draining abscess cavities in the peritoneum or cellular tissue. Pathogenic and saprophytic germs in closed sacs usually quickly die out but the time taken in the process varies very greatly. Nine months has been suggested as the time after which one may reckon with reasonable certainty on pus having lost its virulence, but in many cases the germs disappear in a considerably shorter time than this. In some cases, on the other hand, germs live for much longer, and in one of the cases above related living streptococci were found in a pyosalpinx that ruptured 15 months after its origin in parturition.

The presence or absence of fever is no certain indication, though it has a certain importance; in the majority of cases in which fever is persistent germ-containing pus is present and therefore it is better to wait, unless there are symptoms of urgency. A high leucocyte count usually means the presence of virulent pus and where present it is also better to put off operation. In many cases, however, leucocytosis is present in cases of suppuration where the pus is sterile.

The exploring needle may prove useful in obtaining pus from cases of pyosalpinx for the purposes of bacteriological examination and when carefully used with aseptic precautions the small puncture necessary is not likely to give rise to trouble. The puncture should be made through the vaginal fornix after careful bimanual examination to determine the probable situation of the pus.

In chronic cases of pelvic inflammation it is frequently impossible to determine the germs which caused the condition, these having long ago died out. Where foul-smelling pus is present the cause has been either some of the putrefactive organisms, or the bacterium coli commune, but even here the original cause of infection is often uncertain, because an old collection of pus may become secondarily infected by the bacterium coli penetrating through the wall of an adherent coil of intestine. This seems to be a not infrequent occurrence in tuberculous pyosalpinx, as was proved in a recent case of my own, and as I believe happened in at least two other instances. Where the pus in a pyosalpinx is sterile, and has no disagreeable smell, it is often impossible to tell whether it owes its origin to the gonococcus, or to the streptococcus, or other pyogenic organisms. In many cases, however, even in the most chronic class, it is possible to obtain some assurance of the nature of the case. The gonococcus has the peculiarity of affecting many different parts of the genital tract, and the inflammations caused by it tend to persist indefinitely; frequently, therefore, evidence can be found in the state of the urethra, vulva, vagina, and cervix, which, while stopping short of actual proof, nevertheless affords a strong presumption of the origin of the disease in the appendages. Of 94 non-suppurating cases of all kinds, 20 showed fairly conclusive evidence of gonococcal origin; included in these figures were eight cases of hydrosalpinx out of a total of 23. Of 152 suppurative cases 45 were believed on the clinical evidence to be gonococcal. In all probability in a considerable proportion of the remainder the gonococcus had been the effective agent, but had left no trace behind other than the diseased appendages. In a much smaller proportion of cases, two of the non-suppurative and seven of the suppurative, evidence of syphilis was obtained, but it did not appear that this disease had given rise to the changes in the tube and ovary.

The treatment of chronic cases of pelvic inflammation depends partly on the physical signs that are present, and still more upon the course of the affection. In some cases the disease has run its course, leaving only adhesions about the organs, which give rise to no symptoms, the condition of the appendages being discovered, so to speak, accidentally; such cases require no treatment of any kind. In other patients the complaints and symptoms which make up the clinical picture of neurasthenia, are found in patients who have the signs of chronic adhesive pelvic peritonitis or of salpingitis, and it becomes difficult to decide whether active treatment for the condition of the appendages is indicated. Often such patients complain more or less of pains in the genital zone, and of dysmenorrhœa, and a vicious circle is set up, the weak general condition of the patient, and especially of her nervous system, magnifying any pains that are present, and the local disturbance in its turn causing deterioration of the general strength. Such patients are frequently of a neurotic stock and included among them are many highly intelligent young women, sometimes tall and thin, but often below the average size, and slim in proportion. Patients in the same group frequently have a floating kidney and occasionally suffer considerable inconvenience from that cause. They are generally women in the twenties or early thirties and I have not been able to discover what becomes of their complaints after the age of 40. In them surgical treatment is usually of little benefit. The disuse into which the term chronic ovaritis has fallen has made it more and more difficult to label the cases, but has probably proved a gain to the patients. The condition appears to be due primarily to neglect of the elements of hygiene, to the want of proper exercise and fresh air, and to improper feeding. Often the teeth are defective and, as a result of all these causes, the functions of digestion and assimilation become defective.

In another group of patients with signs of salpingo-ovaritis the complaint is merely that of sterility. Sometimes in these cases there is a temptation to suggest operation with a view to opening up the tubes. Before deciding upon such a course it is necessary to make sure that no trace of gleet remains in the cervix or urethra and that there is none in the husband, otherwise the operation can hardly prove other than a failure. In the treatment of these cases there is no question of the ordinary routine treatment for sterility, that of dilatation of the cervix, and it is well to bear in mind that whenever there are physical signs, however slight, of old disease of the appendages dilatation of the cervix is attended by very considerable risk.

In other cases in which there are physical signs of old inflammation of the appendages, chronic complaints of pain of moderate severity, of dysmenorrhœa, or of menorrhagia, or leucorrhœa are made. In these cases the usual treatment of the symptoms by medical means generally suffices but in ordering and carrying out such treatment it has to be borne in mind that a fresh acute attack may easily be set up. Surgical procedures which are usually of minor importance, such, for instance, as dilatation or curetting, and strong applications to the interior of the uterus, are generally to be avoided and where considered necessary should be undertaken with even more than the usual precautions.

In patients who make their appearance for the first time in an intercurrent acute attack it is often necessary to decide whether operation should be recommended at once or whether medical treatment should be continued. Occasionally it may be necessary to operate at the height of an acute attack to endeavour to save the patient from imminent death. Usually the urgency is less and experience has proved that where it is possible to postpone operation success is more easily and safely attained when the operation is performed at the end of an acute attack. It would appear that the patient's blood and tissues become protected, presumably by antibodies of various kinds, which are heaped up during the course of an acute attack, and that the immunity thus acquired diminishes with some rapidity after the acute attack has completely passed off. The decision to make it a general principle that operation should be undertaken after the patient has had a certain number—one, two, or more—of acute attacks is not easy in these cases as in appendicitis. In the latter case we are dealing with an organ that is probably of no use to the economy, while in the former we have to do with organs which, in addition to their own proper functions, exercise an important influence on the whole of the body, so that it is desirable whenever possible to preserve them. The decision to operate in a patient who suffers from acute attacks must depend on the social position of the patient as well as on the number and severity of attacks. Where the severe attacks follow each other at short intervals and there are marked signs of changes in the appendages operation should be undertaken. Where the attacks occur at increasing intervals and become gradually less severe, and where the physical signs and symptoms in the intervals do not point to the presence of pus, medical treatment should be patiently persisted in.

When operation has been decided upon in a case of pelvic inflammation it is necessary to decide by what route, vaginal or abdominal, the operation should be done. Both routes have their special advocates who prefer one or the other in every case. Each, however, has its own sphere. Operations through the vagina are most useful in certain of the less severe cases in which intervention is indicated. Where the tube and ovary are enlarged moderately and adherent chiefly to the uterus, so that they move fairly freely together, then operation through the vagina, preferably through the anterior fornix, is advantageous; but where the appendages are adherent firmly to the side of the pelvis, where there are wide-spread adhesions, or where the uterus cannot be brought down to the vulva, the abdominal method is by far preferable.

*Operations for Pelvic Inflammation.*

| — | Non-suppurative. | | Suppurative. | | | Tuberculous appendages. | Total. |
|---|---|---|---|---|---|---|---|
| | Salpingo-ovaritis. | Hydrosalpinx. | Pyosalpinx. | Suppurating ovaries.* | Intra-peritoneal pelvic abscess.† | | |
| *Abdominal section.* | | | | | | | |
| Exploratory... ... ... | — | — | 2 (1) | — | — | 1 | 3 (1) |
| Removal of one set of appendages ... ... | 24 | 6 | 28 (1) | 5 | — | 3 | 66 (1) |
| Removal of both sets of appendages... ... | 9 (2) | 5 | 25 (4) | 4 | — | 3 (2) | 46 (8) |
| Breaking down adhesions, ignipuncture, salpingostomy ... | 19 (1) | 3 | — | — | — | — | 22 (1) |
| Incision and drainage of abscess ... ... ... | — | — | — | — | 17 | — | 17 |
| Hysterectomy ... ... | 3 | 4 | 49 (5) | 4 | — | 3 | 63 (5) |
| Total ... ... | 55 3) | 18 | 104 (11) | 13 | 17 | 10 (2) | 21 (16) |
| *Vaginal cœliotomy.* | | | | | | | |
| Removal of one set of appendages ... ... | 3 | 1 | 2 | 1 | — | 1 | 8 |
| Removal of both sets of appendages... ... | — | — | — | — | — | — | — |
| Resection of ovary ... | 6 | — | — | — | — | — | 6 |
| Adhesions broken down, ignipuncture, salpingostomy, &c. | 7 | 3 | — | — | — | — | 10 |
| Posterior vaginal incision ... ... ... ... | — | — | — | — | 12 (2) | 1 | 13 |
| Vaginal hysterectomy | — | 1 | 3 | — | — | — | 4 |
| Total ... ... ... | 16 | 5 | 5 | 1 | 12 (2) | 2 | 41 (2) |

The numbers in brackets signify deaths following operation.
* Excluding 17 with pyosalpinx.
† Excluding 12 with pyosalpinx.

In 41 of my cases operations of various kinds have been carried out through the vagina. In 13 of these an incision for the evacuation of pus has been made, usually through the posterior fornix; two of these cases died, both patients being in a gravely septic condition at the time of operation. In several other cases a posterior vaginal incision was made by myself or others and at a subsequent date when the affection of the appendages demanded it a second and more radical operation was performed. In 16 cases various conservative procedures were undertaken through the vagina, including salpingostomy, breaking down adhesions, ignipuncture, and resection of the ovary. In eight cases one set of appendages was removed by this route for inflammatory affections. In one case of double hydrosalpinx and in three of double pyosalpinx, all complicated by prolapse of the uterus, the vaginal radical operation was performed.

In 21 of the vaginal cases operation was undertaken for various non-suppurative conditions and for the same group of affections, including hydrosalpinx, 73 of my operations have been performed by the abdominal route. The procedures here include the removal of one set of appendages in 30 instances; of both sets in 14; various conservative operations in 22; and the abdominal radical operation in seven, including four cases of large and very adherent hydrosalpinx. In the total number of 94 operations for non-suppurative conditions there have been three deaths. One of these was due to pulmonary embolism on the eighth day after operation, the patient with normal temperature and pulse-rate having shown no previous symptoms of danger following the operation; the second death was due to anæsthetic gangrenous pneumonia, the pelvic condition as observed at the necropsy being normal and the abdominal incision firmly closed. The third death was caused by peritonitis consequent on an oozing of six or eight ounces of blood from separated adhesions. At least nine of the patients operated upon for non-suppurative conditions of the appendages have subsequently borne children.

In the worst cases of suppurative affections the choice of operation lies between double oöphorectomy, the abdominal radical operation, and the vaginal radical operation. The vaginal operation has been largely practised by surgeons in France and Germany. In its favour the claims are made that shock is less, that the general peritoneal cavity is not interfered with, that drainage is more direct and efficient, and that there is no abdominal scar to give rise later to ventral hernia. Many surgeons, however, begin the operation by removal of the uterus, and one of the great objections depends upon the possibility of removing a fairly healthy uterus and of afterwards discovering that one set of appendages is still serviceable. A further, still more serious disadvantage is that adhesions, more especially to intestine, are much more difficult to treat by this route and that the repair of a torn viscus is difficult or impossible. The immediate mortality of the vaginal radical operation has not exceeded 5 per cent. in the hands of the best operators, but lacerations and fistulæ, both intestinal and urinary, have been more frequent than when operation is undertaken through the abdomen. Of the abdominal operations removal of the two sets of appendages is the older and has had an extensive trial. The abdominal has, in the first place, the great advantage of enabling us before proceeding to remove any of the organs to make a complete examination and to determine how much it is necessary to do. In many cases the actual condition of the organs is found on opening the abdomen to be decidedly less serious than has appeared from clinical examination, so that it is frequently possible to save one set of appendages. On the other hand, it not infrequently happens that, though signs have been chiefly observed about one set of appendages, the other tube and ovary are so severely damaged as to render their removal advisable. In the next place, adhesions can be separated by the aid of sight as well as of touch, and if intestine, bladder, or ureter is torn the necessary steps for the repair of the injury can be at once undertaken in the most convenient circumstances.

My abdominal operations for suppurative and tuberculous affections include three exploratory incisions with one death, which occurred in a profoundly septic case with perforated pyosalpinx and adhesions so dense that it was impossible to separate them. 36 times the removal of one set of appendages was carried out with one death from septic peritonitis. In 32 cases both sets of appendages were removed with six deaths. In two of the cases the operation was undertaken for tuberculous appendages and was followed by the development of fæcal fistula and death from gradual exhaustion. Of the other four fatal cases, in one the patient was desperately ill with septic peritonitis following the rupture of a pyosalpinx in labour; in a second the woman was wasted and cachectic, apparently as the result of chronic toxæmia; the other two died from septic peritonitis.

In cases of pyosalpinx in the old method of operation a stump of half an inch or so in length of diseased tube was left adherent to the uterine cornu, and from this stump a certain degree of infection was common, giving rise to suppuration of ligatures and consequent sinus formation, or sometimes to fairly extensive and dense peritonitic adhesions. An improvement on this method of treating the pedicle has been made by cutting out the uterine portion of the tube, leaving a wedge-shaped depression that can be easily sutured together. But after the removal of both sets of appendages for suppurative affections the uterus, instead of quietly undergoing atrophy, has often given rise to severe pains and various discharges, so as to render its removal advisable at a later date. In many cases it is found that the uterus is universally adherent, that it is enlarged, and that both cervix and endometrium are in a state of chronic inflammation. Such a condition of affairs is, of course, frequently to be expected since infection usually spreads into the tubes and pelvic peritoneum by way of the uterus. Moreover, it has yet to be proved that the possession of a uterus devoid of appendages, especially when that uterus is more or less diseased, is an advantage to its possessor. The suggestion has been made, based on no evidence, that by leaving the uterus the symptoms of the menopause are modified, and that possibly the uterus provides an internal secretion in the same way as the ovaries are supposed to do. The question of the correct operative treatment of severe affections of both sets of appendages is still unsettled, but the above considerations have induced many surgeons, myself among the number, to undertake the removal of the uterus along with the appendages in cases where these are found to be hopelessly disorganised.

Among my own operations to the end of 1906 are included 53 of the abdominal radical operation for ordinary suppurating affections of the appendages and three for tuberculous disease; five deaths followed—a mortality of nearly 9 per cent. Of the three tuberculous cases the uterus was affected simultaneously with the tubes in two; in the third the tuberculous tubes and left ovary were removed through an anterior vaginal incision, and six years later the tuberculous uterus and right ovary were removed by the abdominal route. The methods of operation employed include supravaginal as well as total abdominal hysterectomy. The supravaginal method was employed in 15 cases, with three deaths. One of the fatal cases occurred in an alcoholic patient; a second in a fat woman with a fibroid weighing three and three-quarter pounds, complicated by a pyosalpinx containing four or five ounces of thick yellow pus; the pyosalpinx had caused constriction of the ureter one and a half inches above the bladder and consequent hydronephrosis. In the third case the patient was ill, dusky, and emaciated, and died from general peritonitis. In the remaining 41 cases the complete operation was done, the cervix being removed along with the rest of the uterus and appendages. Two deaths have followed the operation, a mortality for this method of rather less than 5 per cent. One of the fatal cases occurred in a feeble, emaciated, and cachectic woman, aged 33 years, who had been seized with an acute attack of septic peritonitis three weeks before the operation; the only labour had taken place 12½ years before, and there had been no previous severe attack, though the woman had never been well; death from suppurative peritonitis occurred six days after the operation. The other death occurred in a woman aged 54 years, whose only pregnancy occurred at the age of 23 years; 31 years later abdominal pains began and a tumour was discovered two months before operation; the patient had been wasting for a year. On admission she was desperately ill, with furred tongue, foul breath, pulse 136, and signs of cardiac dilatation. Death occurred nine hours after the removal of a fibroid uterus, together with a large suppurating ovary densely adherent in the pelvis.

The total abdominal operation is in most cases not much more difficult to perform than the supravaginal and presents two great advantages. In the first place a frequent source of subsequent trouble is removed; the blood-supply of the cervical stump is very apt to be interfered with to some extent in the supravaginal method, and the consequent interference with nutrition leads sometimes to a certain amount of necrosis and often permits infection of the cut surfaces and pus formation. In the second place the removal of the cervix permits free drainage to be provided into the vagina where this is considered desirable. On the other hand, the removal of the cervix has no corresponding disadvantages; the only argument for its retention is that it forms part of the pelvic floor, but experience has shown that the pelvic floor is not a whit less capable of supporting the superincumbent viscera after it has been deprived of the cervix.

---

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.—This congress will be held in Berlin from Sept. 23rd to 29th, under the patronage of Her Majesty the Kaiserin. In order to provide for the entertainment of the numerous ladies, both German and foreign, who are expected to accompany to Berlin the gentlemen who will be engaged in the scientific work of the congress, a ladies' committee has lately been formed under the honorary presidency of H.H. Princess von Bülow, Countess Posadowsky-Wehner, Lady von Studt, and the Lady Mayoress Kirschner of Berlin. Ladies of the committee propose to accompany the visitors to inspect the various establishments for the public welfare, the art galleries, and other interesting sights. Privy Councillor Dr. Eilsberger, president of the local committee of the congress, will act as secretary to the ladies' committee. The address of the secretary-general of the Congress is Eichhornstrasse, 9, Berlin.

# The Harben Lectures

ON

# EXPERIMENTAL RESEARCHES ON SPECIFIC THERAPEUTICS.

*Delivered at 20, Hanover-square, London, under the auspices of the Royal Institute of Public Health,*

BY PROFESSOR PAUL EHRLICH, M.D.,
DIRECTOR OF THE KÖNIGLICHES INSTITUT FÜR EXPERIMENTELLE THERAPIE, FRANKFORT.

## LECTURE II.[1]

*Delivered on June 10th.*

### ATREPSY.

GENTLEMEN,—I will give you an example from my researches which will make it clear what I mean by atrepsy, and I will take a fairly simple case—viz., that of the cobra venom. This poison produces in the body a number of very different injuries—e.g., it affects the nervous centres, the subcutaneous tissue, the red blood corpuscles, and the endothelia; each separate and individual effect is the result of a different individual poison. Thus one can prove with absolute certainty that the effect on the nervous tissues is produced by the neurotoxin, that on the blood corpuscles by a hæmolysine, and the inflammatory changes by a special endotheliotoxin. It has been shown that those components of snake venom which attack the red blood corpuscles are present in such a form that by themselves they do not suffice to destroy them.

By following the researches of Flexner and Calmette my former assistant and friend Dr. Kyes has succeeded in throwing some light on these difficult subjects. He proved that the hæmolytic component of the cobra venom is an amboceptor, which, however, differs from the bacteriolytic and opsonic amboceptors by combining not with the complements of the blood but which enters into union with a chemically well-defined substance—lecithin. By shaking cobra venom solutions with a solution of lecithin in chloroform one can show the whole hæmolytic toxin to pass quantitatively into the chloroform part, whilst the watery part has retained the whole of the true poisonous principle—viz., of the neurotoxin. From the chloroform solution one can isolate the active hæmolytic principle by precipitating with ether; it can thus be obtained in the form of a white powder, which in chemical analysis gives figures almost exactly fitting to the formula of a mono-stearyl-lecithin. In this process there has therefore been split off one of the two molecules of fatty acid which can be regained quantitatively from the ether. The substance thus obtained is produced by the union of a small quantity of the hæmolytically active part of cobra venom with a relatively large number of lecithin molecules. It is easy to prove that we really have before us here a chemical compound, and not the result of an adsorption similar to that recently described by Michælis between rennet and mastix, for it is impossible to split up the substance by solvents into two components—namely, mono-stearyl-lecithin and the cobra venom amboceptor, and that should be possible if it were only such a mixture. On the other hand, in conformity with its altered chemical character, the substance has obtained new properties not found in cobra venom. For in the first place it is distinguished from the cobra amboceptor by having become so completely thermostable that solutions of this cobra-lecithide can be boiled for hours without losing a fraction of their efficiency, whilst in similar circumstances the original venom would be rapidly destroyed. A further important property is shown by the fact that cobra-lecithide, even in small quantity, instantaneously and without any incubation, dissolves the erythrocytes, whilst snake venom, even in the presence of lecithin, only produces a similar effect after several hours. The long incubation observed in experiments with the native poison is explained by the fact that the real poisonous body has first to be formed by a synthetic process which in dilute solutions and at ordinary temperatures may naturally require some time for its completion.

Research work has shown that the hæmolytic amboceptors of snake poisons possess different affinities for lecithin. We may conclude that the firmness of union of lecithin in the different blood species is different, being highest in the sheep and the ox, lower in the rabbit, still lower in man, and lowest of all in the guinea-pig. You see here very clearly one of the conditions which are of importance for the definition of atrepsy—namely, that of independence. Lecithin has an affinity for certain constituents of the cell and it also has an affinity for the constituents of the poison; the difference between these two affinities decides whether cobra-lecithin can be formed and hæmolysis can thus be produced. If the affinity of the constituents of the stromata is higher hæmolysis does not take place—i.e., the lecithin is not at the disposal of the cobra-amboceptor.

The atreptic immunity, which results as I stated from certain substances not being at the disposal of the parasites, seems to me to play an important rôle in the study of tumours. I may even say that I first formed the idea of atrepsy as the result of numerous experimental observations upon malignant mice tumours which are of cardinal interest for modern cancer research. I believe that a number of clinical and experimental facts in this sphere of knowledge can only be explained by this hypothesis.

As you know, mice cancers are tumours showing a far-reaching analogy to human cancer, and it would therefore appear most justifiable to regard the experiences gained with them as the solid foundation of an experimental study of the tumour. Besides several analogies, however, the mice tumours show certain special features, chief among which is their mode of formation of metastases. It is most remarkable that the highly virulent carcinomata which have been cultivated in numerous generations very rarely show macroscopically visible metastases, whilst the slowly growing spontaneous tumours relatively more often, though also not very commonly, form large secondary nodules in the lungs. Our interest in this peculiar behaviour must even be increased, since Haaland has shown that microscopical metastases are by no means uncommon, but that they almost always remain below the limit of macroscopical visibility. I endeavoured to solve this problem by making, so to speak, artificial metastases—viz., studying in animals affected with an inoculated tumour the result of a second inoculation. I found the interesting fact, that the effect of the second inoculation was inversely proportional to the energy of growth of the primary tumour. In rapidly growing sarcomata and carcinomata the second inoculation almost always had a negative result; at best, the second tumour remained far inferior in size to the primary one. Only in the very slowly growing chondromata there was no distinct difference in their energy of proliferation. These results agree with the following observation which has been confirmed thousands of times: If, as is regularly done in my institute, the inoculation is carried out by introducing the capillary at the groin and pushing it up as far as the axilla, the greater quantity of inoculated material is deposited at the latter site, whilst only little of it remains at the groin. In the case of the rapidly growing carcinomata and sarcomata the large principal tumours almost always develop in the axilla, whilst a minute nodule is usually found in the groin. In the case of the chrondromata, however, both tumours usually show a fairly equal development. Thus in the latter case the macroscopical appearance somewhat resembles that of an hour-glass, whilst in the former it is more like a balloon with its car attached to it. To my mind, the explanation of this phenomenon is as follows: every proliferation depends in the first place on the avidity of the cells for the nutritive substances. Normally there are certain well-defined laws of distribution, which guarantee the normal working of the organic functions. The avidity of the tumour cells is increased compared with that of the body cells. The more energetically a tumour proliferates, the more vehemently does it attract the nutrient substances from the blood. In the case of a rapidly growing tumour it may therefore very easily occur that for such cells which are under very unfavourable conditions of nutrition—e.g., cells inoculated and metastatically carried away—there is an insufficient supply of nutrient substances, and that they therefore either perish from atrepsy or at least are unfavourably influenced in their growth. From this point of view it is also quite evident that slowly growing tumours can attain far greater dimensions than rapidly growing ones, since in the former the consumption of nutrient matter, in spite of their size, is less than in the latter, and thus the entire organism is injured to a lesser extent.

---

[1] Lecture I. was published in THE LANCET of June 15th, 1907, p. 1634.

I fail to understand how von Dungern can think himself justified in doubting the correctness of my explanation on the ground that hitherto the experimental proof of a permanent increase of cellular avidity by increased nutrition has not been adduced. I have never asserted that we can, by artificial means, permanently raise the cellular avidity. Such a power would obviously involve the possibility of artificial tumour production. There is, therefore, no contradiction—as von Dungern imagines—between my views and the facts that by artificial hyperæmia better nutrition is obtained and that after removal of large parts of the body—e.g., amputation of the thigh—the hypernutrition of the individual is evidenced not by the proliferation of functionating epithelium cells but by increase of the paniculus adiposus. From the fact that the increased avidity causes an increased attraction of nutritive material it does not follow inversely that copious nutrition should increase the avidity. An indirectly injurious effect of more highly avid cells on less avid ones can only then become evident if the body does not possess sufficient nutrient matter to saturate every avidity. What is the origin of the higher avidity of the tumour cells is quite unknown to us, for this question means neither more nor less than the last problem of tumour etiology.

An entirely different significance must be ascribed to the specific growth-producing bodies, for the existence of which we have received irrefutable proof chiefly by the work of Starling. As you may know he observed lactation in non-pregnant females as the result of injecting emulsions of embryones. But, of course, I should never think of asserting, as one might be led to think by von Dungern's explanation of my views, that by hypernutrition a virgin might become a wet-nurse. The specific growth-producing bodies play an important rôle also in other cases and are intimately connected with atreptic immunity. Thus we know that the influenza bacillus cannot do without hæmoglobin for its growth; therefore it is quite easy to cultivate the bacillus directly from the sputum, which almost always contains small quantities of hæmoglobin. But if we do not artificially add hæmoglobin to the subcultures the bacteria very soon die in them. Specific auxiliary growth-substances we must also admit in all those infectious diseases which are characterised by a marked localisation of the poison—even in syphilis.

The case is quite similar in that form of atreptic immunity which follows from my experiments of inoculating rats with mice tumour cells. As you know, hitherto no one has ever succeeded in transferring normal or tumour tissue to animals of a different species. The limits of transplantability coincide with those of bastardisation. The question, however, now arose as to whether the same barriers held good also for our highly virulent tumour material. To that end I employed the rat as the animal phylogenetically most nearly related to the mouse. In fact, if a virulent mouse tumour is inoculated to a rat the result is quite different from all hitherto known true cases of transference of tissue outside a species. For during the first eight days the cells both of carcinomata, sarcomata, and chondromata proliferate in the rat just as in the mouse. During this time tumours arise of the size of an almond to a date, containing numerous mitoses and even microscopically differing in no way from the mouse tumours. After that time, however, the limit of their growth is reached and there now follows gradual resorption, which is concluded after another week or two. If the tumour at its maximum development is transferred to another rat it does not gain any foothold there, whilst if it is re-inoculated to a mouse it again proliferates luxuriantly. It is possible to keep on carrying out this zig-zag inoculation mouse–rat—mouse–rat for any length of time without the slightest check to the energy of proliferation being encountered. The question now arises how it is possible to explain on the basis of these facts the immunity of the rat towards mice tumour cells.

We can *a limine* exclude the existence of a natural immunity by antibodies in the rat, in view of the at first luxuriant proliferation of the tumour. On the other hand, it would be possible to imagine that the resorption of the tumour might be the result of an active immunisation of the rat. That such immunisation ultimately occurs may be proved by the fact that the result of re-inoculating a rat in which a first tumour has been absorbed with a second tumour is always negative. I do not, however, consider it permissible to identify these two manifestations of immunity. For, in the first place, it is highly improbable that during the period of rapid proliferation of the tumour in the rat's organism any considerable absorption of tissue elements should occur. Further, previously to that period a production of antibodies has not been proved. Lastly, since the tumour when re-inoculated to the mouse never shows ever so slight an injury one would have to suppose—with von Dungern—that the anti-substance formed in the rat's organism was activated only by the complements of rats but not of mice. This again has up till now not been proved. A far simpler and more natural explanation of all these phenomena is afforded by my hypothesis of atrepsy. According to this, the mice cells require for their growth not only the ordinary nutritive substances which the rat can also supply to them in ample quantity, but, besides that, some well-defined substance which is present only in the mouse's organism. In the rat then these cells would only be able to go on growing so long as there still remains to them some of the specific growth substance that was introduced with them at the time of inoculation. When it has all been used up growth can only be further stimulated by giving a fresh supply of this substance—e.g., by re-inoculation to the mouse.

Time and again I have laid stress upon the fact that many nutrient substances are not present in the cells in a free state, and that therefore they are not at the disposal of any invader, but that always a struggle is necessary before they can be rendered accessible. In the case of snake venom I have shown that we are dealing with a simple difference between two chemical avidities. In the case of bacteria the affair may be rather more complicated according to the occurrence of either of two possibilities—viz., (1) a direct assimilation in consequence of a higher degree of affinity; or (2) an indirect action by injury to the cell. Supposing, for example, that a microbe had penetrated into a cell but had not the power of directly splitting off the fatty bodies; then these substances would not be immediately assimilable by it. Yet it would be able to obtain their possession, if it secreted a poison injurious to the cell, which would decompose the protoplasm. In such a case the fat would be liberated and could be assimilated by the micro-organism although the immediate affinity between the two may be a very low one. At any rate, these considerations might in so far be of interest as they touch upon an issue of biology and pathology, which has on the whole been somewhat pushed into the background of late years, since one has accustomed oneself in every infective process to think in the first place of a specific bactericidal action through the direct toxic substances of the body, its haptines, &c. This has led to our neglecting somewhat the simple possibility that certain micro-organisms may only be able to grow if certain conditions are given for their development and needs must perish if these conditions are not fulfilled. To my mind, this possibility can be important in many respects and is especially significant for our views on cancer immunity. At any rate, we are dealing in these questions with a highly complex field in which many possibilities are present, the most important being this difference of avidities.

It has been shown that the trypanosomes may alter their avidity for arsenic and thus acquire an apparent immunity. The contrary may occur in the case where the substance in question is not a poison but a nutritive body. Here we should be perfectly justified in supposing the avidity of the receptor to have become increased. The same thing may take place with micro-organisms which can physiologically diminish or increase their avidities. Thus in all these cases the struggle lies between the adaptability of the parasite and that of the host. The one whose adaptability in the last place is highest will remain victor. Of course this struggle is to a great extent influenced by indirect actions consisting in the secretion by each antagonist of dissolved substances hostile to the vitality and receptivity of the organism. On the part of the bacteria these substances are the toxins and the dissolved intracellular substances, on the part of the body the anti-substances.

A further rôle is played by actions of a protective and defensive nature. Thus we have shown that bacteria congregate in those parts where they find the most favourable conditions of nutrition, whilst the organism both by its phagocytes and by the means of encystment endeavours to make the pathogenic germs harmless and to eliminate them. You see, therefore, that this is a war waged in different fields, but in which to every action there corresponds a reaction. This war is waged in a three-fold manner by variations of affinity, by variations in the poison, and by localisation.

# TWO CASES OF INTERMITTENT HYDRONEPHROSIS TREATED BY OPERATION.

BY W. WATSON CHEYNE, C.B., LL.D., F.R.S., F.R.C.S. ENG.,
SENIOR SURGEON TO KING'S COLLEGE HOSPITAL, ETC.

THE following cases may be of interest as examples of excellent results after operation for intermittent hydronephrosis and as showing a modification in the method of dealing with the upper end of the ureter in some of these cases which is certainly an improvement over what I myself had done in previous similar instances.

CASE 1.—The patient, a married woman, aged 32 years, was admitted to King's College Hospital on Nov. 11th, 1905. She did not give a clear account of her trouble but what she told us practically amounted to this: For the last ten years she had suffered from time to time from attacks of pain in the left loin which had become more frequent of late and were practically continuous for the three weeks preceding admission. Of late she had also had occasional slight pain in the right loin. In these attacks the severity of the pain did not as a rule last longer than 20 minutes and it was accompanied by giddiness and nausea but not by vomiting. The pain was limited to the left loin and did not extend downwards. She had not noticed any variation in the amount of urine passed in connexion with the attacks nor had there ever been any blood in it. On examination both kidneys were freely moveable and somewhat large but they did not appear otherwise abnormal. A skiagram showed no stone. The urine was normal. Consideration of all the points led me to the conclusion that the case was one of intermittent hydronephrosis due either to kinking of the ureter from the mobility of the kidney or to some abnormality about the renal end of the ureter and therefore the following operation was performed on Nov. 17th, 1905.

*Operation.*—The left kidney was exposed in the loin and brought out through the wound. The kidney was enlarged and there were two cysts on its surface. The pelvis was greatly dilated and was almost as large as the kidney itself; the ureter was about the size of a No. 8 catheter and came off from near the upper end of the dilated pelvis. The result was the production of the valvular condition of the orifice of the ureter which seems to be the commonest cause of intermittent hydronephrosis. An incision was now made into the pelvis of the kidney about half an inch to one side of the ureter and extending upwards around it, and the state of the interior of the pelvis was investigated. It was then found that we had to do with the condition where the opening of the pelvis is placed high up and apparently closes from pressure as the pelvis fills with urine. I then slit the orifice of the ureter and the wall of the pelvis downwards as far as I could without going beyond the connexion between the two. The result did not, however, seem to be satisfactory, and I did not feel at all sure that when healing had taken place the trouble would not be reproduced. I therefore continued the incision in the pelvis of the kidney around the attachment of the ureter and about half an inch from it, or rather more at the upper part and less at the lower. The result was that an oval piece of the pelvis was detached, towards the lower part of which was the orifice of the ureter which had been enlarged by a vertical slit. Two or three fine catgut stitches were then inserted between the edges of the divided ureter and the pelvis, special care being taken as regards the lower angle. A piece of the lower part of the pelvis was now cut away and the oval portion was inserted into this opening by a series of catgut stitches avoiding the mucous membrane. A few additional Lembert's sutures were applied outside. Some of the redundant pelvis at the upper part was cut away and the edges being inverted the pelvis was closed by catgut sutures. The result was that the orifice of the ureter was attached to the lower end of the pelvis of the kidney, that its opening was enlarged and no longer valvular, and that there was a direct flow of urine from the pelvis into the ureter. The kidney was now returned and fixed in the loin in the usual manner and the wound was closed, a drainage-tube being inserted down to the pelvis.

The after progress of the case was uneventful. There was no escape of urine by the tube, which was removed on the third day, and the wound healed by first intention. There was a little blood in the urine for two or three days. The patient was discharged from the hospital on Dec. 30th, 1905, quite well.

CASE 2.—The patient, a man, aged 20 years, a gardener, was admitted on Nov. 11th, 1905. For the last three years he had been subject to attacks of severe pain in the left loin. These attacks had lately become much more frequent and he had had seven during the last two months. Each attack lasted about three days and after a few hours the pain became very severe and was accompanied by vomiting. During the attacks the patient passed but little urine, though afterwards a great quantity was voided. The urine had never contained any blood. The patient knew of no cause for the attacks; jolting did not cause pain nor increase it if it was present. There was no constipation. Neither kidney could be felt. The urine was of specific gravity 1030, acid, and contained no albumin or sugar. On Nov. 12th the patient had had a severe attack of pain in the left loin during the night. He vomited frequently and had to have morphine. The pain was limited to the back and loin and did not radiate down the thigh or towards the testicle. There was marked tenderness in this region. There was a great desire to pass urine but no frequency of micturition. The attack lasted about 12 hours and during that time 18 ounces of urine were passed; it was of specific gravity 1028 and showed an excess of phosphates but was otherwise normal (no note was taken as to the quantity of urine after the attack). There were some rigidity and fulness in the loin but the part was so tender and rigid that it could not be examined thoroughly.

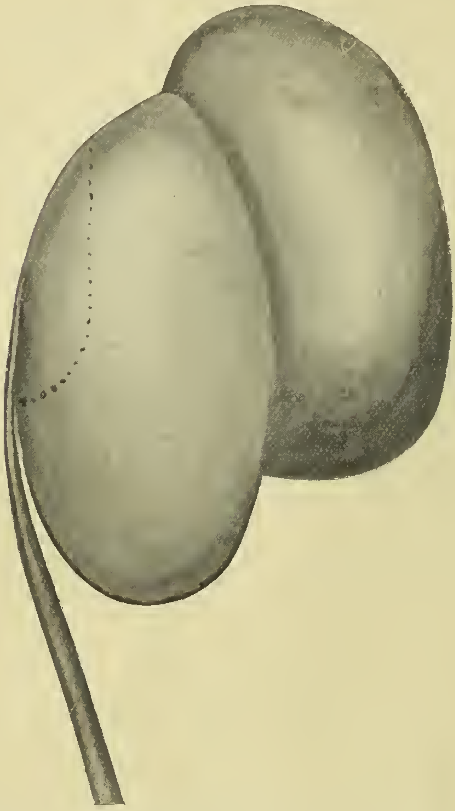
*Operation* was performed on Dec. 6th. A similar state of matters was found to that described in the former case. The kidney was enlarged, the pelvis was much dilated, and the ureter came off from the upper part of the dilated pelvis. The same procedure was adopted.

After the operation the patient had a good deal of sickness, lasting two or three days. The wound went on well, no urine escaped, the drainage-tube was removed on Dec. 18th, and healing was practically complete by the 26th. On that day, however, the patients in the ward were a good deal excited by the Christmas festivities, and this patient especially was sitting up and twisting about and very active. During one of his sudden movements he felt severe pain in his left side and next day he was tender there and there was some fulness. The temperature went up and during the next four days ranged from 100° to 103° F. and a distinct swelling formed. On Jan. 1st, 1906, an incision was made through the scar and a quantity of turbid urine was evacuated. The fluid contained 1 per cent. urea and a few staphylococci were found in it. A drainage-tube was inserted and for some days a little urine came through it. By Jan. 18th, however, the flow of urine had ceased and the drainage-tube was left out. He left the hospital well on Feb. 2nd.

It is evident that during the patient's violent movements on Dec. 26th some part of the union between the pelvis and the ureter must have given way and leakage had occurred. The opening must, however, have been very small, for once the accumulation of five days had escaped very little urine came by the tube afterwards.

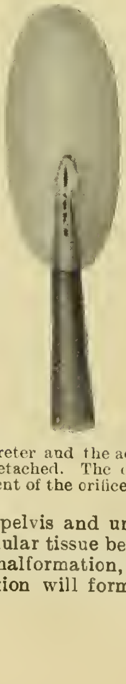
The condition of intermittent hydronephrosis is due to a variety of conditions but the one which I have most commonly come across is that which was present in the two cases described above—viz., the attachment of the ureter too high up on the pelvis, with the result that a valvular opening is formed which tends to become closed when the pelvis is distended. Whether this condition is congenital or acquired I am not prepared to say. It is conceivable that it may be acquired somewhat in the following manner. In all the cases which I have seen the kidney is freely moveable. As the result of that mobility the ureter may become kinked or so curved from time to time that there is a difficulty in the outflow of the urine. The result is that the pelvis becomes distended and as it yields more at the lower part than elsewhere a pouch is formed below the attachment of the ureter. This goes on increasing till by-and-by the ureter comes to arise from the upper part of the dilated pelvis and thus the orifice tends to become blocked as the pouch fills with urine. But against this theory is the fact that the ureter in these cases does not come straight off from the dilated pelvis but is adherent to the wall of this sac for some little distance (from a quarter to half an inch), so that one may put one blade of a pair of scissors into the ureter and the other into the pelvis and cut the intervening wall of pelvis and ureter for a little distance without opening the cellular tissue beyond. This looks much more like a congenital malformation, as it is not easy to see how an organic connexion will form between the walls of the ureter and pelvis as the result of a simple distension of the latter.

FIG. 1.



Showing line of incision in the pelvis of kidney and the attachment of the ureter.

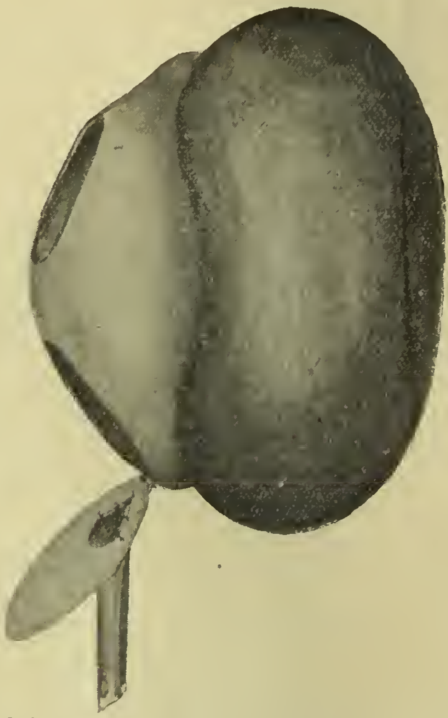
FIG. 2.



The upper end of the ureter and the adjacent portion of the pelvis of the kidney detached. The dotted line shows the incision for enlargement of the orifice.

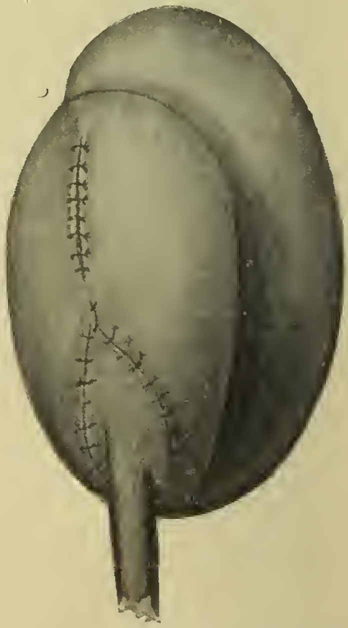
*Treatment.*—In previous cases of this kind I have contented myself with slitting down the valvular part of the orifice of the ureter from the interior of the pelvis, one blade of a pair of scissors being introduced into the ureter and the other remaining in the pelvis and the incision being carried as far down as the two structures are in intimate union. Fine catgut stitches are now inserted between the wall of the ureter and that of the pelvis, especially at the lower angle, so as to keep this new orifice patent.[1] In several cases

FIG. 3.



Method of attachment of the ureter to the lower part of the pelvis.

FIG. 4.



Final result.

---

[1] See Manual of Surgical Treatment.

the results have been good, but it has never seemed to me to be a perfect way of dealing with the condition. Theoretically it would be much better to detach the ureter completely, cutting the orifice obliquely, and attach it to a separate opening at the lower part of the pelvis. The difficulty in this case is the small size of the ureter and the consequent difficulty of manipulating it and attaching it so that there shall be no leakage at the point of junction with the pelvis. This difficulty is quite done away with by the method employed in the foregoing cases, and which the drawings reproduced will fully explain. By taking a piece of the pelvis along with the ureter we not only get something that we can handle easily but also an oval piece of tissue which can be much more accurately stitched to the new opening of the pelvis with much less danger of leakage. The details of the operation are as follows. An oval piece of the pelvis of the kidney containing the orifice of the ureter is excised, the greater extent of the oval being above the ureter. At the lower part the incision runs about a quarter of an inch below the point where the ureter leaves the pelvis, at the sides it is carried out to about half an inch, and at the upper part rather more. This piece being detached the orifice of the ureter is inspected and one blade of a pair of scissors is introduced into the ureter not quite down to the point where the ureter loses connexion with the pelvis, and the other blade being on the pelvic surface the scissors are closed and in this way a slit-like opening is made and the valvular orifice is got rid of. The wall of the ureter and that of the pelvis along this cut, and more especially at the lower angle, are now united by three or four fine catgut sutures. A piece of the lower part of the dilated pelvis is now cut away corresponding in size and shape to the above, and the ureter is then fastened into this opening by a series of Lembert catgut sutures. If deemed advisable a portion of the dilated pelvis may now be cut away and the opening stitched up in a linear direction. If possible it is well to avoid any connexion between this incision and that in which the ureter is attached as leakage is apt to occur at the angle of union. If such a connexion is made as was the case in the first patient I think it is well to put in a second row of Lembert's sutures at the junction with the oval so as to make it more secure. The kidney is now fixed high up in the usual manner. I think it is well to put a tube down to the kidney for a few days.

Harley-street, W.

---

# AN IMPROVED PREPARATION FOR INTRAMUSCULAR INJECTIONS OF INSOLUBLE SALTS OF MERCURY IN THE TREATMENT OF SYPHILIS.

BY F. J. LAMBKIN, L.R.C.P. & S. IREL.,
COLONEL, R.A.M.C.

SINCE Scarenzio in 1864 first suggested injections of insoluble salts of mercury in the treatment of syphilis certain obstacles have always existed in connexion with it which have undoubtedly militated against its being universally adopted as the best and by far the most convenient way of treating the disease—i.e., pain at the site of injection, painful nodosities, abscesses, and embolism. Although with the progress of knowledge and improved technique the first (as regards metallic mercury) has been reduced to a minimum, and the last three practically caused to disappear, still that they do exist even now, if to a limited extent, there can be no doubt, and this is the chief cause, and indeed in a great many cases the only one why some of the best known syphilologists of the day hesitate in recommending the intramuscular method before all others in the treatment of syphilis. Fournier, in his "Traité de la Syphilis," says: "Lastly, a weighty argument (which I have already developed in the previous remarks) which condemns the method is that by its inconvenience, and especially by the pain it inflicts on patients, it constitutes the best method for preventing patients continuing treatment." In the early days of treatment by this method the main causes of the difficulties alluded to were undoubtedly due, in the first instance, to the ignorance existing at this epoch as regards the necessity for employing antiseptic precautions in carrying out injections, and, secondly, to the unsuitability of the substances which had to be employed as vehicles for the suspension of mercury in the preparation used for injection purposes. The former has, of course, been long since remedied and pain (at any rate, where metallic mercury is concerned) has, as previously stated, been reduced to a minimum, but the other objection has existed more or less up to this day.

The substances which have been employed to hold the mercury in suspension are as follows: glycerine, gum water, olive oil, vaseline, oil of vaseline, and lanolin. Each of these has had its day, one being introduced from time to time as an improvement on the other, and in some respects they may have succeeded in this. Personally, I could never get away from one objection which was common to all—"being insoluble in the organism they entered the circulation as foreign bodies, and as such might possibly have produced nodosities, abscesses, and embolism." This, of course, is a most grave objection and has always been a source of anxiety to me; however, perhaps I ought not to grumble at the substances (lanolin and liquid paraffin) which I have been in the habit of using, as I have personally never seen any of these accidents follow their use; at the same time, there can be little doubt but that some of those grave accidents which have been recorded in connexion with intra-muscular injections of mercury must be put down to the use of these insoluble substances. Besides this main objection some of the above have others which are much against them. Glycerine and gum water are very irritating and painful, whilst olive oil, vaseline, and oil of vaseline are apt to go rancid. Some 18 months ago, in discussing this matter with M. Duret, a well-known French chemist, he suggested *palmitin* as a substitute for any of the above substances as a vehicle. Palmitin is a neutral fat derived from palm oil, having the same chemical composition as the palmitin of the human system. It is an ether glyceride of palmitic acid, it is therefore easily saponified in the fluids of the organism, being converted into a soluble alkaline palmitate and glycerine; thus it enters the circulation not as a foreign body like all substances hitherto used as vehicles. For close on 18 months I have been experimenting with palmitin as a vehicle and have practically adopted it as such at the military hospital, Rochester-row, and with the greatest success.

It is unnecessary for me to point out the preponderance of the advantages which I claim for palmitin over all other known substances as vehicles for the suspension of mercury in any form: (1) it is non-irritant and non-toxic; (2) is not so easily oxidised as the other components of human fat; (3)[1] being already a normal constituent of the human organism, easily saponified and soluble therein, it *does not* enter the circulation as a foreign body; (4) as a vehicle it makes a more homogeneous preparation for injection purposes than any other; and (5) its melting point can be raised and lowered with the greatest facility. I may here state that pure palmitin (which is the only preparation used) is a snowy white flocculent powder and great care is necessary to get it *pure*.

*Analgesia.*—The question of pain, although (so far as metallic mercury is concerned) this has been reduced to a minimum, still there is no doubt that it constitutes a grave objection in the practice of intramuscular injections, especially when calomel has to be employed. With a view, if possible, to abolish pain altogether after injections various substances have from time to time been introduced into the mercurial preparations used for that purpose—i.e., morphine, cocaine, beta-eucaine, &c.; these acting as they do almost at once will assuage any pain which may follow immediately after inoculation, but unfortunately this is not the kind of trouble we have, as a rule, to deal with, as the pain which bothers us is one which comes on two or three days after the injection, when the above local anæsthetics are fruitless. This is a very serious matter in any case, but especially as regards injections of calomel, for it is here that pain is most marked and severe; the consequence is that being hitherto unable to cope with it we have been forced more or less to abandon injections of calomel as anything like a routine method of treating syphilis and have only employed it under exceptional circumstances when pain was of no consideration. Hence was lost to us our keenest weapon for dealing with syphilis. It has always been my endeavour to overcome this drawback.

---

[1] Palmitin. In Stirling's work on "Physiology," p. 29, it is stated that neutral fats of adipose tissues of the body generally consist of a mixture of stearin, palmitin, and olein. Professor W. D. Halliburton in "Essentials of Chemical Physiology," p. 15, states that the fat cells are composed of three different fats called palmitin, stearin, and olein. Charles's "Physiology and Pathology," p. 84, says, "Palmitin is more abundant than stearin in human fats and is the chief component of most animal fats."

Being cognisant of the analgesic powers of creasote it struck me that some combination between it and camphor might possibly meet with success. With this in view I consulted Messrs. Oppenheimer and Co., who informed me that they manufactured *absolute creasote* from the ordinary product which is obtained from beechwood; that there is a very great difference between what is known as guaiacol and this purified creasote, the former constituting only about 20 per cent. of the bulk of beechwood creasote. The purified creasote is an intimate chemical substance consisting roughly of 20 per cent. of guaiacol, 40 per cent. of creasote, and 40 per cent. of monatomic phenyl; it is methyl-catechol and has the empirical formula of $C_6N_4C_{10}H_{16}$; it possesses double the bactericidal effects of pure carbolic acid when tested by the Rideal-Walker process. With this substance, in combination with camphoric acid, I have been experimenting for some little time now, and I may say at once that it has proved a thorough success as an analgesic in not only combating any pain which may immediately follow on an injection, but, what is much more to the point, it apparently succeeds admirably in preventing the occurrence of that after-pain which comes on on the second or third day, especially after calomel.

The abolition of pain after injections, I need not point out, is of the very greatest, if not of vital, importance to us syphilologists, not so much as regards metallic mercury (which never caused much), but in the case of calomel it is of prime interest. Syphilologists the world over have long considered calomel to be the most potent salt of mercury in its power over syphilis in all its stages, its action in this respect being truly remarkable; it is more active and energetic than any known salt of mercury, acting promptly when called upon in acute cases, whilst clearing up old-standing ones which may have resisted and baffled all other treatment. Nevertheless, in spite of all this, calomel has been limited to the treatment of certain cases and the idea of employing it in anything like a systematic manner has been more or less generally abandoned owing to one great drawback—i.e., the intense pain which was liable to follow its use as an injection, this latter usually coming on about the second or third day after inoculation and lasting with more or less severity for three or four days. As regards this pain, Fournier gives statistics collected by himself and Portalier of 473 cases of syphilis treated by injections of calomel; in 36 per cent. pain was slight, in 35 per cent. it was moderate, in 29 per cent. it was acute, and in 3 per cent. it was intolerable. This estimate coincides with my own experience and rather understates the actual amount of pain than otherwise. I have seen so many cases when this has been almost intolerable that as years went on I approached the giving of intramuscular injections by calomel with more or less dread and only employed them when absolutely obliged to from the nature of the case. Since I began to use this substance, absolute creasote and camphor, as an analgesic I have been giving intramuscular injections of calomel with impunity—in fact, during the last few months at the Military Hospital, Rochester-row, I have to a certain extent modified my method of treating syphilis, for, whereas previously patients undergoing injection treatment were put first on metallic mercury, latterly to begin with they are put on weekly injections of calomel; this rapidly causes the disappearance of signs and symptoms and then they are put on intramuscular injections of metallic mercury.

With reference to this latter it may be well to remark here a fact which has been long since noticed by myself as well as by others—i.e., that although the action of calomel on syphilis is so markedly energetic and rapid it is short-lived when compared with that of metallic mercury, hence the necessity of reverting to the latter at an early date. This combination between pure creasote and camphor possesses other advantages besides its analgesic powers—i.e., it is in the first place non-toxic (which cannot be entirely said of other suggested local anæsthetics) and is strongly antiseptic, being twice as much so as pure carbolic acid; besides which, being a viscous body, it lends valuable aid to the palmitin in making up a vehicle which will hold metallic mercury or calomel in suspension—in fact, the combination goes to form a most homogeneous preparation, much better in this respect than any I have ever seen before; its consistence at a melting point of 37° Centigrade (which is what I am at present using) could hardly be improved upon.

The following are the formulæ for the two mercurial creams:—

| | | |
|---|---|---|
| Hydrargyrum ... ... ... ... ... ... ... ... ... ... | | 10 grammes. |
| Equal parts of absolute creasote and camphoric acid ... ... | Creo-Camph ... ... | 20 c.c. |
| Palmitin basis to ... ... ... ... ... ... ... ... ... | | 100 c.c. |

10 m. of above contains one grain of mercury.

| | | |
|---|---|---|
| Calomel ... ... ... ... ... ... ... ... ... ... ... | | 5 grammes. |
| Equal parts of absolute creasote and camphoric acid ... ... | Creo-Camph ... ... | 20 c.c. |
| Palmitin basis to ... ... ... ... ... ... ... ... ... | | 100 c.c. |

10 m. contains $\frac{1}{2}$ grain of calomel.
Melting point 37° Centigrade.

Lieutenant-Colonel W. B. Leishman, R.A.M.C., has examined both of the above creams and found "both sterile and that bacteria would not grow in either."

Creo-Camph (otherwise camphorated creasote) is absolute creasote in combination with camphoric acid and is isolated as such from creasote obtained from beechwood by fractional distillation as methyl-catechol. As before stated, both these preparations form cream of almost perfect consistence and homogeneity. Both the metallic mercury and calomel are triturated with the other constituents by a special process which has been highly developed by Messrs. Oppenheimer. Both are very finely divided. Messrs. Oppenheimer, to prevent any chance of over-dosing, supply these creams in aseptules, each graduated to hold a maximum dose of 15 minims.

To sum up, I would briefly remark that, in my opinion, the substitution of palmitin, which is a soluble constituent of the organism, as a vehicle for the suspension of mercury in place of the insoluble substances hitherto in use, and the success which has followed the adoption of camphorated creasote as an analgesic begin a new era in the treatment of syphilis by intramuscular injections of insoluble salts of mercury; for, in the first instance, one great objection to the treatment—i.e., the introduction of insoluble foreign bodies into the circulation—is done away with, and in the second, pain has been practically abolished even in the case of calomel. It is needless for me to point out what abolition of pain means to most patients, be it ever so slight, but in this case it means much more from the surgeon's point of view, in that it places at his disposal the best and most energetic mode of dealing with syphilis without let or hindrance—i.e., injections of calomel.

# SEPARATION OF THE ACETABULAR EPIPHYSIS OF THE FEMUR: ITS RELATION TO ADOLESCENT COXA VARA.

BY PERCY W. G. SARGENT, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,
ASSISTANT SURGEON TO ST. THOMAS'S HOSPITAL AND THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE; FORMERLY SURGEON TO THE VICTORIA HOSPITAL FOR CHILDREN, CHELSEA;

AND

HAROLD A. KISCH, M.B., B.S. LOND.,
LATE ASSISTANT IN THE X RAY DEPARTMENT; FORMERLY HOUSE SURGEON AND CASUALTY OFFICER, ST. THOMAS'S HOSPITAL.

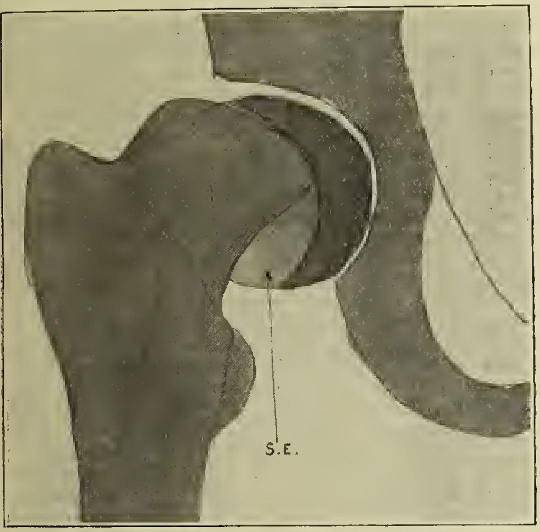
SEPARATION of the acetabular epiphysis of the femur, a condition formerly regarded as extremely rare, is now recognised as of not infrequent occurrence. The separation is usually diagnosed after some comparatively trivial injury to the hip-joint which leads to a skiagraph being taken. The importance of this separation in the etiology of adolescent coxa vara is also appreciated and the view has gradually been adopted that all cases of adolescent coxa vara have had a previous separation of the epiphysis. The following case, which was demonstrated at the clinical evening of the Medical Society of London on Feb. 11th last, is, so far as we have been able to ascertain, unique in that the boy presents a condition of recent separation of the right acetabular epiphysis without any knowledge that there is anything wrong whatsoever with the right hip-joint.

The patient is an epileptic, 19 years of age. On Dec. 23rd, 1906, he had a fit whilst in bed. He did not tumble out of bed but when he woke next morning the left hip was very painful and he was unable to walk properly. He managed, however, to hobble about. The leg continued to be painful, especially at night, and shortly afterwards he went to the National Hospital and was referred by Dr. F. E. Batten to one of us (P. W. G. S.), who sent him on to St. Thomas's Hospital for admission. This is the history he gave, but on careful inquiry we found that he had fallen out of bed in a fit about a year ago and that some time after he had some feeling that the left hip was not quite right and his friends told him that he limped. He has never had any sensation or pain in the right hip. He has had no illness of importance and shows no evidence of rickets or syphilis.

On examination it was found that the left leg was in a position of adduction, external rotation, and flexion, whilst the right leg was apparently normal. There was half an inch difference in the length of the two legs and the great trochanter was raised half an inch above Nélaton's line on the left side. No movement could be obtained at the hip-joint on the left side but on the right the movements were free, except for slight limitation of flexion and abduction.

A skiagram of the left hip (Fig. 1) shows that the acetabular epiphysis is separated and has rotated on two axes: (1) a horizontal antero-posterior axis; and (2) a vertical axis, so that the separated surface looks forward. The femur is displaced upwards and inwards so that the neck is situated in front of the separated surface of the epiphysis and projects above it. The skiagram of the right hip (Fig. 2) shows an extremely interesting condition. On this side the epiphysis is also separated but has only undergone rotation on the antero-posterior horizontal axis and has rotated upwards instead of downwards. There is no rotation on the vertical axis.

FIG. 1.

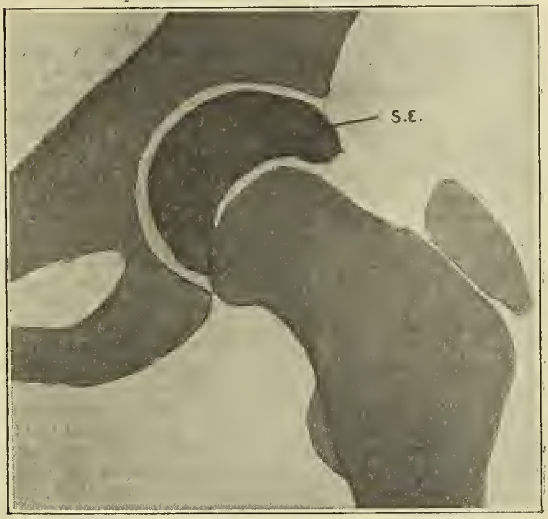


Reproduction of tracing of skiagraph of left hip.

The essential differences between the two sides are these: 1. On the left side the epiphysis has undergone a rotation on its vertical axis. 2. The epiphysis on the right side has rotated upwards on its antero-posterior axis instead of downwards as on the left side, and has undergone no vertical rotation. We believe that the clinical differences on the two sides depend entirely on this vertical rotation and are of opinion that the rotation occurred during the fit, muscular action pressing the neck of the femur against the epiphysis, thus causing rotation of the already separated epiphysis. The upward rotation on the right side is difficult to explain. We must assume that the separation on this side had not existed a sufficient length of time to allow the body weight to cause the downward movement, which apparently has occurred in all other cases. We can find no record or skiagram showing a similar position for the epiphysis.

During the last six years, 1901–06, ten cases with the diagnosis of "separated acetabular epiphysis" have been admitted to St. Thomas's Hospital. They were all males, the average age being 15·9 years, the extreme ages being 14 and 18 years. This patient's age is 19 years, rather older than the average age, but he is very undeveloped and skiagrams of his other epiphyses show that they correspond to those of boys about 14 or 15 years of age. From an examination of the skiagrams and notes of these cases and of 11 cases of coxa vara which present similar appearances we can differentiate two classes of this condition: 1. Where there is only rotation on an horizontal antero-posterior axis. 2. Where there is rotation on both an horizontal and on a vertical axis. In the first class the symptoms are slight and there is only slight impairment of mobility. The treatment consists in wrenching under an anæsthetic and immobilising in the abducted position in a suitable apparatus for two or three months and then the use of patten and crutches for a year. The prognosis is excellent and we have seen skiagrams taken after this treatment has been carried out which show no evidence of abnormality whatever. In the second class the symptoms are more severe, and we may say that the greater the vertical rotation the severer the pain and immobility. This boy on his left side shows very great rotation and his pain has been very severe. The pain is due to pressure on the capsule. The treatment is more difficult. An attempt should be made under an anæsthetic to wrench the bones into place, but if not successful the neck must be screwed or nailed to the epiphysis, the femur first being rotated and abducted until the fractured surfaces are in apposition. The prognosis is worse than in the first class.

FIG. 2.



Reproduction of tracing of skiagraph of right hip.

If a case of separated epiphysis with a history of injury is untreated the deformity known as traumatic coxa vara results. Now the skiagrams of traumatic coxa vara are exactly similar to those of ordinary adolescent coxa vara, and as in the traumatic cases the injuries are always trivial, the view has, as we have already said, gradually developed that these conditions are really one and the same, that is, that all cases of adolescent coxa vara are due to a previous separation of the epiphysis. All will agree that this case would certainly have developed coxa vara on the right, apparently sound, side, and it is consequently the missing link of the chain of evidence connecting these two classes of coxa vara, and we may assume that other cases of coxa vara have presented this condition at some time previous to the development of their deformity.

The average age of 11 male cases of coxa vara admitted at St. Thomas's Hospital from 1901–06 was 16 years, 1⅕th months older than the corresponding cases of separated epiphysis. There were three female cases and their average age was 13·5 years.

The clinical history of cases of coxa vara can be epitomised as follows: (1) slight limping and aching; (2) increased pain, sometimes preceded by slight trauma; and (3) deformity. These stages correspond to the pathological ones of (1) separation of epiphysis without vertical rotation; (2) rotation on vertical axis; and (3) coxa vara. Pain, more or less severe, commences as soon as rotation occurs. The severity of the pain depends on the rapidity and extent of the rotation. In the case we have just recorded the rotation was very rapid and extensive and the pain correspondingly great. If rotation is very gradual the pain may be very slight and in some cases absent altogether. This explains those cases of adolescent coxa vara where one finds well-marked deformity with no history of pain. The extent of the rotation on the vertical diameter is estimated by the extent of the curve of the lower margin of the faint shadow of the separated surface of the epiphysis as shown in the diagram (Fig. 1, S E.). The greater the rotation the nearer the arc of a circle this curve becomes, whilst in lesser degrees the curve is elliptical. The amount of antero-posterior curve, or rather deformity, in the neck of the femur depends on the amount of rotation of the separated epiphysis on its vertical axis.

The pathological change, which occurs at the epiphyseal line, is at present quite unknown. The skiagrams show no bony change. The disease apparently only occurs in the poorer classes, and does not appear to be due to any particular occupation. The reason why this condition is only demonstrable at the acetabular epiphysis of the femur is probably explained by the architecture of the joint. The weight of the body is transmitted through the pelvis, and the closely fitting bony cup of the acetabulum causes that pressure to act directly on the epiphysis. No other joint has this conformation and a corresponding pressure to bear.

In conclusion, we would urge the need of immediately skiagraphing all cases of slight limp or aching about the hip-joint in patients between about 12 and 18 years of age in order to detect the condition of separation in its earliest stage, and before the case passes into our second class.

Our best thanks are due to Dr. A. H. Greg of the x ray department of St. Thomas's Hospital for his assistance and for the use of his collection of skiagrams.

# THE OPSONIC INDEX AND AGGLUTINATION IN CEREBRO-SPINAL MENINGITIS.

By ALICE TAYLOR, L.R.C.P. IREL.

THE value of the opsonic index in the diagnosis and treatment of various forms of infections having been demonstrated by Sir A. E. Wright, it was thought probable that it might also prove of service in cases of cerebro-spinal meningitis. The opportunity for such investigation presented itself at the Children's Hospital, Great Ormond-street, London, for in the early months of this year eight cases of cerebro-spinal meningitis were admitted to the hospital. The following table gives shortly the important features of these cases:—

*Table of Eight Cases of Cerebro-spinal meningitis.*

| Case. | Age. | Rash. | Lumbar puncture. | Organism isolated in culture. | Result. |
|---|---|---|---|---|---|
| 1 | 13 weeks. | 3 crops: (1) petechial; (2) erythematous; (3) elevated spots and face scars. | * | Gram-negative diplococcus. | Death. |
| 2 | 7 months. | Purpuric. | Turbid. | Ditto. | ,, |
| 3 | 3 months. | Vesicular. | No fluid obtained * | No growth. | ,, |
| 4 | 4 years. | Erythema. | Cloudy fluid. | ? Few intracellular cocci. | Recovery. |
| 5 | 2 years, 5 months. | — | Cloudy fluid under pressure. | No growth, very few intracellular diplococci. | ,, |
| 6 | 2 years, 8 months. | — | Cloudy fluid. | Gram-negative diplococcus. | ,, |
| 7 | 2 years, 5 months. | — | ,, | 1 colony; no further growth. | — |
| 8 | 1 year, 5 months. | Before admission. | Clear fluid. | Gram-negative diplococcus. | Convalescence. |

* At the necropsy hydrocephalus, meningitis of vertex, little of base and sticky exudate on the posterior surface of the cord.

It will be seen that all these cases were proved, either by lumbar puncture or post mortem, to be cases of cerebro-spinal meningitis.

*Method of investigation.*—The method of investigating the opsonic index was that described by Sir A. E. Wright. The emulsion throughout was made from a culture on blood serum of meningococci isolated from the cerebro-spinal fluid of one or other of the patients. These meningococci were all Gram-negative. The emulsion was used alive. The stain was a strong solution of toluidin blue made up with sodium bicarbonate; this gave satisfactory results. The leucocytes were washed once in a solution of sodium citrate in sodium chloride and after that twice again in sodium chloride 0·9 per cent. The emulsion was also made up with 0·9 per cent. sodium chloride.[1] Considerable difficulty was, however, encountered in dealing with the organisms, for it was found that the older cultures underwent rapid degeneration during incubation. In the later cases in which a seven to ten hours' culture was used this degeneration did not occur and in these cases a very high index has been noted. Degeneration was shown by the swelling and irregular staining of the coccus and subsequently by its disintegration into a granular detritus.

The difficulty of working with an organism which so rapidly undergoes disintegration has also been noted by Davis in America and led to the (provisional) conclusion that the opsonic index was not delicate enough to be of any service in diagnosis or treatment.[2] In the earlier cases, where older cultures were used, the serum of the controls showed a high opsonic power; in the later cases, when a young culture was employed, the opsonic power shown by the controls was extremely small; whereas the serum from cases of meningitis showed enormously increased opsonic power, and the average number of organisms per leucocyte differed as much as 18 to 1·8, the incubation period being eight minutes in this case. The normal opsonic power appears unable to act until, according to Flexner,[3] autolytic enzymes are being set free. The thickness of the emulsion is also an important factor to regulate, for if the emulsion be too thick the number of organisms in the leucocytes with the patient's serum may become uncountable.

Whilst observing the opsonic index it was noted in the later cases that agglutination was a marked feature. This has been observed after an incubation of ten minutes in a dilution of 1 in 3. The controls throughout the whole series never showed any agglutination, nor was it present in slides without serum, where the emulsion was incubated with 1 part each of washed leucocytes and saline solution. It was also tested against tuberculous meningitis and typhoid fever; in neither case was agglutination present. In testing for agglutination alone a thick emulsion is to be preferred. The clumps are then very much larger and are spread along the edges of the smear in the same manner as the leucocytes, and the contrast between the control slide, thickly strewn with pairs and some tetrads of meningococci, and the patient's slide, almost or quite free from loose cocci but with clumps along the edges, is a striking feature.

As a result of these observations the following questions suggest themselves: 1. Is this high index pathognomonic of the disease? 2. Is it present in all forms of meningococcal meningitis? 3. Will it be possible, by the difference in the opsonic index or agglutination associated with it, to distinguish between the various forms of meningococci which have been shown by observers to give slight cultural and staining differences? Some attempt will be made to answer these questions in part, but a complete answer can only be obtained by further and more extensive investigations than it has been possible at present to carry out.

The following charts show the results obtained. Charts 6 and 7, and Chart 4 above Index 2, are marked $\frac{1}{10}$ of the scale of the early charts. In Chart 4 the opsonic index against the tubercle bacillus is also recorded with dotted lines. The presence of agglutination in the opsonic index slide is designated by +.

CASE 1.—The patient was a female, aged 13 weeks, who was taken ill seven days previously. The opsonic index was in the early stages low, becoming higher towards the end of the disease. In this case a vaccine was given which may have had some influence on the index.

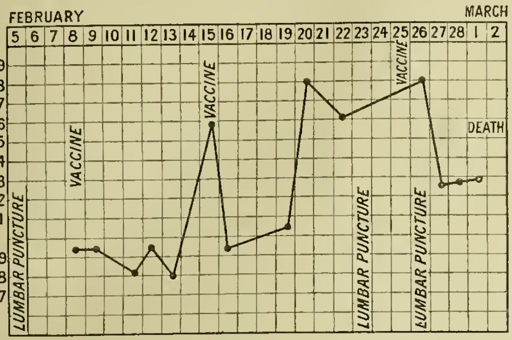
---

[1] This strength of sodium chloride solution has been used throughout these experiments, for it was found on using emulsions made up with 0·9 per cent. sodium chloride and 1·5 per cent. sodium chloride concurrently, almost exactly the same opsonic index was obtained.

[2] David J. Davis: Studies in Meningococcal Infection, Journal of Infectious Diseases, vol. ii., 1905.

[3] Contributions to the Biology of Diplococcus Intracellularis, by Dr. Simon Flexner, Journal of Experimental Medicine, March 14th, 1907.

CHART 1.

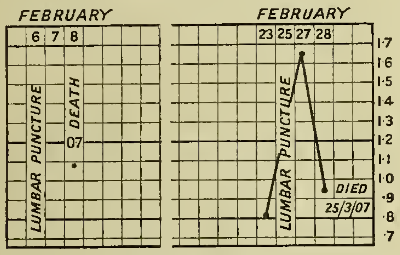


Case 1. Admitted on the seventh day of illness.

CASE 2.—The patient, a male, aged seven months, was taken ill five days previously and died on the eighth day of his illness. The index taken on the day of death was normal.

CASE 3.—The patient, a male, aged three months, was admitted in the third week of his illness. The opsonic index was only taken three times; on the second occasion it was high for the method then used. On examining a slide kept a tendency to form groups can be distinguished.

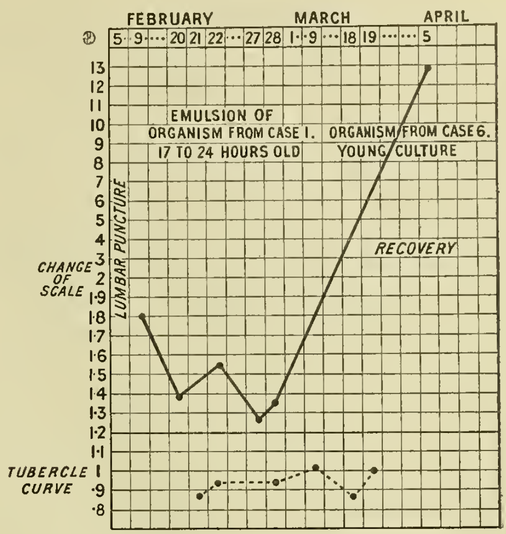
CHARTS 2 AND 3.



Cases 2 and 3. Admitted respectively on the fifth day and third week of illness.

CASE 4.—The patient, a female, aged four years, was admitted on the third day of her illness. The temperature remained continuously high for four weeks. The opsonic index to meningococcus was high on the eighth day of the illness. The opsonic index in this case having been taken by the two modifications used in these observations shows typically the difference in the index resulting from using a young culture. The index on this chart, after reaching 2, is marked $\frac{1}{10}$ of the size. It also shows the tubercle index remaining steady within normal variations.

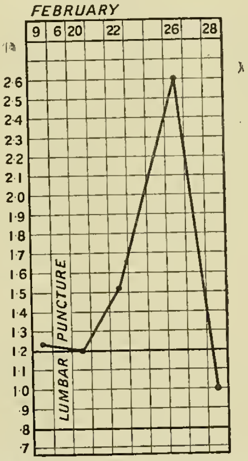
CHART 4.



Case 4. Admitted on the third day of illness.

CASE 5.—The patient, a female, aged two years and five months, was taken ill five days previously. The temperature remained high for six weeks. The opsonic index was at first 1·2 and towards the end of the illness rose considerably.

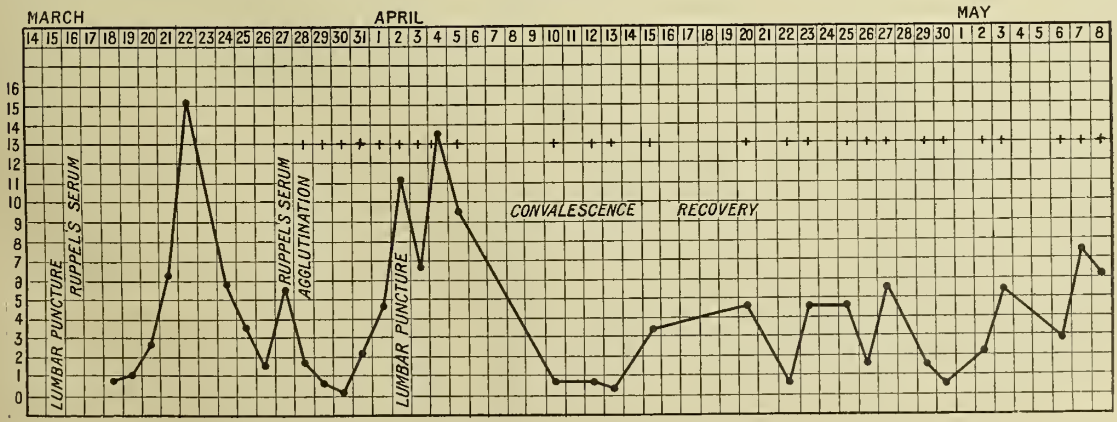
CHART 5.



Case 5. Admitted on the fifth day of illness.

CASE 6.—The patient was a female, aged two years and

CHART 6.



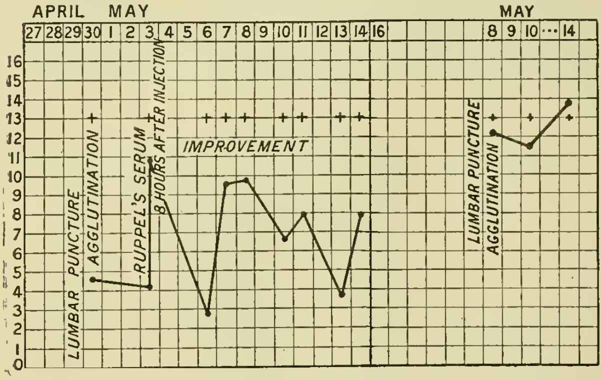
Case 6. Admitted on the fourteenth day of illness.

eight months. The opsonic index was at first low; it rose rapidly and remained high during the whole course of the disease, showing considerable fluctuations. Agglutination was noted first in this case on the twenty-eighth day of the illness and has since been continuously present. Convalescence set in in the sixth week of the illness. This patient was treated with two injections of Ruppel's serum. A considerable rise in the index followed each injection and agglutination was first noted after the second injection; there was at the same time also marked improvement in the general symptoms. On April 9th, the fortieth day of illness, the patient sat up and a week later appeared perfectly well. There was still, three weeks later, marked agglutination and the opsonic index fluctuated somewhat above the normal.

CASE 7.—The patient, a female, aged two years and five months, was admitted in the sixth week of illness. The rash appeared five weeks before and there was head retraction three weeks before; she was very wasted. The opsonic index, taken after admission, was above normal and a marked tendency to agglutination was present. This case had also received one injection of Ruppel's serum; eight hours afterwards the index was two and a half times higher, the temperature became normal, and the general symptoms markedly improved.

CASE 8.—The patient, a female, aged one year and five months, was admitted in the fifth week of her illness. There were rash and head retraction three weeks before. The opsonic index was 12·2 and agglutination was present.

CHARTS 7 AND 8.



Cases 7 and 8. Admitted on the sixth and fifth weeks of illness respectively.

In Cases 1 to 5 inclusive the opsonic index was taken with cultures from 17 to 24 hours' old, and an incubation period from 15 to 20 minutes was used. It was necessary to count the degenerate forms and granules within the leucocytes, a matter of some difficulty, and one which could not be considered altogether satisfactory. In Cases 6, 7, and 8 an emulsion[4] from a young culture from seven to 10 hours old was used. The resulting smears became as easy to count as those of other organisms. Chart 4 shows typically the difference obtained by working with a young culture, for whereas with old cultures an index of from 1·3 to 1·8 was obtained, with a young culture an index of 13 was obtained.

Agglutination associated with the opsonic index was first noted with Case 6, on the twenty-eighth day of the illness, and when the accompanying opsonic index was low. It has been similarly noted by Houston and Rankin in the Belfast epidemic.[5] It was observed first after the second injection of Ruppel's antitoxin serum obtained from a horse immunised by cultures of meningococci rendered pathogenic to mice and guinea-pigs by culture on special media. Agglutination was also observed on taking the opsonic index after admission to hospital in Case 7 in the sixth week of the illness and in Case 8 in the fifth week of the illness.

In the paper already referred to by Davis he states that on testing the agglutination (by the ordinary Widal method) normal serum never showed any agglutination even undiluted. Gordon[6] mentions two difficulties against employing agglutination diagnostically in cerebro-spinal meningitis by Widal's method: (*a*) the impossibility with the meningococcus to make emulsions absolutely free from all aggregations; and (*b*) the delay that occurs before agglutination takes place. By the method in conjunction with the opsonic index these difficulties appear to be overcome: (*a*) aggregations of cocci have sometimes been noticed in the preparatory smear to test the thickness of the emulsion but this has ceased to be heeded, since in every case after incubation in the liquid medium of serum and washed leucocytes the aggregations spontaneously disintegrate and no aggregations are ever found in the slides of the controls or the patients unless agglutination is present; and (*b*) in these observations ten minutes have been the time limit. The dilution of 1 in 3 might be suggested as too low; it has, however, already stood the test of many observations. Dilutions of 1 in 12 and 1 in 36 have so far given no result in ten minutes.

A suggestion has been made that the clumps might be formed in drawing out the smear: (1) they would not in that case be invariably present with an altered opsonic index; (2) they can be observed if one part each of agglutinating serum, an emulsion of the strain of meningococcus causing it, and of saline solution are incubated ten minutes, dropped on to a slide and allowed to dry without being drawn out; and (3) on testing the result of using an obviously over-thick emulsion it was found the micrococci tended to be drawn out in lines round the cells and the edges of the smear. From the limited observations that follow it would appear probable that this agglutination is specific to the strain of meningococcus eliciting it and gains corroboration by the accompanying opsonic index.

Next the agglutination reaction of the serum of Cases 6 and 7 was tested—first, against the organisms isolated from the cerebro-spinal fluid of Cases 2, 6, and 8, and in every case they respectively gave a high opsonic index and interagglutination. Secondly, against two strains of organisms derived from Belfast—Belfast B. from cerebro-spinal fluid; and Belfast M. from blood. In these two striking differences appear: 1. The serum of Cases 6 and 7 against either Belfast organism gives a normal index and no agglutination. 2. With serum of normal blood against Belfast B. a high opsonic power against a young culture is shown, and the average number of organisms per leucocyte in two of the observations, instead of being limited to three, were 18 and 44 respectively, whereas the serum of normal blood against young cultures of Belfast M. showed a very low opsonic power, as noted against the London organisms. And in this case this low opsonic power has not been excited to action by the serum of Cases 6 and 7.[7]

*Conclusions.*—From the above observations it is now possible in part to answer the questions set forth at the beginning of this paper.

1. Is a high opsonic index pathognomonic of the disease? It appears possible from these eight cases to obtain a definite opsonic index in cerebro-spinal meningitis, either working with an old or a young culture. A high index has been shown to be present in all the cases examined. This index may under certain conditions attain a very high altitude. In Case 4 it is seen that the tubercle index at the same time runs its usual course. Two or three cases of tuberculous meningitis tested during these observations gave within two or three days a tuberculous opsonic index above the normal and did not give a high index to this meningococcus. This high index appears to be due in these cases to the characteristic feature that normal serum has scarcely any opsonic power against a young culture of this organism. It is therefore probable that a high opsonic index is pathognomonic of the disease.

2. Is a high opsonic index diagnostic in all forms of meningococcal meningitis? The results obtained on testing the serum of the present series of cases against the Belfast organisms[8] show that a high index is not always obtained with different strains of growth and that a negative result may occur. So that although a high index indicates the presence of the disease a normal index does not negative its presence.

3. Will it be possible by the difference in the opsonic index or agglutination associated with it to distinguish

---

[4] The emulsion must not be allowed to stand.

[5] THE LANCET, May 4th, 1907, p. 1213.

[6] Report to the Local Government Board on the Micrococcus of E.C.M., Dr. M. H. Gordon.

[7] Sera since received from Belfast from three cases of chronic cerebro-spinal meningitis severally give a high index and agglutination against Belfast M. Against Belfast B. and the organism from Case 6 these sera give no agglutination and a normal index.

[8] And the Belfast serum against the Belfast and London organisms.

between the various forms of meningococci which have been shown by observers to give slight cultural and staining differences? Among the organisms tested in these observations it appears possible to differentiate three strains or variations of organisms—Belfast B. from Belfast M. and the present London organisms by the high opsonic power against young cultures as constantly demonstrated with normal serum; Belfast M. from Belfast B. by its very low opsonic power against young cultures as constantly demonstrated with normal serum; and Belfast M. from the present strain of London organisms by the normal index and absence of agglutination with the serum of Cases 6 and 7, the same serum giving a high index and marked agglutination reaction against the London organisms. It appears probable in order to obtain the fullest effects from a vaccine or serum treatment that the strain of organism employed in its preparation is of great importance.

I am greatly indebted to Dr. A. E. Garrod, Dr. A. F. Voelcker, Dr. W. S. Colman, and Dr. F. E. Batten for allowing me access to these cases and kindly permitting me to make use of their notes and treatment. Also to Dr. J. G. Forbes for supplying me with subcultures of the meningococci isolated by him in these cases. My thanks are also due to Dr. T. Houston for allowing me to publish results with organisms and serum from Belfast.

Queen-street, W.C.

# AN INVESTIGATION OF SOME OF THE MORE UNUSUAL FORMS OF ACUTE CONJUNCTIVITIS.

BY A. C. HUDSON, M.D. CANTAB., F.R.C.S. ENG.,
HOUSE SURGEON AT THE ROYAL LONDON OPHTHALMIC HOSPITAL;
AND
P. N. PANTON, M.B., B.C. CANTAB., M.R.C.S. ENG.,
ASSISTANT DIRECTOR OF THE LOUIS JENNER CLINICAL LABORATORY,
ST. THOMAS'S HOSPITAL.

THE bacteriological identification of the Koch-Weeks bacillus in 1885 and of the Morax-Axenfeld diplo-bacillus in 1896 as specific causes of conjunctivitis form important landmarks in the history of the study of this disease. The resulting types of inflammation are in most cases associated with such characteristic clinical features as to present a more or less diagnostic picture. In cases of doubt the diagnosis may be confirmed by an examination of films prepared from the discharge, the organisms having distinct morphological appearances and their cultural characteristics being rarely called for in making a diagnosis. Recently accounts of these organisms have been published by Inglis Pollock[1] and by Usher and Fraser,[2] whose papers dealing with the bacteriology of conjunctivitis are largely concerned with Koch-Weeks and diplo-bacillary infections and afford strong evidence that these organisms, together with the gonococcus, are responsible for the causation of the great majority of the more acute cases of the disease met with in this country. In any large clinic, however, a considerable percentage of cases of acute conjunctivitis is met with in which the clinical features would appear to present no such generally recognised relation to their etiology. The aim of the present inquiry has been the investigation of cases of this nature met with by us during a period of 15 months, including several cases of gonorrhœal conjunctivitis, while cases of Koch-Weeks and diplo-bacillus conjunctivitis have been entirely, or almost entirely, omitted from this account, the cases encountered having been diagnosed either from clinical features or from film preparations, and no special media for the demonstration of these organisms having been employed.

## TECHNIQUE.

In every instance two or more film preparations were made from the discharge and a culture was taken on to some form of solid medium, in most instances blood serum. One of the film preparations was stained by Gram's method and a second film was treated by Leishman's stain, whenever a cytological examination of the exudate was considered necessary. With the exception of some cases of gonorrhœal infection, in which an attempt at cultivation failed, no diagnosis was made from film preparations alone. In all, 105 cases were thus examined, but a certain small proportion of these include cases in which either the Koch-Weeks or Morax-Axenfeld bacillus was, in all probability, the main factor at work and are considered here only to complete the account of the other organisms present in addition. In a few cases films and cultures were taken also from other lesions in the body when these were thought to have any bearing upon the condition of the eyes. The cases were derived mainly from the Royal London Ophthalmic Hospital; a considerably smaller number from the ophthalmic department of St. Thomas's Hospital are also included. The organisms met with were in order of frequency a diphtheroid bacillus (60 times), a white staphylococcus (28 times), the gonococcus (27 times), the staphylococcus aureus (24 times), a streptococcus (10 times), an intermediate staphylococcus (3 times), the diphtheria bacillus (twice), and an unclassified coccus (once).

The cases are grouped under the heading of the various organisms present, but since a mixed infection was frequent some overlapping is unavoidable.

## GROUP 1.—STREPTOCOCCI.

There were altogether ten cases of streptococcal infection, and in each case an attempt was made to procure the full cultural characteristics of the organism; in two instances, however, owing to the additional presence of a diphtheroid bacillus the streptococcus could not be isolated. In one other case the diphtheria bacillus, and in another both albus and aureus were present in addition; the former case is considered under Group 7. In the two cases in which the streptococcus was not isolated one was a severe attack with membrane formation, the other of moderate severity only and unaccompanied by actual membrane. Five of the streptococci isolated were classed on the evidence of Gordon's tests as the streptococcus pyogenes according to the classification of Andrewes and Horder.[3] In one of these five cases, a child, aged one week, a similar organism was present also in a sloughing hæmatoma of the face, and the fact that the mother died three days after delivery, presumably from some septic condition, points to the maternal passage as the probable source of infection. One of the pyogenes cases was accompanied by the diphtheria bacillus; there was well-marked membrane formation in this case and corneal infiltration. In the remaining three cases membrane formation was present in each instance and in two cases the eye was destroyed. A different variety of streptococcus was isolated in two instances and should probably be classed with the streptococcus fæcalis group. The cultural characters were almost identical in the two cases. The coccus was Gram-positive and occurred in chains of from 10 to 20. On agar slant typical streptococcal colonies were found. On jelly slant, at 22° C., no liquefaction. Litmus milk: acid, no clot. Gordon's media affected were: maltose, salicin, lactose, xylose, raffinose, arabinose, mannite, dextrose, and glycerine. Unaffected: erythrite, sorbit, and cane sugar. These media were identical in the two cases with the exception that litmus glycerine was acidified by the one organism and not by the other. In neutral red broth, anaerobically, a green fluorescence was produced by one organism only.

The occurrence of this same organism, of unusual characters, is of the more interest since the patients were brothers who attended the hospital at about the same time, and there is little doubt that they infected each other. Of these brothers one lost his eye; the other had only a mild attack of conjunctivitis which was associated with the onset of measles and which cleared up rapidly, affording a good example of the difference of personal resistance to the same organism. In another case, occurring in a small child with severe conjunctivitis accompanied by membrane formation, a streptococcus of unusual cultural characteristics was obtained. The organism was Gram-positive and occurred in very long chains. It formed very delicate colonies on agar and grew on jelly without liquefying it. It was transferred into a large number of Gordon's media and, with the exception of sorbit, acidified all of them. It produced green fluorescence in neutral red broth anaerobically. The organism was inoculated into the peritoneal cavity of a mouse and caused death in 12 hours; the streptococcus was recovered from the spleen, blood, and peritoneum.

---

[1] Inglis Pollock: The Bacteriology of Conjunctivis, Transactions of the Ophthalmological Society of the United Kingdom, vol. xxv., 1905.

[2] C. H. Usher and Henry Fraser: An Analysis of a Series of Conjunctivitis Cases seen in Aberdeen.

[3] F. W. Andrewes and J. T Horder: THE LANCET, Sept. 15th, 1906 p. 708.

The nine cases in which streptococci were considered the causative factor include some of the most severe cases met with in the series. In one case, however, in which the conjunctival inflammation preceded the onset of measles the symptoms were of a very mild character. The main clinical features are tabulated below :—

| | | | | |
|---|---|---|---|---|
| Unilateral | | 3 | Ulceration of lid margins | 2 |
| Bilateral | | 6 | Impetigo | 2 |
| Severe | | 5 | Nasal discharge | 1 |
| Moderate | | 3 | Ear discharge | 1 |
| Mild | | 1 | Lymphatic glands enlarged | 2 |
| Discharge | Thin | 7 | Antecedent measles | 3 |
| | Purulent | 2 | Highest temperature recorded 101° F. | |
| Membrane on conjunctiva | | 5 | | |
| Pellicle[4] on conjunctiva | | 1 | | |

The following are clinical notes of illustrative cases :—

CASE 1.—A female, aged one year and two months. O.P., R.L.O.H., April 8th, 1907 (Mr. J. H. Parsons). Left eye inflamed four days, left lids red, but not much swollen. Palpebral and bulbar conjunctiva injected and slightly swollen. Very superficial membrane on palpebral conjunctiva of both lids, which could not be stripped off without some hæmorrhage. Thin muco-purulent discharge. Cornea normal. Left pre-auricular gland palpable. Right eye normal. Chronic discharge from left ear. At the last attendance, five days later, the condition had considerably improved.

CASE 2.—A male, aged one year and three months. I.P., R.L.O.H., Jan. 1st, 1907 (Mr. J. H. Fisher). Right eye affected three days. Right lids œdematous, not brawny. Thick yellowish white membrane on conjunctival surface of both lids, which could not be removed without much bleeding. Some muco-purulent discharge. Right cornea very hazy. Left eye normal except for small patch of membrane on conjunctiva of left lower lid. No enlargement of lymphatic glands. Red spot on right cheek and forefinger. General condition fairly good. The disease rapidly progressed to a disastrous issue. Four days after admission the entire right cornea had become infiltrated and staphylomatous, the membrane on the conjunctiva at this time stripping fairly easily and leaving bleeding spots. Left eye normal. Right eye subsequently excised. Child left hospital one month after admission. Right socket was then clean except for small slough at the bottom, and urine contained no albumin.

CASE 3.—A male, aged two years and three months. I.P., R.L.O.H., Jan. 10th, 1906 (Mr. J. B. Lawford). Whooping-cough eight months ago; delicate ever since. Bronchitis 14 days ago. Right lids swollen considerably. Palpebral and bulbar conjunctiva much swollen. Muco-purulent discharge. Purulent mucocele. Deep haze of right cornea. Left eye normal. No enlargement of lymphatic glands. Affection of right cornea progressed rapidly, so that three weeks after admission the entire central portion had become yellow and staphylomatous. A fortnight later the eye was excised, the conjunctival inflammation having then almost subsided and there being no regurgitation from the lacrimal sac. Convalescence uneventful.

CASE 4.—A male, aged four years. O.P., R.L.O.H., Feb. 2nd, 1906 (Mr. Fisher). Brother of preceding patient. Very slight swelling of lids of both eyes with general conjunctival injection and a little watery discharge. Three days later it was reported that the patient had developed measles, but that the eyes were much better.

### GROUP 2.—STAPHYLOCOCCUS AUREUS.

This organism was present in 24 cases, in 19 of which it was either the only organism present or was associated with either a white staphylococcus or a diphtheroid bacillus; in these cases it is classed as the causative organism of the disease. In the remaining five cases it was associated with the gonococcus twice, with the Klebs-Löffler bacillus, the Koch-Weeks bacillus, and a streptococcus, once each; in these cases it is considered as a secondary, though not necessarily a negligible, infection.

In view of the fact that the various staphylococci and other pathogenic organisms have on occasion been obtained from the normal conjunctiva, and that many of the attempts to produce by them experimental conjunctivitis in man and animals have failed, the majority of investigators into the bacteriology of conjunctivitis appear to regard the possibility of these organisms causing the disease with considerable reserve. Inglis Pollock[5] says, in agreement with Morax and Petit: "The pneumococcus and the Klebs-Löffler bacillus have occasionally, while the streptococcus and staphylococcus have as a rule, been found on the normal conjunctiva. Consequently the mere finding of these four organisms does not suffice for the diagnosis that a given case is due to them. ...... It is necessary to take into account the number of the microbes, their arrangements ...... etc." Similar views with regard to staphylococcal infection are expressed by Axenfeld[6] and other writers[7]; yet the various staphylococci and even streptococci are found in the normal skin, and no one doubts that they may on occasion give rise to a subcutaneous abscess; nor can a frequent failure to produce conjunctivitis be accepted as convincing, and, indeed, successful results have been recorded. In these cases no attempt has been made to estimate the number of microbes present, but their arrangement in the films was in each case noted. If the nature of the cells in the discharge plainly indicated an acute inflammation, if a culture taken from the fluid yielded an organism of known pathogenicity, and if similar organisms were present in the films (and preferably within the cells), that organism was considered the causative agent.

In 19 of the cases in this group, therefore, the causative agent was considered to be the staphylococcus aureus In three of these cases cultures were also taken from other lesions present in the body. In one case a pure culture of the staphylococcus aureus was obtained from the pus on incising an abscess of the neck; in this case, a small child, the conjunctival condition had progressed to complete loss of the eyes and the child subsequently died from septic absorption. In one case a nasal discharge was present and from this a white staphylococcus and the micrococcus catarrhalis were obtained, but no aureus. In the third case an impetiginous condition of the scalp was present and aureus was obtained from one of the lesions; it is possible that the conjunctiva was secondarily infected from the head.

In the great majority of all the cases films from the discharge showed numerous microphages, many of which were greatly degenerated, the organisms appearing for the most part as Gram-positive diplococci. a certain number of these being within the phagocytes. It was exceptional to see a staphylococcal arrangement in the films and, if no cultural tests are made, both these and other organisms are liable to be mistaken for the pneumococcus. In every instance large, bright yellow colonies of a Gram-positive staphylococcus were obtained upon agar and in nearly all cases these were subcultured on to gelatin and produced liquefaction in from 24 to 48 hours. This early liquefaction of gelatin is considered by Axenfeld[8] and others to be a good test of the relative pathogenicity of the various staphylococci.

In a few cases cultures were taken from the eye on two separate occasions, in each instance with identical results. As a control three strains, chosen indiscriminately, were passed through all the ordinary media and in addition through all Gordon's carbohydrate tests. The results were found to differ in no way from those obtained with various strains of aureus derived from other parts of the body in disease. One of these strains was injected into the vein of a rabbit; the animal died in ten hours; no lesions were found post mortem and a pure culture of a *white* staphylococcus was obtained from its spleen. A further inoculation of the original culture was made into the hind leg of a guinea-pig and resulted in a local abscess; the animal was killed one week later and cultures were taken from the spleen and the abscess; in both cases a *white* staphylococcus only was obtained. This coccus on being submitted to Gordon's tests gave results absolutely identical with those of the original yellow coccus. The result is of interest as indicating the possibility of an aureus losing its power of pigment production and appearing as an albus, though still retaining its other cultural characteristics.

The 19 cases in which the staphylococcus aureus was believed to be the causative organism were on the whole of severe type; only four could be designated as mild. The leading features of the 18 cases of which clinical notes are available are presented in the following table :—

| | | | | |
|---|---|---|---|---|
| Unilateral | | 7 | Ulceration of lid margins | 3 |
| Bilateral | | 11 | Impetigo | 5 |
| Severe | | 8 | Nasal discharge | 2 |
| Moderate | | 6 | Ear discharge | 2 |
| Mild | | 4 | Lymphatic glands enlarged | 8 |
| Discharge | Thin | 16 | Lymphangitis of face | 1 |
| | Purulent | 2 | Antecedent measles | 3 |
| Membrane on conjunctiva | | 5 | Highest temperature noted 100° F. | |
| Pellicle on conjunctiva | | 1 | | |

The following are brief notes of illustrative cases :—

CASE 5.—A female, aged 27 years. O.P., R.L.O.H., Oct. 8th, 1906 (Mr. A. Lawson). Both eyes inflamed 24 hours. Slight injection and very slight swelling of conjunctiva of both eyes. A very little watery discharge. Corneæ normal. Both preauricular glands just palpable but not tender. Four days later the patient was quite well, except for slight stickiness of lids after sleep.

---

[4] By the term "pellicle," used in this and subsequent tables, it is intended to describe a coherent sheet of fibrinous material which could be stripped off, leaving an injected but not bleeding conjunctival surface, in contradistinction to true membrane which could not be separated without hæmorrhage.

[5] Loc. cit.

[6] Theodor Axenfeld: Die Bakteriologie in der Augenheilkunde, 1907.

[7] J. H. Parsons: The Pathology of the Eye, vol. i., part 1.

[8] Loc. cit.

CASE 6.—A male, aged 16 years. I.P., R.L.O.H., April 3rd, 1906 (Mr. W. T. H. Spicer). Right eye watery and painful three days; running from nose and sore throat for same period. Right lids very slightly swollen with congestive discolouration. Conjunctiva of both lids covered by a yellowish-grey pellicle which could be fairly easily detached, leaving an injected, but not swollen, conjunctival surface. Bulbar conjunctiva considerably injected but not swollen; pellicle did not extend to it. Watery discharge. Cornea not affected. Infection of skin of both lid margins with linear distribution on upper, in circular patches on lower, lid; large angular area at outer canthus. Infective process had proceeded to varying extent in different areas, so that it could be seen to be initiated by a subcuticular infiltration covered by a shiny cuticle which later lost its lustre, giving rise eventually to an opaque, greyish membrane. Right preauricular gland enlarged, hard, and tender; cervical glands on both sides of neck palpable. Red, slightly papular, eruption on right side of face. Left conjunctiva and lids normal. No membrane on fauces. Two days later left conjunctiva became slightly injected and eye watery. A week later, when the patient was discharged from hospital, there remained only slight swelling of right lids.

CASE 7.—A female, aged seven years. I.P., S.T.H., July 20th, 1906 (Mr. Lawford). Left eye affected five days. History of exposure to diphtheritic infection. Child pale and fretful. Left eye: lids swollen, closed, and somewhat brawny. Palpebral conjunctiva covered by a thin, yellowish pellicle which extended to both fornices and slightly on to the bulbar conjunctiva, and on separation left a bleeding surface; slight chemosis and congestion of bulbar conjunctiva. Muco-purulent discharge. Cornea bright. Left preauricular gland enlarged. Right eye normal. 6000 units of diphtheritic antitoxin were given shortly after admission to hospital. Highest temperature during stay in hospital 100° F. Patient was discharged in 11 days, when the swelling and membrane had nearly disappeared.

CASE 8.—A female, aged seven years. I.P., R.L.O.H., Sept. 29th, 1906 (Mr. R. M. Gunn). Yellow sty on left lower lid noticed four days ago. Left eye closed, cheek swollen, and preauricular gland enlarged two days. Discharge from nose noticed 24 hours. Left eye: greyish yellow absolutely adherent membrane involved almost entire margin of upper and outer half of margin of lower lid; great induration of lids; palpebral conjunctiva not seen, bulbar conjunctiva hyperæmic. Some thin discharge. Right eye: similar membrane on outer part of upper lid margin; did not extend on to conjunctiva, which was normal. Corneæ normal. Lymphangitis of left side of face and tender swelling of right and left preauricular and cervical glands. Membrane inside left nostril. Fauces normal. Knee-jerks present. Three days later small circular patch of membrane in skin of face just below right lower lid. A week after admission the condition had greatly improved, but there was a little thin greyish membrane in the conjunctiva of the left lower lid continuous with that on the cutaneous surface; conjunctiva elsewhere simply thickened and injected; bead of yellow discharge at inner canthus. A week later patient was discharged cured.

In the following case the Koch-Weeks bacillus was found associated with staphylococcus aureus.

CASE 9.—A female, aged 21 years. O.P., R.L.O.H., Feb. 14th, 1906 (Mr. E. Treacher Collins). Left eye excised three years ago. Sore throat and swelling of glands in left side of neck four days. Swelling of lids and discharge from left conjunctiva three days. The conjunctiva of the left socket presented a shaggy yellow appearance owing to a superficial necrosis of the conjunctiva of the lids; a similar process had involved the lid margins around the bases of many of the lashes. Much flaky yellow discharge. Some œdema of left side of face; left preauricular and cervical lymphatic glands considerably enlarged and slightly tender. Right eye normal; slight œdema of right side of face. Hyperæmia of fauces; no membrane. Temperature 99·8° F. Patient looked and felt fairly well. Four days later the conjunctiva of the socket was almost normal in appearance.

In this case the clinical features were so much at variance with those characteristic of a simple Koch-Weeks infection as strongly to suggest that it was the staphylococcus aureus which had played the chief rôle in the production of the clinical picture.

### GROUP 3.—AN INTERMEDIATE STAPHYLOCOCCUS.

This organism was present three times, twice in pure culture and once in association with a diphtheroid bacillus; in each case it was considered the cause of the lesion. In each instance cultures of a Gram-positive staphylococcus were obtained, which, after prolonged exposure to sunlight, remained of a colour intermediate between aureus and albus. In one case a subculture upon gelatin showed commencing liquefaction in 48 hours, becoming complete in six days. In the remaining two cases the fullest cultural characters were taken and were found to be similar to those obtained from the aureus strains of the preceding group. The three cases occurred in children under six years of age. The first case was a rather acute, and extremely intractable, bilateral conjunctivitis. There was a watery discharge with a few flakes, slight thickening of the lid margins, and some enlargement of both preauricular lymphatic glands. The second case was unilateral and associated with vesicle formation on the lid margins, followed by superficial necrosis which extended to the palpebral conjunctiva. The preauricular gland was enlarged and the temperature reached 101° F. The third case was a mild bilateral conjunctivitis with superficial membrane formation in both lower fornices.

### GROUP 4.—AN UNCLASSIFIED COCCUS.

This was present in one instance and was associated with a diphtheroid bacillus. The films showed numerous microphages and a number of Gram-positive diplococci, some of which were intracellular. On agar small, round, white colonies were obtained which were intermediate in size between those usual for a streptococcus and those for a staphylococcus; they consisted of Gram-positive cocci in pairs and small clumps; in broth they appeared in small clumps and in short chains of two and four. In neutral red broth they grew well anaerobically but without changing the colour of the medium. Gelatin was liquefied in eight days. Milk and lead acetate were unaltered. No indol was formed in peptone broth. Of the carbohydrate media, lactose, maltose, cane sugar, and arabinose were acidified; xylose, mannite, salicin, raffinose, erythrite, and sorbit were unaltered. The coccus was non-pathogenic to a guinea-pig. We have isolated an exactly identical organism from a case of acute cellulitis. The organism appears to have some characters common to both the streptococci and staphylococci. The case from which it was derived in this instance was a unilateral conjunctivitis without corneal lesion in a child five years of age. There was considerable swelling of the conjunctiva with thin mucinoid discharge containing a few thicker flakes. The preauricular lymphatic gland on the same side as the affected eye was just palpable. The patient did not attend the hospital a second time.

### GROUP 5.—STAPHYLOCOCCUS ALBUS.

This organism occurred altogether 28 times. On 12 occasions it was associated with other pathogenic organisms—namely, aureus five times, gonococcus three times, Koch-Weeks bacillus twice, Morax-Axenfeld bacillus, and a streptococcus once. In the remaining 16 cases it was either the only organism present or was associated with a diphtheroid bacillus. These 16 cases were accompanied by a considerable conjunctival discharge, the cells in which were mainly polynuclear; in the great majority of the films Gram-positive cocci were present, and many of these were inside the leucocytes. Large white colonies were obtained on agar in each case and these remained white on being exposed to the light for some days. In the majority of cases a subculture was taken on to gelatin and this was, as a rule, liquefied in from two to (more commonly) seven days. In three cases cultures were taken also from a nasal discharge which was present; on one occasion albus only was grown from the nose, once albus and the micrococcus catarrhalis, and once albus and aureus. In the last case the complete cultural characters of the albus, from the eye and from the nose, were investigated. The results were strictly identical in two cases.

Since a white staphylococcus is stated to have been frequently isolated from the normal eye, and since this class of organism is frequently one of low virulence, the question has arisen as to whether it can ever give rise to an acute conjunctival infection. In 16 out of these 28 cases this was the only organism of known pathogenicity found; it was present not only in the cultures but as a rule in the films and frequently within the phagocytes; moreover, in three cases it was present also in another, and possibly the primary, lesion. If albus is not allowed to be the cause of the infection it must be supposed either that a known causative agent was overlooked, or that some unknown organism was the cause of the disease. Every precaution was taken to guard against the former contingency and the latter supposition seems unnecessary, for some species of albus approach closely to the virulent staphylococcus aureus in their cultural characters, and there is a wide range both in the virulence of any particular organism and the resistance of any particular person; there is, too, sufficient evidence, both clinical and experimental, that a white staphylococcus can produce an acute inflammation. The cases in which a staphylococcus albus appeared to be the causative organism were almost all of mild type. In one case, however, a wasted unhealthy child, the infection was of a very severe character.

The main clinical features are presented in the following table:—

| | |
|---|---|
| Unilateral ... ... ... ... ... | 5 |
| Bilateral... ... ... ... ... ... | 11 |
| Severe ... ... ... ... ... ... | 1 |
| Moderate ... ... ... ... ... | 1 |
| Mild... ... ... ... ... ... ... | 14 |
| Discharge { Thin ... ... ... | 15 |
| Discharge { Purulent ... ... | 1 |
| Membrane on conjunctiva ... | 2 |
| Pellicle ,, ,, ... | 2 |
| Ulceration of, or membrane on, lid margins ... ... ... ... | 2 |
| Impetigo ... ... ... ... ... | 6 |
| Nasal discharge ... ... ... ... | 4 |
| Lymphatic glands enlarged ... | 5 |
| Lymphangitis of face ... ... | 1 |
| Antecedent measles ... ... ... | 3 |
| Highest recorded temperature 99·4° F. | |

The following are notes of illustrative cases:—

CASE 10.—A female, aged 19 days. O.P., R.L.O.H., April 6th, 1906 (Mr. P. Flemming). Discharge from eyes noticed third day after birth. Some swelling of lids of both eyes. Palpebral conjunctiva succulent and purplish. Muco-purulent discharge. Corneæ normal. Eyes quite well in five days.

CASE 11.—A female, aged 30 years. O.P., R.L.O.H., Sept. 24th, 1906 (Mr. W. Lang). Right eye affected 36 hours. Pink œdema of both right lids, extending inwards to nose and outwards on to cheek. Palpebral and bulbar conjunctiva considerably swollen; slight follicular enlargement. Thin discharge. Cornea normal. Right preauricular and cervical lymphatic glands enlarged. Left eye not affected. Temperature 99·4° F. Condition of eye improved rapidly but three days after the first attendance the left conjunctiva became injected and slightly swollen without enlargement of lymphatic glands. Both eyes were almost well four days later.

CASE 12.—A male, aged 13 years, O.P., R.L.O.H., Oct. 24th, 1906 (Mr. Lawford). Impetigo of left foot "on and off for a long time." Right nostril sore for three or four months. Right eye affected four days. Right lids swollen and indurated; many small flattened vesicles on margins of both lids. Palpebral conjunctiva very red, swollen, and follicular. Discharge thin with a few flakes. Cornea normal. Right preauricular and submaxillary lymphatic glands much swollen. Impetiginous sores on toes of left foot; glands in left groin enlarged. Temperature 99° F. Rapid improvement under treatment.

CASE 13.—A female, aged one year, O.P., R.L.O.H., Feb. 14th, 1906 (Mr. Gunn). Discharge from right eye five days. Ulceration of lower lid noticed one day. Slight swelling of right lids; some ulceration of skin at inner canthus. Palpebral and bulbar conjunctiva slightly swollen; superficial yellowish grey necrosis of conjunctiva of both lids. A very little thin discharge. Cornea normal. Left eye not affected. A week later the condition of the conjunctiva had greatly improved, but a minute corneal ulcer had developed. This had healed 17 days later.

The line of treatment adopted in the staphylococcal and streptococcal infections was as follows. In those cases in which the conjunctival inflammation was not associated with membrane formation or ulceration of the lids the conjunctiva was brushed over daily with a solution of silver nitrate, usually of the strength of five grains to the ounce and the conjunctival sac was washed out every four to six hours with some antiseptic lotion: perchloride of mercury in the strength of one part in 10,000 appeared to be the most satisfactory for this purpose. Where membrane formation was present a 20 per cent. solution of argyrol was used instead of nitrate of silver, and was found to have no tendency to produce extension of the necrotic process, such as has been observed in cases of this type after the use of silver nitrate. In those cases in which there was an associated infection of the skin of the lids or their margins without corneal lesions the application of boric fomentations to the lids, by bringing about a rapid restoration of the skin to a healthy condition, was found to act as a valuable adjuvant to the treatment of the conjunctival sac. Corneal ulceration appeared to afford a contraindication to the use of fomentations. The frequent application of moist heat to the lids in the form of hot bathing was found to have a beneficial effect in cases with this complication. In the more severe cases the general condition of the patient was frequently a factor demanding special attention. In a few cases a tardy convalescence was associated with a residual infection of the lash follicles, evidenced by thickening of the lid margins and hypersensitiveness when the cilia were stroked with the finger; satisfactory progress was usually maintained by daily epilation of loose lashes and scrubbing of the lid margins with a pledget of wool soaked in a 15 per cent. solution of protargol.

A percentage comparison of the main features met with in the cases associated with the streptococci, staphylococcus aureus, and staphylococcus albus gives the following results:—

| — | Unilateral. | Bilateral. | Severe. | Mild. | Membrane. | Pellicle | Cornea involved. | Enlargement of lymphatic glands. | Impetigo or ear discharge. | Nasal discharge. | Antecedent measles. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % | % | % | % | % |
| Streptococci ... | 33·3 | 66·7 | 55·5 | 9·0 | 55·5 | 11·0 | 33·3 | 22 2 | 33·3 | 11·0 | 33·3 |
| Staphylococcus aureus ... ... | 37·7 | 62·3 | 44·4 | 22·2 | 27·7 | 22·2 | 33·3 | 44·4 | 37·7 | 11·0 | 15·6 |
| Staphylococcus albus ... ... | 31·0 | 69·0 | 6·25 | 87·5 | 12·5 | 12·5 | 18 7 | 31·25 | 37·5 | 25 0 | 18·7 |

The great majority of these infections occurred in young children. In all the groups a thick purulent discharge was rarely met with, the character of the discharge being usually glairy with some solid flakes, or watery. Conjunctival hæmorrhages, so frequently met with in Koch-Weeks conjunctivitis, were observed in only two of the cases, both albus infections; an associated "angular" affection of the lid margins was not met with. A possible exposure to contagion was noted in one of the aureus and in one of the albus cases, and in the mild streptococcal affection occurring during the prodromal stage of measles.

From the above considerations it is evident that the clinical symptoms in the various infections presented many points of similarity, but that the severity of the type of infection showed a direct relation to the generally recognised pathogenicity of the causative type of organism. Membrane formation was met with in association with all the organisms in the group. The phenomenon of membranous formations was particularly observed, and was met with in various forms. In some of these a mere fibrinous pellicle was present adhering loosely to a conjunctival surface which presented when exposed an injected or granular appearance. In other cases the inflammatory process had apparently proceeded further, resulting in the destruction of the most superficial layers of the conjunctiva, which had become incorporated in the membranous structure; such membranes were more firmly adherent, and their removal was associated with conjunctival hæmorrhage. In other cases, again, the process had extended still more deeply, resulting in a more or less extensive necrosis of the tissues; such membranes were firmly adherent so that their removal would have entailed the display of an ulcerated surface.

The question of the relative frequency of glandular enlargement in the various infections presents a point of interest; such enlargement was usually observed in the severe cases of staphylococcal conjunctivitis, but was notably absent in the most virulent streptococcal cases.[9]

Corneal ulceration, although met with in all the types of infection, occurred in its severest and most intractable form in the streptococcal infections; indeed, there can be no doubt that the supervention of this complication in such infections renders the prognosis as to the preservation of the affected eye exceedingly grave, while the spread of the infection to the interior of the globe subsequent to perforation is liable to prove a menace to the actual life of the patient.

### GROUP 6.—THE GONOCOCCUS.

This organism was obtained altogether 27 times; but this number cannot be taken as the proper proportion of its occurrence in the series, since many cases of ophthalmia of the newly born which presented themselves were not investigated. The majority of cases of gonorrhœal infection of the eyes in older children or adults are included. In 13 cases the gonococcus was associated with a diphtheroid bacillus. A white staphylococcus was present in two of these cases and in one other case, or in three cases altogether. The staphylococcus aureus was present twice, while the gonococcus was the only organism found in 11 cases. In only about one-fourth of the cases was a growth of the gonococcus obtained, the bacteriological diagnosis of the remainder resting with the examination of the films. No clinical difference in the severity of the case could be made out between those patients from whom a growth of the organism was obtained and in those from whom none was obtained; nor did the presence or absence of a diphtheroid bacillus appear to affect the clinical course. The two cases associated with aureus were both severe, in one case the affected eye being lost, while the other case was complicated by corneal ulceration. Of the three cases accompanied by albus two were of moderate severity and one was a mild affection. In five of the cases in older patients films were examined from the associated urethral or vaginal discharge and gonococci were found in each instance.

The question of the presence of coarsely granular eosinophile cells in the discharge and in the blood was particularly investigated. On the whole a slight but fairly constant increase in the eosinophile cells of the blood and of the pus was found to be present in the gonorrhœal infections; it was often, however, inconspicuous and occasionally absent, so that no reliance can be placed upon it in diagnosis. The presence of eosinophiles in the blood in the proportion of 2 or more per cent. was considered to constitute an eosinophilia.

---

[9] Cf. Jessop: Transactions of the Ophthalmological Society of the United Kingdom, vol. xxii.

The question of the existence of a gonorrhœal eosinophilia is considered by Cabot,[10] who considers an eosinophilia of 4·2 per cent. as within the normal limits, a number with which it is impossible to agree. In these cases no relation could be made out between the severity of the infection and the number of eosinophile cells present in either the discharge or the blood. Of these 27 cases 18 occurred in children under one month old and nine in older children or adults. The actual number of children *under one month old* examined in this series was 22. In 18 of these gonococci were present; in 4 they were found neither in the films after a prolonged search nor in the cultures. The organisms present in these four cases were a streptococcus twice, a white staphylococcus once, and a diphtheroid bacillus once.

### GROUP 7.—THE DIPHTHERIA BACILLUS.

In 105 cases examined this organism was met with twice only, and since these cases represent only a small proportion of the total number of patients reviewed, the diphtheria bacillus would seem to be an unusual cause of conjunctivitis. In both these cases another organism was present—namely, in one instance the staphylococcus aureus and in the other the streptococcus pyogenes. Both patients were children suffering from a moderately severe type of conjunctivitis, which was, however, not clinically considered to be diphtheritic. A nasal discharge, from which the diphtheria bacillus was cultivated, was present in both cases and was probably the primary source of infection.

It is well known that diphtheroid bacilli are frequently present in the conjunctival sac, as also in the nasal mucous membrane, and that these organisms cannot be distinguished from the genuine Klebs-Löffler bacilli either morphologically or by their cultural appearances upon solid media. The most useful medium for distinguishing the two organisms is undoubtedly litmus dextrose broth, which is acidified by the diphtheria bacillus in 12 hours at 37° C. The diphtheroid bacilli met with in the eye affect dextrose so rarely that if a bacillus is present in the discharge and is found to acidify litmus dextrose in from 12 to 24 hours it is advisable to administer antidiphtheritic serum, whether the case clinically resembles diphtheritic conjunctivitis or not. By taking the initial culture on to a solid medium and by subculturing from that into dextrose a bacteriological diagnosis sufficient for practical purposes can if necessary be made in 24 hours. Since, however, diphtheroid bacilli are exceptionally met with which are capable of acidifying dextrose the diagnosis can be completed only by animal inoculation. In these cases two cubic centimetres of a thin suspension of the bacilli were injected subcutaneously into guinea-pigs, resulting in both instances in the death of the animal in from 30 to 36 hours with the ordinary post-mortem appearances of the disease; in one case the bacillus was recovered from the spleen.

The following are clinical notes of the two cases in which the Klebs-Löffler bacillus was found:—

CASE 14.—A male, aged one year and 11 months, I.P., S.T.H., Feb. 15th, 1907 (Mr. Lawford). Child ailing one week: croupy cough, no history of exposure to diphtheria. Right eye: both lids swollen; muco-purulent discharge; thin yellow membrane on conjunctiva of both lids, which was peeled off with difficulty, leaving a bleeding surface. Centre of cornea infiltrated. (When first seen, five days before admission, the membrane was limited to the lower lid, extending to the upper lid two days later; the cornea remained clear until the day before admission.) Left eye normal. Profuse nasal discharge and excoriation of left nostril. No membrane on tonsils. Temperature normal. Urine contained a strong trace of albumin. Klebs-Löffler bacillus and streptococcus pyogenes present in the conjunctival sac. On the first day after admission 8000 units, and on the third, fourth, and fifth days 4000 units of diphtheritic antitoxin were administered, the patient developing an antitoxin rash two days after the last injection; local treatment was limited to the use of antiseptic lotions, the use of nitrate of silver, which had been applied before admission to hospital, being discarded. The lids remained free from membrane after the fourth day and convalescence, although protracted, was satisfactory. Twelve days after admission a pustule was noted on the right cheek below the right eye. Cultures taken at about this date showed streptococci but no bacilli. The temperature on several occasions was as high as 100° F. but never rose above this, and the urine was free from albumin three weeks after admission. The patient left hospital on March 25th, the conjunctiva being then free from signs of inflammation and the cornea having healed. He was readmitted on May 13th, the right eye having been inflamed for a week and the condition being as follows. Right lids swollen; thin yellow absolutely adherent membrane on conjunctiva of both lids, which was considerably swollen; bulbar conjunctiva injected but very slightly swollen. Purulent discharge. Cornea not affected. Left eye normal. Right preauricular and submaxillary lymphatic glands enlarged. Urine contained no albumin. Temperature 101° F. The conjunctiva yielded a pure culture of streptococcus pyogenes; no bacilli were found either in culture or in film preparations. Four days later, under treatment with perchloride of mercury lotion, the condition showed considerable improvement, the membrane formation being less extensive. There was some superficial scarring of the conjunctiva.

We are much indebted to Mr. Lawford for his permission to publish this case.

The second case was of milder type with superficial membrane on the conjunctiva of both lower lids, enlarged preauricular glands, and thin nasal discharge. The fauces were normal. The patient recovered in 12 days without the use of antitoxin. There were no corneal ulceration, no albuminuria, and no subsequent loss of knee-jerks.

### GROUP 8.—DIPHTHEROID BACILLUS.

In 60, or rather more than half of the cases examined, bacilli which morphologically resembled the diphtheria bacillus were present, either in the films, the cultures, or in both. In 49 of the cases other organisms were present in addition; in none of these cases was there any reason to suppose that the diphtheroid bacilli were the causative agents. In the remaining 11 cases, however, these bacilli were the only organisms discovered.

The term "diphtheroid bacillus" includes a variety of organisms, and a number of these have been investigated by Graham-Smith[11] and others with a view to their differentiation. The majority of those met with in the eye in this series, however, appeared to conform to the same type, while a few presented some cultural modifications; those which we have investigated from other parts of the body grew more abundantly in broth and more readily produced acid reaction in litmus dextrose broth. The name "diphtheroid bacillus" does not, in this account, include Hoffmann's bacillus, which is morphologically distinct from the Klebs-Löffler bacillus, and which was not met with in these cases. The frequent presence of these bacilli, both in the healthy and in the diseased eye, would seem to indicate for them a mainly saprophytic existence; they may frequently be seen in large numbers in a film within the epithelial cells and unaccompanied by evidence of inflammation.

The diphtheroid bacilli met with showed the following morphological and cultural characters. On agar a good growth, forming in from 12 to 24 hours small pin-point, rather opaque, colonies with slightly irregular margin and presenting a paler periphery with a ditch-like interval between centre and periphery. Films from these colonies show beaded bacilli with the typical arrangement of the diphtheria bacillus, large numbers having well-marked club-shaped ends. In films taken from the water of condensation masses of very beaded bacilli are present, many of them arranged in tight clumps, while streptococcal forms in chains of about eight to ten are not infrequent. The bacilli stain deeply by Gram's method, but their characters are best shown by Löffler's methylene blue; one culture which was kept for three months was found to have lost its property of retaining the stain by Gram's method. On blood agar and nasgar similar colonies are obtained. The bacillus grows well on gelatine at 22° C.; there is no liquefaction of the medium. In broth and in the various carbohydrate media no growth as a rule takes place, but the organisms maintain their existence. In litmus milk growth is often absent or is slight.

In the 11 cases in which diphtheroid bacilli alone were found the causative organism may have been overlooked, but in a few of these the features were clinically anomalous and more than one examination was made with identical results. In a high percentage of these cases the bacilli showed some cultural variations to the type usually observed and it is possible that some species of the diphtheroid bacilli may possess properties pathogenic to man. In a few instances animal inoculations were made but with negative results; the injections were in each case made subcutaneously into the legs of guinea-pigs.

### CONCLUSIONS.

That both staphylococcus albus and staphylococcus aureus, as well as streptococci, are capable of exciting an acute conjunctival inflammation. That these organisms when they are present as the only pathogenic bacteria in an inflammatory conjunctival discharge should be considered as the causative agents. That these organisms give rise to a considerable percentage of all cases of acute conjunctivitis. That the severity of the type of inflammation they produce varies on the whole directly with the generally recognised pathogenicity of the members of the group, the most severe cases being associated with the streptococci and the least severe with the white staphylococci; but that the severity of the symptoms produced by any of the individual organisms may vary considerably with the idiosyncrasies of the patient. That there is reason to suppose that these bacteria, when associated with other pathogenic organisms, tend to increase the severity of the conjunctival inflammation. That the types of acute conjunctivitis due to these organisms, although presenting no pathognomonic features, are not infrequently suggestive of their etiology. That staphylococcal, as well as streptococcal, infection of the conjunctiva is liable to be associated with membrane formation. That conjunctivitis due to the diphtheria bacillus is uncommon and may be difficult to diagnose on clinical grounds. That diphtheroid bacilli are present in a high percentage of cases without appearing to influence the nature of the processes. It is probable that they represent more than one species and it is possible that some of these may be pathogenic to man; but there is no evidence that they may ever become transformed into the genuine diphtheria bacillus. That sporadic cases of pneumococcal conjunctivitis must be of rare occurrence in London, not a single case being met with in this series. Inasmuch as the diagnosis of this organism from a streptococcus may be a matter of great difficulty, its identification by film preparations only or by incomplete cultural investigations cannot be relied on; the mere appearance of encapsulation of the organisms in the films is most unreliable as a means of diagnosis. These observations agree with the investigations of others as to the rarity of organisms of the bacillus coli group as causes of acute conjunctivitis.

---

[10] Cabot: Clinical Examination of the Blood, 1904.

[11] G. S. Graham-Smith: The Action of Diphtheria and Diphtheria-like Bacilli on Various Sugars and Carbohydrates, Journal of Hygiene, July, 1906.

In conclusion, we have to thank the members of the staff of the Royal London Ophthalmic Hospital and of the Ophthalmic Department of St. Thomas's Hospital for permission to make use of the material from their cases. All the inoculation experiments were performed by Mr. L. S. Dudgeon at St. Thomas's Hospital and some of the organisms isolated were submitted to Gordon's tests by him. We are also indebted to him for his advice on many occasions. We have also to thank Mr. H. E. Gotelee, Mr. W. C. A. Ward, and other ophthalmic house surgeons at St. Thomas's Hospital for their assistance in obtaining the clinical notes of some of the cases.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### NOTES OF A CASE OF DISTAL LIGATURE OF THE COMMON CAROTID ARTERY FOR ANEURYSM.

By J. CRAWFORD RENTON, M.D. EDIN.,

SURGEON AND LECTURER ON CLINICAL SURGERY, WESTERN INFIRMARY, GLASGOW; EXAMINER IN SURGERY AND CLINICAL SURGERY IN THE UNIVERSITY OF ABERDEEN.

THE patient, a female, aged 47 years, was sent to see me by Dr. J. Holms of Paisley in October, 1906. She was suffering from a pulsating swelling immediately above the right sterno-clavicular articulation and she complained of the throbbing and of a pain in the region of her heart giving rise from time to time to palpitation. On examination the tumour and its pulsation were distinctly visible and on palpation both were easily felt; the two radial pulses were equal in strength and character. Considering the above facts it was evident that she was suffering from an aneurysm of the first part of the right common carotid artery not involving the innominate or subclavian. I therefore advised that a distal ligature should be applied to the common carotid. Professor R. Stockman saw her in consultation and was satisfied that her general arterial condition was otherwise healthy. The operation was performed, a silk ligature being carried round the artery above the omohyoid. The wound healed by first intention; no headache was complained of, and the patient at the end of four weeks was allowed to lie on the sofa. On examination at the end of this time no pulsation was visible in the swelling and only moderate beating was noticed on palpation. Three months after the operation the patient was unfortunately in a tramcar collision, after which the pulsation increased for some weeks. This has now to a large extent subsided and the patient expresses herself as free from any discomfort.

*Remarks.*—Ever since Brasdor suggested and Wardrop carried out distal ligature of the common carotid in 1825 cases of aneurysm to which this method is suitable have occurred from time to time, but they are sufficiently rare to allow of the above case being recorded. The great improvement in the aneurysmal condition and the increased comfort which the patient now enjoys seem to justify the operation.

Four weeks after this case was under care Dr. Holms asked me to see another patient with an aneurysm exactly similar to the above. She was 74 years of age and had general arterial disease so that I did not advise operation. It is curious to have had the opportunity of seeing two such cases within six weeks, the more so that no parallel case has come before us for consideration for several years.

Glasgow.

### A CASE OF FOREIGN BODY IN THE FEMALE BLADDER.

By WILLIAM HOOK, L.S.A.

THE patient in the following case was a woman, aged 22 years, who was brought by her mother to my surgery on June 15th. I was informed that owing to difficulty in leaving her work for lavatory purposes her daughter had inserted a cork into her "front passage." An examination of the vagina showed that there was no foreign body there, so I assured her that it must have been expelled and as she no longer felt pain she went home. Returning, however, very shortly she said that she was sure the cork was still there. I then made an inspection, and finding the urethra very low and dilated without the slightest difficulty I passed my finger into the bladder and there came on the cork. About an hour later, having obtained the assistance of my friend, Mr. R. J. Heatly, of Stockwell-road, who put the girl under an anæsthetic, I made an attempt at removal but was unable to locate the foreign body. My friend, however, who has a long forefinger, quickly did so and after failing to grasp it with suitable forceps ultimately succeeded in manipulating it through the urethra. I saw the girl two days later and she then appeared none the worse for her foolish act. The cork measured an inch in length and half an inch in diameter.

Clapham, S.W.

### A CASE OF PROLONGED RETENTION OF FOOD IN AN ŒSOPHAGEAL POUCH.

By WILLIAM AYRES, M.D. DUB.

THE patient, who was a female, 38 years of age, suffering from pulmonary tuberculosis, sent for me as she was troubled with a severe cough. As there was a large cavity opposite the third and fourth ribs on the left side and as there was a large quantity of secretion this cough was naturally thought to be one of the ordinary concomitants of the condition present. A few days subsequent to my first attendance after a violent paroxysm of coughing a peculiar-looking yellow mass was expectorated. The cough was much relieved in a few days. The pathological report was as follows: "The substance expectorated one and a half inches long, five-eighths of an inch wide, is cheese; it must have been lodged in some fossa or in a pouched œsophagus formed by adhesion to a tubercular gland at the bifurcation of the trachea and after irritation from its presence or during an attack of coughing ejected." The patient disliked cheese; only twice during the year had she partaken of such an article of diet—namely, once during August and the last time on Dec. 26th. The substance was ejected on Feb. 5th, so that it must have lain in the pouch for at least six weeks without giving rise to any symptoms.

The points of interest are the size of the piece of cheese and the length of time it was in the pouch. The question will also arise, What, if any, are the powers of digestion possessed by the glands lining the œsophagus?

Brierley Hill.

# Medical Societies.

## THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

### *Presidential Address.—A Lantern Demonstration on Some Points in Tropical Diseases.*

The first meeting of this society was held on June 26th, Sir Patrick Manson, the President, being in the chair.

The President, in delivering the opening address, said that one important object of the society was to bring together the men who were interesting themselves in tropical medicine with the idea that by so doing the subject itself would be advanced and the members benefited. With a view to securing these objects the society had been placed on a basis as broad as possible. Although domiciled in the metropolis it was open to any member of the profession, whether domiciled in London, Great Britain and Ireland, or abroad, and also to those followers of any science or profession capable of forwarding, directly or indirectly, the interests of tropical medicine. At one time the specialising of tropical medicine was looked on somewhat askance, and still more so the establishment of special schools for the teaching of tropical medicine. Doubtless the formation of the society would be regarded by some in a similar way, but in time the general body of the profession would become acquainted with its objects and work and, as had been the case with the special teaching of tropical medicine, the society would soon be tolerated and ultimately approved. The President then proceeded to compare the tropical medicine of the early "nineties" as represented by Davidson's "Hygiene and Diseases of Warm Climates," published in 1893, with the section on tropical diseases in the new edition of Allbutt's "System of Medicine." In Davidson's work the first chapter in the section on general diseases related to malaria. It was a carefully written article, embracing all the most important knowledge and views of the time; yet in that article there was not a single word on the mosquito as a carrier of malaria. In those days, although Laveran's great discovery had already been before the world 12 years, they had got no further than the conviction that air was a common medium of infection and there was still a lingering belief in the Hippocratic idea that the drinking of marshy water produced enlargement of the spleen. Now a large part of the tropical section of Allbutt's "System" was occupied with the part played by the mosquito in malaria. Everyone knew that the mosquito was the sole vector of malaria and an enormous literature had grown up around a discovery which had changed radically their views not only as regarded the etiology and prophylaxis of malaria, but had given a powerful stimulus to the study of the protozoa in general and also the rôle of insects in the transmission of disease germs. It could not be claimed that there had been much material advance in regard to cholera, leprosy, and beri-beri; but as regarded negro lethargy or the sleeping sickness it might be claimed truly that the whole subject, alike as regarded etiology, symptoms, diagnosis, and treatment, had been completely revolutionised and placed on a sound basis. They now knew that the sleeping sickness was the terminal phase of a trypanosoma infection, a type of disease hitherto unrecognised in human pathology, that the immediate cause of the sleeping symptom was an infiltration of the lymphatic spaces of the brain with certain small mononuclear cells, that the disease was conveyed by the tsetse fly, and that it was amenable to some extent to arsenic, mercury, and certain dyes, all absolutely of recent discovery. The tropical fluxes—diarrhœa and dysenteries—in the aggregate constituted the most important department of tropical medicine, but unfortunately they were still, both as regarded etiology and treatment, in an unsatisfactory state. It was true that the amœba was creeping into favour and that they had got the length of recognising a bacillary dysentery, but the amœba and the bacillus dysenteriæ did not cover the entire field and unfortunately the knowledge of their existence had not materially strengthened the power of treatment. The numerous additions to tropical helminthology were important. Chief among these was Looss's discovery that the larval ankylostome obtained access to the intestinal canal by penetrating the skin or the surface of the body—a discovery suggesting possibilities which had to be reckoned when they studied the route by which access was obtained to the human host. The modern text-books must have chapters on spirillosis, seeing that the term relapsing fever which Murchison and others used and which Carter also used in his studies in India covered not one but a number of infections, spread probably by a corresponding number of previously unsuspected ticks or other blood-suckers. Then the tropical pathologist must take cognisance of a number of diseases of the lower animals, important in themselves, but more important in illustrating principles applicable to human pathology, especially tropical pathology. The study of the anthropode and correlated disease blood-suckers had grown to be so vast a subject that for its proper appreciation special studies had to be made and its teaching relegated to special men. In Davidson's day a single culex was all that they had to study, but nowadays they had to know something about nearly 600 species of mosquitoes and so, in a less degree, with the ticks, the tsetse flies, and several other though less important blood-suckers. He might enumerate many other discoveries and changes, but those he had alluded to sufficed to show that within the last 13 or 14 years the progress in tropical medicine had been remarkable. Not only had recent discovery widened their horizon, but many additional workers were now in the field and hitherto untrodden departments of natural science having a bearing on tropical pathology had been annexed by the tropical pathologist. The multiplication of workers was extraordinary and doubtless was accounted for by the establishment of the several tropical schools in Great Britain and elsewhere, and not least by the sympathy and active encouragement that research in tropical pathology had received at the hands of the British Government. Time was when with justice they could reproach their rulers for indifference in that matter; nowadays quite a different feeling obtained in official circles, and instead of being repressed and cold-shouldered the investigator in tropical pathology was encouraged in every possible way by the British Government and its officers. Other Governments, too, had ceased to be indifferent; some were actively sympathetic. The interest which the British Government had shown in sleeping sickness promised well. The fact that His Majesty's Government had called a conference of the foreign Powers to discuss that subject from an international point of view showed that they were entering on a new era as regarded the Governmental element in the study of tropical disease. It might be that that sleeping sickness conference was but the prelude to similar discussions and international agreements on the subject of other important tropical diseases, a matter of more importance than at the first glance it might appear to be. All over the British tropical possessions laboratories were being established for the special investigation of tropical disease and for the assistance of the tropical practitioner. These laboratories had just began to bear fruit, and he had not the slightest doubt that ten years hence they would have important discoveries as well as an enormous accumulation of important data as a result of that enlightened policy. The rôle of the society was to try to bring them abreast of what was being done by that army of workers, so that those who had to teach in that country and those who went abroad to practise or to investigate should be thoroughly abreast of what had been done and of what was being done, so as to be in the best position to do full justice to tropical patients and to tropical diseases and hygiene and to lend a hand in advancing the subject.

Dr. C. W. Daniels of the London School of Tropical Medicine gave a lantern demonstration on Some Points in Tropical Diseases. He commenced with diseases such as yaws, not directly fatal, and ended with such serious affections as beri-beri and sleeping sickness; he emphasised the importance of preventive measures in tropical diseases.

---

Medico-Legal Society.—A meeting of this society was held on June 18th, when a discussion took place on Opinion and Fact in Medical Evidence; Mr. Walter Schröder presided.—Dr. C. H. Wise, in opening the discussion, commented upon the sharp distinction which is often drawn in practice and in books on evidence between "opinion" and "fact." He said: It is laid down that "a witness should state facts only. His mere opinion is no evidence." Explanations of facts are rejected as "mere opinion" and it is often hinted that medical men are prone to confuse opinion and fact, to obtrude their opinions instead of confining themselves to the plain statement of observed facts. Three propositions were laid down for discussion: 1. The opinions of a medical witness on observed facts are often more valuable than the mere narration of the facts themselves. A matter of fact, as presented in evidence, may be defined as something of which we obtain a conviction from our internal consciousness or from the use of our senses, something seen, heard, or felt. Medical facts seldom can be produced in any court as primary evidence to speak for themselves. General propositions, being facts, such as the circulation of the blood or mathematical deductions, are excluded. Facts are proved by the testimony of percipient witnesses. When a fact is doubted on reasonable grounds or when a statement is a deduction from observed facts it becomes matter of opinion. For present purposes, a matter of opinion is a conclusion or judgment which is arrived at by comparisons of present observations with recollections of similar observations in like conditions and a balancing of the relative importance of resemblances and differences. Regarded thus, more so-called "fact" is really opinion than we usually realise. For all evidence of fact is really testimony to judgment on observed phenomena, it is something more than a description of the impressions made on our senses and therefore implies a theory or explanation of them. This judgment is generally so simple as to be unconscious and the interpretation of the appearances is matter of general agreement. Similarly the simplest medical evidence is of more value than the bare facts, which testified to alone are unintelligible. If merely the facts that are observed, say, in the case of a broken bone, are given in evidence an ordinary tribunal would fail utterly to appreciate their importance or their meaning unless the medical deductions were also stated. Even skiagrams, which have thrown such a flood of light on such cases, need the explanation and judgment of the skilled observer. 2. In medical evidence a clear line between opinion and fact cannot be drawn. This is one of the chief sources of the weakening of such evidence and yet it is strictly comparable with similar gradations in ordinary testimony to fact. Eye-witnesses may differ as to observed facts. Their perception may be modified by distance, by intervening objects, by dim light, by imperfect sight, by inattention, and by all these in any degree, so there may arise all gradations between what may be fairly called an accurate testimony to what existed or happened, and what is mere guessing from imperfect impressions. Most medical evidence is subject to similar modifications. It is in some cases an accurate conclusion arrived at from observations accurately made, and ranges from almost absolute demonstration to great uncertainty. The varying degrees of the faculty of observation, of development of the *tactus eruditus*, added to the obscurities of the subject, either innate or from surrounding circumstances, lead to doubt and difference. A broken bone may present every gradation from a protrusion of the broken end through the skin, a "fact" manifest and unmistakeable, to the obscure fracture that defies accurate recognition even with the aid of the x rays. This uncertainty is aggravated in some cases by the mutability of the subject matter. Disease is not, as it is commonly regarded, a definite entity, but is the manifestation of the struggle between microbic invasion or injury and the vis medicatrix of nature, in which the more or less complete victory of either combatant results in some one of the protean disorders which we label as ailments. As instance, scarlet fever with its varieties of epidemic type and gradations in unbroken series from mere slight sore throat to the most malignant forms. 3. Medical opinions are often valuable and conclusive, even when they cannot be supported upon cross-examination by the direct evidence of observed facts. This support should, of course, be possible, but its absence is not destructive of the value of the evidence. Experience in medical practice leads to the possibility of a power of recognition, an intuition that may fairly be compared to the method whereby personal identification is effected, although the minute facts leading to it cannot be detailed. A man may be certain in recognition of his friends and completely unable to explain by what facts he does so. The policeman may be quite correct in saying that a man was "drunk," although he is distressingly puzzled when cross-examined as to the actual details which have led him to that opinion. In the same way medical opinion may be a recognition based upon unconscious observations and judgments upon facts which, though undoubtedly present, are intangible and indefinable.—Dr. Charles Mercier suggested that variations in the statements of observed facts were often due to an absence of the power of verbal description. The state of another person's mind could never be known; all that was known was what he said, what he did, how he looked. As a matter of fact, all testimony which was outside our own minds was a matter of opinion.—Earl Russell thought differences resulted from the fact that the standards of comparison varied. It was of little use to state the whole truth in technical terms if the conclusion was not also included. When an opinion pure and simple was expressed the facts which led to that opinion should be extracted.—Dr. F. J. Wethered held that in arriving at a prognosis opinion was distinct from, though founded on, fact.—Dr. Stanley Melville, Dr. Albert Wilson, and Dr. Alexander Ambrose also spoke.

Dermatological Society of Great Britain and Ireland.—The final meeting of this society was held on June 26th, when it was formally dissolved and merged into the dermatological section of the Royal Society of Medicine. The President, Dr. Leslie Roberts, was in the chair.—Dr. A. Eddowes showed: 1. A girl, aged 16 years, with a Chronic Pruriginous Eczema affecting the lower limbs chiefly of 11 years' duration. 2. A woman, aged 56 years, with an Infiltrated Patch upon the left temple which had been present for 16 months. The centre was atrophic and the margins were raised and reddened. The diagnosis lay between a tertiary syphilide and a rodent ulcer. 3. A photograph of a case of Malignant Syphilis in a young woman in whom there was great phagedænic ulceration of the nose.—Mr. T. J. P. Hartigan showed: 1. A man, aged 56 years, who had a Rodent Ulcer which the exhibitor had treated with radium. The scar of the original ulcer was now plainly visible, the result being eminently satisfactory. Unfortunately, a fresh nodule had just begun to appear upon the nose, unconnected, however, with the scar. 2. A little girl, aged four years, who had had a Hairy Mole upon the Right Cheek similarly treated. 3. A man, aged 68 years, with Lupus Erythematosus of the Scalp of 40 years' duration. The disease was of the atrophic type and the general health of the patient was quite unimpaired. 4. The daughter of the last patient who had been more or less bald since the age of ten years. When five years old she had had some scalp affection and now three months ago, after a confinement, she began to suffer from an acute attack of what appeared to be eczema of the scalp. The diagnosis was far from obvious, some of the members suggesting that the source of the whole trouble might have been a favus, while others considered that lupus erythematosus was not out of the question.—Mr. Spencer Hurlbutt showed a little boy, aged four years, with a Psoriasiform Patch of the size of a crown-piece upon the abdomen, which began as small ringed spots four months ago and was considered to be ringworm. It did not respond to treatment but had continued to spread. The question now was whether the lesion might not be tuberculous in character.—Dr. G. Norman Meachen showed a male infant, aged eight months, with a Bromide Eruption, affecting the vaccination scars primarily as well as appearing in the form of small raised plaques upon the thigh. The source of the drug had not yet been successfully traced.—Dr. T. D. Savill showed: 1. A young woman, aged 25 years, with Epidermolysis Bullosa Hereditaria, affecting chiefly the legs. All the nails of the hands and feet were diseased. She had improved much under the influence of small doses of ergot, administered twice a day. 2. A case of Exfoliation of the Palms in a young woman, aged 21 years, who had suffered in this manner for three successive summers. There was some hyperidrosis.

---

Miller Hospital.—A festival dinner in aid of the funds of the Miller Hospital and Royal Kent Dispensary, Greenwich, was held on June 27th at De Keyser's Royal Hotel, Victoria Embankment. The Lord Mayor of London presided. In proposing the toast of the evening, "Success to the Miller Hospital," he said that relief had been provided for the sick and necessitous poor of Greenwich by this institution for 124 years. The annual expenditure was £4500, of which only £450 was assured. During the past year 285 in-patients had been received and 18,624 out-patients treated, 600 patients visited at their homes, and 560 maternity cases attended. If a suitable site could be found it was thought desirable to extend the hospital but, of course, money would be required to do this. In the course of the evening subscriptions to the amount of £1200 were announced.

# Reviews and Notices of Books.

*A Text-book of the Practice of Medicine for Students and Practitioners.* By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Second edition. Illustrated. London: Henry Kimpton. 1907. Pp. 1132. Price 21*s.*

THE first edition of this work was published in 1905 and the fact that so short a time has elapsed before a second edition has been found necessary is sufficient proof that the efforts of the author have met with the recognition which they deserve. In our review of the former edition[1] we expressed the favourable opinion which we had formed of the book as a whole and we also explained its plan and scope. We need not therefore dwell at length on the general plan of this text-book but will merely indicate the changes and additions which have been made in the present volume. These have involved but little alteration in the size of the work (a difference of 13 pages only), but every care has been taken to embody the latest views which have received general acceptance as being scientifically and clinically correct. Dr. Hare has shown a practical judgment in coming to the conclusion that the needs of the student and practitioner would be most satisfactorily met by excluding statements open to criticism and presenting facts which would prove useful in practice. Amongst the additions in this edition we notice some remarks on myelopathic albumosuria. The reference to this interesting condition is, however, very brief and only occupies ten lines. It is to be regretted that the valuable observations on this subject by Dr. C. W. Paget Moffatt and other observers have not been more fully referred to.

The subject of malarial fever is no longer placed amongst the "Infectious Diseases" but is considered in the section on "Diseases Due to Animal Parasites." No alteration has been made in the definition of the disease and although on etiological grounds there may be justification for this change in classification, yet for purposes of convenience the older plan is to be preferred. We may also remark that in the last edition of "The Nomenclature of Diseases," drawn up by a joint committee appointed by the Royal College of Physicians of London, "malaria" is still considered an "infective disease." The same alteration has been made in respect to kala-azar (this again being out of accord with the opinion of the committee just named). The results of Leishman's researches as to the etiology of this disease are duly described.

In the section on "Special Forms of Neuritis" a brief description is given of "obstetrical or birth palsy"—an affection of the nerves of the brachial plexus occurring after difficult and protracted labours, especially in cases of breech presentation.

It is somewhat disappointing to find that in the portions of the work devoted to treatment the power of description and lucidity of expression so characteristic of the author's manner of writing are not maintained at their usual level. His directions as to the treatment of any particular disease, as a rule, lack that detail which is so useful to a practitioner when seeking help in the therapeutics of a difficult case. The methods used in many instances differ from those usually employed in this country. Generally speaking that is of advantage as much may be learned from the experience of those trained in different schools. There are also some noteworthy omissions of drugs frequently adopted by English practitioners. For instance, stramonium is not mentioned by name with regard to the treatment of asthma, although we presume that Dr. Hare includes it under the heading of "Belladonna and its Sister Drugs." Still, no proper directions are given for its employment. Want of detail is again to be noticed in the description of the treatment of pulmonary tuberculosis on sanatorium lines.

Taking the work as a whole, however, we can recommend it as one containing a vast amount of information useful to students and practitioners. The sections on tropical diseases may be especially mentioned, and the text-book will be useful to medical men practising in countries in which such diseases are likely to be met with.

*Annual Report of the Sanitary Commissioner with the Government of India for 1905, with Appendices and Returns of Sickness and Mortality among European Troops, Native Troops, and Prisoners in India for the Year 1905.* Calcutta: Office of the Superintendent of Government Printing. 1906. Pp. 143. Price Rs. 3 or 4*s.* 6*d.*

THE report before us contains, as in previous years, the facts relating to health concerning the European army of India, the native army of India, and the gaols of India, the vital statistics of the general population, the history of the chief diseases amongst the general population, and the general history of vaccination in India, and concludes with some general remarks on various subjects. As regards the meteorology of the year 1905 this was characterised by the severity and persistency of the cold weather and the lateness and scantiness of the monsoon rains, especially in the north-west, and the consequent high temperature. With regard to the health of the European army the admissions for venereal disease head the list, although the rate was considerably lower than in previous years, being 153·7 per mille, as contrasted with 198·5 in 1904 and 385·5 for the decennium. Malarial and enteric fevers likewise gave a diminished ratio. The main causes of death were enteric fever and hepatic abscess, these diseases accounting for 29·7 and 11·7 per cent. of the total mortality respectively. The northern command was the healthiest as regards the numbers of those constantly sick and as regards the mortality-rate.

In the remarks on the various diseases we find a review of the different methods of prophylaxis against malaria, and the opinion is given that for practical prevention the methods of Koch and Morgenroth are probably the best—viz., the prescribing of 15 grains of quinine every ninth or tenth day, or on two consecutive days each week, whereby the drug is in such concentration that the parasites are quickly and easily killed, being still in those stages of development which are most susceptible to its action. The method of Plehn, which consists in the giving of eight grains every fifth day, is probably the least satisfactory. Attention is likewise drawn to the importance of recognising the increase in the relative number of large mononuclear leucocytes in the diagnosis of malaria. The x rays are noted as having no effect on the course of an attack or on the parasites but as having a favourable action on the chronic large spleen. With respect to the various forms of malaria noted, of 8106 cases, 73·78 per cent. were cases of benign tertian, 1·28 per cent. of quartan, 5·00 per cent. of malignant tertian, 0·38 per cent. of malarial cachexia, and 19·56 per cent. were returned as undifferentiated, showing, as is always the case, the relative rarity of the quartan form. With respect to treatment, it was found that quinine when in compressed form frequently passed unchanged through the system, whilst if the drug were administered by intramuscular or hypodermic injection the action was most rapid and powerful. We are glad to see that the authorities are making use of all the measures noted for the prevention of malaria; the patients are isolated whenever possible, wire gauze to the doors of the hospitals and mosquito curtains being used. Four cases of Malta fever were reported for the year, with no deaths, as contrasted with six admissions with three deaths in 1904.

---

[1] THE LANCET, March 10th, 1906, p. 678.

An excellent summary of the recent investigations as regards enteric fever is given; indeed, the section dealing with this all-important disease in India is one of the most valuable in the report and well repays perusal. Here we find the work of Krencker on the biology of the coli-typhoid group of micro-organisms first referred to; next, the results are alluded to of the campaign against endemic typhoid fever on the south-west frontier of Germany and note is made of the fact that the healthy, or at least the non-specifically sick, can harbour typhoid bacilli and secrete them to the danger of the public. The advantage of the method of blood culture for the early, rapid, and comparatively easy diagnosis of typhoid fever is insisted on. Respecting the vitality of the bacillus typhosus in water, it is shown to be but a short-lived organism in water under natural conditions. The infection by milk and other foods and the infection by contact, immediate or mediate, receive due attention. The part that infected dust and flies play in the propagation of the disease is insisted on, after which the paratyphoid bacilli receive attention. The necessary preventive measures are noted, whilst with regard to inoculation we observe with satisfaction that this practice has resulted in a substantial reduction in the incidence of, and death-rate from, enteric fever amongst the inoculated.

In the section on general remarks we find the work of the Mediterranean Fever Commission, carried on under the supervision of an advisory committee of the Royal Society, duly acknowledged. The work done by the Pasteur Institute at Kasauli is chronicled and due mention is made of the King Institute of Preventive Medicine at Guindy and of the Pasteur Institute for Southern India at Coonoor. We are glad to note that medical officers of both the Services are allowed to proceed to a laboratory for a period of from three to six months for the purpose of prosecuting research already commenced, or for instruction in technique, provided local arrangements can be made for the conduct of routine duties during their absence. In addition to the work at the bacteriological laboratories special inquiries have been commenced with reference to typhoid fever in India, dysentery in gaols and lunatic asylums, and malaria in the Presidency division of Bengal, and the inquiry into the etiology of kala azar has been continued. An important investigation is taking place on the nature of the dysentery that is the most known cause of mortality in Indian prisons, by Captain W. C. H. Forster, I.M.S., whose results will, it is hoped, add to the existing knowledge of one of the most fatal of tropical diseases. This valuable report finally closes with the various appendices relating to meteorology, admission-rates, and so on, of the different diseases amongst the European and native troops, and amongst the gaol population.

---

*The Drink Problem in its Medico-Sociological Aspects.* By Fourteen Medical Authorities. Edited by T. N. KELYNACK, M.D. Vict., F.R.C.P. Lond., Honorary Secretary of the Society for the Study of Inebriety, &c. London: Methuen and Co. 1907. Price 7*s*. 6*d*. net.

OF the importance to the community of a careful study of the problem of alcoholic indulgence and of the remedies which are proposed for the evil there can be no possible question. The present volume of 300 pages contains a series of essays by different authors on various aspects of the drink problem. "Each contributor has been allowed a free hand in the presentation of the particular subject allotted and each writer is responsible only for the chapter contributed." So speaks the editor in the preface and thereby lifts a load of responsibility off his own shoulders. He himself contributes an introduction, which is followed by an article by Dr. Harry Campbell on the historical side of the question and on the mode in which habits of excess are initiated. The psychology of the alcoholic subject is dealt with by Dr. T. Claye Shaw and the relation of drink to mental disease by Dr. T. B. Hyslop. Pathology is represented by Professor G. Sims Woodhead. Medico-legal points are discussed by Dr. Stanley B. Atkinson and the public health aspects by Dr. Arthur Newsholme. Mr. W. McAdam Eccles contributes a chapter on Alcohol in Relation to Life Insurance and Dr. Mary A. D. Scharlieb points out its special bearing on the social condition of women and children. Crime and pauperism as produced by alcoholic indulgence are discussed respectively by Dr. W. C. Sullivan and Dr. Ralph H. Crowley; its share in the production of national deterioration is indicated by Dr. Robert Jones. Methods to be adopted for the teaching of temperance form the subject allotted to Dr. E. Claude Taylor, while Dr. V. H. Rutherford, M.P., gives his views on the legislative measures that are required to combat the evil. The articles are necessarily of unequal merit. The most striking is that by Mrs. Scharlieb which breathes a spirit of broadmindedness and charity conspicuously absent from too much of the writing on the subject of alcoholism. The chapter on legislative measures for the control of the vice is disappointing, the writer even suggesting, apparently, that temperance is impossible so long as there is private ownership of land, whilst most of the paper is full of whirling words rather than of discussion of what is practicable. The editor's final contribution on the Arrest of Alcoholism serves to some extent to make up for the defects of the preceding oration. We do not find any novel light thrown on the problem of alcoholism in this volume. It is, however, a compendium of most of the facts known as to the habit and should form a valuable work of reference for those who are called upon to speak or to write on the subject. References are given to other works on alcoholism from which material is derived.

---

## LIBRARY TABLE.

*A Health Reader.* By C. E. SHELLY, M.D. Cantab., and E. STENHOUSE, B.Sc. Book II. London: Macmillan and Co. Pp. 96. 1*s*. 4*d*. net.—This book, like its predecessor, is the result of the serious attention that is being given to the teaching of the elementary facts of physiology and hygiene to school children. It is intended for pupils of from ten to 12 years of age, and the simplicity of diction is well suited for such little ones. We are able to give a considerable measure of praise to the body of the book. Anyone who has had the task of teaching medical subjects to a non-scientific audience knows well the difficulty of steering the middle course between explaining too little and attempting to explain too much. This difficulty must be intensified in teaching the elements of such subjects to young children to whom life is still something of a wonderland and who have no inherent conception of the idea of natural law; indeed, to some people it may be a matter of doubt as to whether physiology can be really profitably taught to children quite ignorant of the simplest facts of chemistry and physics, and there is no doubt that lessons such as these would come more readily to a class having some such instruction. The authors, however, have contented themselves with such simple physiological explanations as are necessary for the teaching of the first principles of hygiene and in this they have been so successful that their book will be of real service to those teachers who are empowered to impart such instruction. The pictures are well planned to catch a child's attention.

*A Monograph of the Culicidæ or Mosquitoes.* Mainly compiled from Collections received at the British Museum. By FRED. V. THEOBALD, M.A. Vol. IV. With 16 plates. London:

Printed by order of the trustees. Pp. 639. Price £1 12*s*. 6*d*. net.—The monographs issued under the ægis of the national museum at South Kensington are habitually worthy of the authority of that distinguished institution, and the volume before us is no exception to the rule. As Sir E. Ray Lankester states in his preface, the publication of the first two volumes of the present series in 1901, which formed the first systematic treatise on the Culicidæ, together with the sending of requests to all parts of the world for specimens, has resulted in a rapid increase of knowledge of this family. The rapidity with which the knowledge has been increased is shown by the fact that since the first supplementary volume (Vol. III. of the series) went to press in 1903 no less than 160 new species have been described. The present volume is based on an examination of some half of the 12,000 specimens received at the Museum since 1903. The British Museum trustees have recognised to the full the importance of investigating the various species of blood-sucking insects which may become the carriers of pathogenic parasites and they desire "to obtain as complete collections as possible of blood-sucking insects and arachnids from all parts of the world, with a view to the production of further monographs on such flies, fleas, bugs, lice, ticks, and acarids, as may be the agents in the spread of disease." The director of the Natural History Department invites the sending of further collections of blood-sucking insects and coloured drawings or notes upon their habits to South Kensington. The present volume is a monument of careful study and observation and the illustrations are worthy of the text. The author describes 17 anophelines as certain carriers of malarial parasites and 55 as possible carriers; eight species are responsible for the dissemination of filariasis, and one each for yellow fever and dengue. Mr. Theobald very rightly deprecates the complication of an already too confused nomenclature by the naming of new species on the sole authority of local colour variations. The work is to be completed in a further volume. It is good to see such a monograph issued from a London press as will be indispensable to foreign workers in an important field.

*The American Medical Directory.* Chicago: Published under the official auspices of the American Medical Association. Pp. 1482. Price 35*s*. net.—The compilation of a directory dealing with so large a body of men as the medical profession must afford a task of great labour in so compact a country as our own; the performance of such a duty for so scattered an area as the United States is a task that probably only those diligent persons who have been engaged upon it can adequately appreciate. The present work contains, in addition to the official list of legally qualified practitioners in the United States, complete information regarding the laws regulating the practice of medicine and particulars as to the constitution of the State boards of health and the medical examining boards and colleges. It is somewhat curious to British eyes to see certain of the names followed by initials which indicate that their owners belong to the cult of "Homeopaths" or "Eclectics" respectively; there is an archaic flavour about the latter title which is at pleasing variance with our notions of American cast-iron modernity. The book is well printed and we do not doubt will form an indispensable work of reference to all who are interested in American medicine. The information concerning the laws controlling practice in the individual States is very valuable.

## MAGAZINES AND JOURNALS.

*The Edinburgh Medical Journal.*—A good deal of attention has recently been directed to the question as to the value of preparations of formic acid in the treatment of disease. An article in the June number of this magazine, written by Dr. Claude B. Ker and Dr. David H. Croom, on the use of formic acid in diphtheria, concludes with the expression of opinion that the results obtained in the direction of warding off cardiac failure are distinctly encouraging. Mr. W. H. Battle writes on traumatic rupture of the intestine and insists on the importance of early operation; and Mr. Alexander Don emphasises the value of x ray examination in the diagnosis of tuberculosis of bones. An interesting note upon the application of Bier's treatment by passive congestion to acute inflammations, written by Mr. D. M. Barcroft, calls attention to the value of a procedure that is perhaps not sufficiently practised in this country: in gonorrhœal affections of joints it would appear to be almost a specific, and it is available in many other conditions.

*The Scottish Medical and Surgical Journal.*—The June number of this journal opens with an article by Dr. C. J. Lewis upon the influence of meteorological conditions on the distribution of bacteria in urban atmospheres. The author shows the value of rain in purifying the air and also the contrary influence of high atmospheric pressure in increasing the number of organisms present. Dr. Claude B. Ker writes in praise of intubation in diphtheria, especially if used in connexion with nasal feeding, and Dr. W. T. Ritchie describes and discusses the various forms in which an extra systole of the heart may take place.

*The Dublin Journal of Medical Science.*—Dr. G. A. Gibson's learned account of our debt to Ireland in the study of the circulation is concluded in the June number. The present instalment deals with the importance of physiological incompetence of the right auriculo-ventricular valve and with some modern studies on the subject of heart block. Dr. W. G. Harnett writes on early diagnosis of perforation of a gastric ulcer and Dr. C. H. McComas notes some practical points in the study of disease in infants.

*The Medical Chronicle.*—Two articles of more than ordinary interest appear in the June number of this magazine. Dr. W. B. Heywood contributes an abstract of a thesis dealing with the subject of albuminuria in adolescents. He analyses much recent literature and records some observations of his own on the albuminuria which follows scarlet fever. He concludes that about 50 per cent. of children who suffer from this disease pass urine containing some albumin and that this condition may persist for some years. Most of the cases seem to recover ultimately. Dr. Frank E. Tylecote discusses the symptoms of meningism or transient meningeal irritation and its diagnosis from meningitis proper. He also considers the information to be obtained from lumbar puncture in such cases and the causes of improvement following this procedure, but comes to no certain conclusion on this last point. Mr. Philip R. Wrigley records a case of strangulation of the vermiform appendix in a hernial sac.

# New Inventions.

## MODIFICATION OF BARTRINA'S PROSTATIC CATHETER.

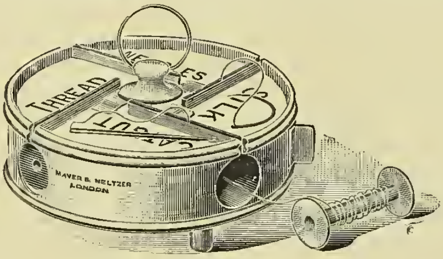
HAVING a case of left lateral hypertrophy of the prostate necessitating the routine use of a catheter, and finding that ordinary catheters, à boule and coudé, were passed with difficulty and were apt to draw blood, I tried the catheter devised for such cases by Dr. J. M. Bartrina of Madrid, an account of which is given in THE LANCET of May 16th, 1903. This instrument is oval in section, with the long diameter vertical, O, and the beak is curved on the *edge*. I did not find this catheter to pass more easily than the others and noticed that immediately it entered the urethra it turned in my hand to the extent of a quarter of a circle, thus deflecting the beak to the same extent. The cause of this deflection is obvious when one considers the anatomical fact that, although the meatus urinarius is a vertical slit, I, the urethra itself in its entire length, including the prostatic portion, is a tube having its walls in contact and presenting on section a transverse slit, ▬, the prostatic portion being somewhat curved with the convexity upward, ⌒. Believing, however, that an oval instrument might well possess an advantage over a round one, provided the long diameter of the oval was transverse instead of vertical, I had catheters specially made for me in France by the courtesy of Messrs. Allen and Hanburys. On trying one of these in my case I found it was passed with perfect ease, both by myself and my patient who volunteered the opinion that he had never passed a catheter so easily and comfortably, nor did it cause bleeding. The catheter, thus modified, is of elastic gum, silk web, coudé, oval, flattened transversely, ⬭, with the beak curved on the *flat*.

It may be had in 11 sizes (12–22) from Messrs. Allen and Hanburys, Wigmore-street, W.

Driffield, East Yorks. A. T. BRAND, M.D., C.M. Aberd.

## AN APPARATUS FOR STERILISING SUTURES, LIGATURES, AND NEEDLES.

THE apparatus shown in the accompanying illustration was exhibited at the Australasian Medical Congress held in Adelaide in October, 1906, and attracted favourable notice. My aim has been to design an apparatus in which the sutures, ligatures, and needles could be sterilised simultaneously either in boiling water or by steam, so as to be fit and ready for use in the surgeon's instrument tray and be handled by him only. The apparatus has been used by me at all my operations during the last six months and it fulfils its purpose admirably. The structure consists of two parts, an outer part and an inner part. The outer part is a cylindrical copper dish six inches in diameter and one and three-quarter inches deep. The bottom is perforated by a small central hole and three slots. Four holes, three quarters of an inch in diameter and equidistant, are cut in the side of the can. From the centre of the upper border of each of these holes a slot one-eighth of an inch wide is cut and extends through the upper edge of the side of the can. The inner part is also a flat cylinder of copper. Attached to the bottom are three legs half an inch in length, and these extend through the slots cut in the floor of the outer part. The top is divided into four compartments into which exactly fit four pieces of white opal glass. These are held in place by a central screw with a ring attached. The sides of both parts are perforated by four circular holes three-quarters of an inch in diameter. From these openings four small cylinders, two and a half inches long and three-quarters of an inch in diameter, extend to the centre of the inner part. The sides of these cylinders are so bent that they are brought out through the top of the inner part and form four radiating slots, thus dividing the top into the four compartments previously mentioned. By means of a small flange the outer part can be made to revolve round the inner for a distance of three-quarters of an inch, the legs on the inner, which work in the slots on the bottom of the outer, acting as stops. Thus, when the lateral openings of both parts coincide the small cylinders are open and when the outer is made to revolve round the inner they are shut.



The apparatus is used in the following way. The small cylinders being open, metal or glass reels on which the ligature and suture material is wound are inserted into them, the loose end of the material (silk, thread, &c.) is brought through the slot in the side of the outer part and thus comes to lie in the long narrow slot in the top of the inner. The loose end is then threaded on any needle the surgeon wishes and the needle laid down in one of the compartments. The thread on each reel may be similarly threaded. Usually, however, I only have two of the needles threaded and extra needles are placed in one of the compartments. The other two reels are then used for ligatures only. The ends of the cylinders are now closed and the apparatus is ready for sterilising. This can be done by boiling it or putting it in a small kettle and sterilising it by steam. After this it is placed in the instrument tray. Should the surgeon use catgut, reels with this material wound on them are now inserted into the cylinders, for, of course, catgut does not stand boiling or steam sterilisation. Whatever material is used, the reels revolve easily in the cylinders and the ligatures, sutures, &c., are cut off by the surgeon as he requires them. It is often useful to have two or three needles on one thread. The needle closest to the loose end is held by its eye between the right forefinger and thumb to prevent the thread slipping out, which is then drawn through the eyes of the remaining needles held between the left forefinger and thumb and cut off at the required length. These remain threaded for the next suture that may be required. My needles are always kept in lysol between operations and do not rust when sterilised in this apparatus. I do not allow instruments, needles, ligatures, &c., to be touched by anyone but myself or my assistant. By means of this apparatus all ligatures, sutures, and needles are ready for use when I start to operate, much time is saved, and an additional pair of hands and a source of infection are dispensed with. It can be made of any size and, if desired, the number of small cylinders and compartments increased. The opal glass is marked "silk," "catgut," "needles," &c., to enable each kind of material to be kept in its own proper compartment. The apparatus is nickel-plated throughout and is easily taken to pieces and cleaned.

Messrs. Meyer and Meltzer, of London and Melbourne, and Messrs. Fischer, of Adelaide, have carried out my design admirably.

H. SIMPSON NEWLAND, M.S. Adel., F.R.C.S. Eng.,
Assistant Surgeon, Adelaide Children's Hospital;
late Surgical Registrar, London Hospital.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, July 4th, 1829.

### PRESERVATION OF THE ERGOT OF RYE.

*To the Editor of* THE LANCET.

SIR,—If a small piece of camphor be put into a bottle, containing ergot of rye, reduced to a fine powder, the peculiar properties of this invaluable remedy will be retained, unimpaired, for a considerable length of time, two or three years at least.

As I am not aware that this fact is generally known, I shall feel obliged by your honouring it with a place in the columns of your very valuable and talented Journal.

I remain, Sir,
Your obedient Servant,
S. F. G.

38, Manchester Street,
Manchester Square.

### NEW FOOD AT THE FRENCH HOSPITALS.

THE use of gelatine from bones is becoming very general in the French hospitals as an article of diet. In La Charité, upwards of a thousand rations a day are produced by means of a steam apparatus. The patients are said to approve of it much, as it is made very pure, and may be flavoured in any way that is wished.—*Lit. Gaz.*

DEATH FROM ELECTRIC SHOCK.—The *Electrical Engineer* of June 28th gives some particulars of a case in which a man was killed in a Fifeshire colliery through coming in contact with a wire rope which was attached to a cable connected with an electric coal-cutter. Electrical engineering experts from various parts of the country were present to give evidence. The vulcanised shield of the cable entering the motor casing had become worn through, thus allowing the live wire to come into contact with the metal of the machine casing and thereby charging the whole machinery. It was stated that an accident of the kind had never before happened in a similar way.

# THE LANCET.

*LONDON: SATURDAY, JULY 6, 1907.*

## The Imperial Cancer Research Fund: Fifth Annual Report.

Five years have now elapsed since the foundation of the Imperial Cancer Research Fund and though no definite information has been obtained either as to the etiology or the treatment of cancer, yet much good and useful work has been accomplished and our general knowledge of the distribution and the laws of growth of malignant disease has been advanced. In many parts of the world there is great activity in cancer research and Dr. E. F. Bashford, the superintendent of the Research Fund, has done well to keep himself in touch with the more important of the movements. He attended by invitation the Toronto meeting of the British Medical Association and took part in a discussion on the subject of cancer; and subsequently he visited many of the laboratories in the United States, including the Rockefeller Institute, in which cancer investigations are being carried on. Later Dr. Bashford was present, as the representative of the Imperial Cancer Research Fund, at the International Cancer Congress held in Heidelberg and Frankfort. Some of the German representatives of this Congress have lately proposed the establishment of a permanent international conference on cancer with its headquarters in Berlin. On the whole we are inclined to agree with Dr. Bashford that at present little advantage is to be gained by such a conference and that more good will be attained by encouraging active intercourse and exchange of material between investigators who are studying cancer in the laboratories of different countries. This interchange of material is of great importance and we are glad to learn that the Imperial Cancer Research Fund has provided material for investigation to numerous other workers both in this country and abroad.

Our chief hopes of the attainment of an exact knowledge of cancer depend, it is generally acknowledged, on experimental investigations. Statistics have done their share and it is probably useless to expect that very much more information of importance will be obtained from these. Statistics, however, have given us some striking facts, the true meaning of which will be known only when the problem of the etiology of malignant disease has been solved. It is certain that some allowance must be made for want of accuracy in all statistics but even when more than enough allowance has been made for this source of fallacy we find many strange facts which must be of great importance. For instance, we find that of 1589 cases of malignant disease reported from India, only in 76 cases did the growth affect internal organs, while in 1513 cases the surface of the body was the part involved. It is clear from even a moment's consideration that this fact points to a cause coming from outside and in most cases not entering the body with the food. We learn further that in 335 persons afflicted with cancer the diet was vegetarian and in 608 persons the diet was mixed but flesh for the most part. It is obvious, however, that these facts tell us little, for we are not told what was the relative proportion of vegetarians and those using a mixed diet, and therefore the figures are useless. It is of interest to note that by statistics we learn that the incidence of cancer, as recorded for different sites of the body, varies, so that in some parts of the world malignant disease is especially liable to attack special regions of the body; for instance, in the native races of Africa melanotic sarcoma appears to be especially frequent and it always attacks the soles of the feet. This fact points strongly to some cause arising from the ground and attacking the bare feet of the natives. In India, as we have already stated, the surface of the body seems to be especially liable to be attacked and in Kashmir epithelioma of the anterior abdominal wall occurs with a constancy met with nowhere else. Peculiar forms of chronic local irritation met with in native races associated with native customs or religious rites are reported to affect those portions of the body which correspond to the sites on which the majority of cancers occur. These are analogous to the chimney-sweep's cancer and the paraffin and x ray cancers seen in this country. In some cases the damage to the part predisposing to the occurrence of malignant disease has been caused by a specific inflammatory condition, as may be seen in lupus and in some forms of leucoplakia of the tongue. Inasmuch as no one form of external irritant is constantly associated with the development of cancer, it is clear that the mere irritation is nothing more than a preparation for the development of malignant disease. It is evident that some intracellular change occurs which transforms a normal cell into a cancerous cell. As to what this change is we know nothing at present and in our attainment to a knowledge of that change lies our hope of a knowledge of the true etiology of malignant disease.

It will be of interest to take a brief glance at the chief experimental work on mice that has been done in the laboratories of the Imperial Cancer Research Fund. During the year 48 additional spontaneous tumours in mice have been added to those previously studied and in all 40 tumours have been successfully propagated from mouse to mouse, and among these are two fresh groups—namely, certain carcinomata of the mamma with a great tendency to hæmorrhage and certain squamous-celled carcinomata. The hæmorrhagic carcinomata are the most frequent form of cancer in the mouse and Dr. Murray, Dr. Magnus Haaland, and Mr. W. H. Bowen have been very successful in propagating them, though other investigators have failed. The squamous-celled carcinomata are of especial interest, for there can be no doubt that they are true carcinomata and thus the doubts which were expressed as to the carcinomatous nature of propagated tumours are completely dispelled. The results of the propagation of Jensen's tumours met with much opposition, as it was asserted that they were not genuine cancers. In all these transferred tumours there are seen the same alternations of periods of exacerbation and remission as occur in cancerous human beings. At times the growth is rapid and anon it seems as if all growth has ceased and even some of the tumour already formed disappears. All who have had much experience of carcinoma in man will agree that these variations in the growth of cancers occur quite apart from any method of treatment adopted and it is this lack of uniformity in the progress of malignant new growths that is mainly responsible for the curative reputation of many drugs. In propagated cancers in mice there is marked variation in the degree of proliferation and while in some cases the proliferation is greater than is ever seen in spontaneous cancers, in others the rate of growth hardly exceeds that of normal tissue. Attempts to cultivate tumour cells outside the body, even when the organic fluids of the mouse have been employed, have proved fruitless and it is only in the responsive living environment of the mouse's body that the vitality and peculiar energies of the tumour cells manifest themselves. The favourable conditions for growth presented by normal mice can be altered to the disadvantage of the tumour cells, so that they are unable to proliferate. The soil can be rendered unsuitable for the growth of transplanted tumour cells in many ways: as when a mouse has recovered from a previous successful inoculation of cancer tissue of its own species, or when previous inoculation has not been successful but has led to the absorption of cancerous tissue, or after the previous inoculation of the blood of a normal mouse. Some infective diseases also hinder the growth of inoculated cancer tissue. The protection produced by the spontaneous absorption of tumours, which had grown for a time, is most efficient against inoculations of tumours of the same strain as that which had been absorbed; it is less for tumours of different strains and may even be wanting. As to the mechanism of the protection we are in doubt but the fact that the protection produced by mouse cancer and mouse tissue is not produced by cancer or tissue of other species of animals shows that the cells implicated are mouse cells, having nothing in common with the cells of cancers of other animals except their mode of growth. Satisfactory evidence is still wanting of the existence in the serum of protected animals of substances directly harmful to the cancer cell. Many "cancer cures" have been tested during the past year; unfortunately it has proved impossible to attribute any curative value to even one of them, in so far at least as regards the inoculated carcinomata of mice. We are glad to see that the financial aspect of the Fund is much more satisfactory than when we reviewed the progress of its work last year. Then we had to deplore the fact that almost from its foundation the annual receipts of the Fund had not sufficed to meet the annual expenses. During the past year not only have the receipts exceeded by £1200 the receipts of the preceding year, but a munificent donation of £40,000 has been received from Mr. and Mrs. BISCHOFFSHEIM. The amount is invested and the dividends are to be applied to the general work of the research. This is not the first donation from this source, for at its beginning Mr. BISCHOFFSHEIM gave £5000 to the Fund. With such happy auguries for the financial success of the Imperial Cancer Research Fund we cannot doubt that the Fund will be able to carry on the good work of research and though it is impossible to foretell how soon the mysteries of cancer will be revealed we shall feel that all that is possible is being done to bring to light the secrets of malignancy.

# The Annual Report of the Council of the Coroners' Society.

THE report of the council of the Coroners' Society for the year 1906-07 lies before us and if it contains matter primarily intended for the perusal and the guidance of the coroners for whose benefit it is issued there is little in it which might not be read with advantage by all members of the Government or of the Houses of Parliament desirous to promote useful legislation in the public interest. The work of the coroner, in deciding whether an inquest shall be held upon a body lying within his jurisdiction, and in the proper conduct of the inquest, including the obtaining of necessary evidence, is in the main regulated by a statute passed 20 years ago. Other Acts since the Coroners Act, 1887, may have increased the number of cases to be inquired into but have done so without rendering more explicit the vague definitions and scanty directions of the original Act which was based upon predecessors passed when medical science and the activity of the police were alike undeveloped, when the protection of the worker at his work had not exercised the minds of the benevolent to any considerable extent, when the importance of accurate statistics concerning the causes of mortality was not realised, and when it was only thought necessary to sketch in outline the functions of an official whose ancient powers and importance had been considerably curtailed. The coroner is not a judge whose decisions are liable to constant discussion and revision in the High Court of Justice but his position is not on that account a bed of roses. In the fulfilment of his duties he is naturally exposed to the hostility of individuals, honest and dishonest, or he may incur the disapproval of the local authority responsible financially for his disbursements. At any time his acts or omissions in the exercise of his duties may be brought to the notice of the Lord Chancellor or of the Home Secretary; and whether he has done rightly or has fallen into one of those errors to which all are liable in the exercise of a vaguely defined discretion, the affair will probably cause him considerable trouble and anxiety. For his guidance in matters upon which he is unable to obtain the direction of the Secretary of State the Coroners' Society will supply a member in doubt with a useful opinion based upon the experience of others and upon authorities which may be beyond his reach. The report to which we have referred contains many examples of opinions thus given which, as has been suggested, not only elucidate the points at issue but which also illustrate the need for a new and comprehensive Coroners Act. The unsatisfactory nature, for example, of the clause which defines the occasions on which inquests should be held is shown by many examples, including the suggestion that its strict interpretation might have led to an inquest being held upon any of the bodies brought over to England for burial after the recent terrible wreck of the *Berlin* or upon a body similarly transported home after a fatal accident in the Alps.

Again, when a single accident produces many deaths the question how many "inquests" are to be held is of importance in regard to the exact procedure to be adopted, and the results of such an accident may again be complicated for the coroners concerned if, through the occurrence taking place on the confines of one or more districts, bodies requiring inquests lie within different jurisdictions. The practice to be adopted on such occasions may be suggested by the law officers of the Crown advising the Home Office or by the council of the Coroners' Society but does not have its origin in any prevision on the part of the legislature. The dispute arising with regard to the holding of post-mortem examinations in a coroner's district in London has been frequently referred to in these columns. It illustrates in a striking manner the looseness and insufficiency of the sections providing for medical evidence in the present Act. One of the undecided points connected with the calling of medical witnesses at inquests, to which the report under consideration gives some prominence but upon which it finds a difficulty in pronouncing an opinion with confidence, arises out of the following conditions of frequent occurrence. A medical witness is summoned by the coroner to give evidence as to the cause of a death which does not need for its elucidation more than the external inspection of the cadaver without examination of the internal organs or of the brain. The medical man may be desired to make such an inspection by the coroner or he may do so from a conscientious desire to qualify himself fully for the giving of his evidence. Should he then be entitled to a fee of two guineas provided by the Act for a "post-mortem examination" or only to the guinea of the ordinary medical witness? According to the advice given by the council of the Coroners' Society an external inspection of the body is not a post-mortem examination within the meaning of the Act, even when ordered by the coroner. The report is careful to point out how doubtful the question is and to suggest the necessity for tact and discretion to avoid disputes on the subject and a possible deadlock. Looking at it from the point of view of the medical man we should be inclined to differ from the view expressed and to say that the coroner ordering an examination with a view to obtain the best evidence of the cause of death should be taken to require as thorough an inspection as the case may demand, and that the question of how complete that examination should be is one which ought to be decided according to the facts of a particular case and as to which the medical witness and the coroner should be in accord. The external examination may, when properly made, be an unpleasant or a dangerous task and the examination of internal organs may be comparatively simple and free from disagreeable or dangerous circumstances. In other words, in the case of either form of examination the medical man will have a responsible professional duty allotted to him, which may be ill-remunerated by a fee of two guineas or may not. He has to "take the rough with the smooth," and those who employ him should not grumble at being obliged to do the same. The term "post-mortem examination" has not been defined or limited by the Act and to say that it may be taken to imply such an examination of a dead body as may be desirable in order to place the cause of death beyond doubt involves no straining of its natural meaning. Another important question referred to the Coroners' Society by its members during the past 12 months has arisen out of the scheduling of a number of industrial diseases as accidents under the new Workmen's Compensation Act. The council of the society is of opinion that the coroner informed of a case within his jurisdiction where death is ascribed to one of these diseases will act rightly in holding an inquest.

Naturally the questions propounded for the consideration of the council of the Coroners' Society are not all of as general interest as some of those which we have mentioned, nor are they as difficult of solution. Clearly a right answer could be given without hesitation to an inquiry as to the course to be adopted when there was the evidence of a few remains of bones, buttons, and buckles, to show that someone, probably an unidentifiable tramp, had met with his death in a cement kiln, into which presumably he had crawled for warmth and shelter. There can be no doubt that, although the coroner may not have "the dead body of a person" before him in such a collection of relics, he would be extremely unwise to decline to hold an inquest. Again, to take another instance, a deceased person had evidently died through injuries sustained by violence more than a year and a day before his death and the coroner had doubts as to what he should do. The correct, and at the same time obvious, reply was to the effect that although the period which had elapsed might save the guilty person from trial on the capital charge, the duty to inquire into the cause of a death credibly stated to be unnatural and violent was not affected thereby. Many other points of varying interest and importance are touched on in the report before us but enough examples have been given to show that difficulties are likely to perplex coroners (who by the nature of their work have already enough to occupy their thoughts) and to cause friction between them and the local authorities, or the medical profession, or the public, all or most of which might justly be removed by a carefully considered and clearly drafted Act of Parliament. Such an Act might also simplify the coroner's duties in respect of such quaint survivals as inquests upon treasure trove and might introduce a uniform system of inquiry into causes of fire not resulting in death. If it is considered that investigations should be held in the case of fires occurring in the City of London it can hardly be contended that they would be undesirable elsewhere, although possibly a better manner of conducting them might be devised. The duties of coroners, however, so far as inquests upon dead bodies are concerned, are almost indissolubly connected with the whole matter of death registration and burial, so that fresh legislation with regard to the one cannot be satisfactory unless it is undertaken in conjunction with corresponding reform in respect of the other.

## The Bacillus Paralyticans and General Paralysis of the Insane.

THAT the intelligent and successful treatment of any given disease is absolutely dependent upon a correct appreciation of its associated pathological processes and particularly of its ultimate etiological factor may be stated as a fundamental principle which is well illustrated by that condition known as general paralysis of the insane, for despite the many years during which the disease has been familiar to the neurologist, has been diagnosed, and studied, its average duration remains about two years from the onset of symptoms, and of curative treatment there is none. In such circumstances Dr. W. FORD ROBERTSON'S investigations into the bacteriology of general paralysis are deserving of the warmest praise but the importance of the subject demands that his experiments and the conclusions drawn from them should be subjected to the most rigid scrutiny. We therefore note with satisfaction the representative audience which assembled at the last quarterly meeting of the Medico-Psychological Association when Dr. FORD ROBERTSON, in conjunction with his junior colleague, Dr. G. DOUGLAS MCRAE, presented a communication on Further Bacteriological and Experimental Investigations into the Pathology of General Paralysis. The substance of this paper may be briefly summarised.

A number of strains of diphtheroid bacilli, all "Neisser-positive," which had been isolated from cases of general paralysis or of tabes dorsalis, were tested as to their fermentative activities in various carbohydrate media. By means of their several reactions these bacilli were differentiated into two distinct species, named respectively bacillus paralyticans longus and bacillus paralyticans brevis, and to them severally and collectively Dr. FORD ROBERTSON and Dr. MCRAE ascribed specific pathogenic properties. Each of these species was in some instances virulent for the mouse but never for the guinea-pig; while by the prolonged feeding of rats with cultivations of these bacilli symptoms and lesions similar to those of general paralysis of the insane were produced in the rodents. Discussing the question of the portal of entry Dr. FORD ROBERTSON and Dr. MCRAE distinguish between general paralysis of the insane, in which the infective focus is situated in the buccal and naso-pharyngeal mucosæ, and tabes dorsalis, where the point of invasion is the whole of the genito-urinary tract and the lower part of the alimentary canal; and they affirm that in these situations they have obtained evidence of actual tissue invasion, as opposed to mere contact, by these particular bacilli. Reference was also made to the immunisation of the sheep to the bacillus paralyticans and to the associated rise in the phagocytic index of the serum observed during the process. In the discussion which followed, and in which some well-known bacteriologists as well as clinicians took part, the opinion was almost universally expressed that although the disease was in all probability primarily a toxæmia, yet the evidence adduced by Dr. FORD ROBERTSON and his colleague was insufficient to justify the claim to specificity advanced on behalf of the bacillus paralyticans, or even to demonstrate the bacterial origin of the toxin. Indeed, one observer, Dr. GEORGE M. ROBERTSON, who detailed some experiments supporting Dr. FORD ROBERTSON'S original statements that a diphtheroid bacillus was invariably present in general paralysis, stated that he had now observed this association in nine out of ten cases examined in the Stirling District Asylum—the organism being isolated from the peripheral blood in no less than seven cases—but that in no case was the organism isolated identical with bacillus paralyticans. Then, too, those criteria of specificity advocated by our own countryman, HENLE, but more generally referred to as the "postulates of KOCH" were freely invoked by many of the speakers, and the observations of EYRE and FLASHMAN recorded a few years back, which showed that the presence of diphtheroid bacilli in the buccal and naso-pharyngeal mucosæ was not peculiar to the general paralytic but could be observed in similar situations in patients suffering from other nervous lesions and in the sane, were referred to; and it was pointed out that diphtheroid bacilli were fairly common saprophytes; were found in some articles of food, e.g., milk, and in numerous situations on and in the body, in health as well as in disease, particularly in the genito-urinary tract; and were frequently encountered in morbid material side by side with micro-organisms which were of themselves capable of producing the special lesions with which they were associated.

This ubiquity of diphtheroid bacilli, many of which are indistinguishable from the organisms isolated by Dr. FORD ROBERTSON, actively militates against their suggested possession of pathogenetic properties, and in this connexion it may be remarked that even tissue invasion by purely saprophytic bacteria is not unknown and we might instance the condition known as xerosis conjunctivæ where diphtheroid bacilli undoubtedly invade the membrane and may be demonstrated in sections throughout the entire thickness of the altered conjunctiva, but in spite of this fact it is now generally conceded that the xerosis bacillus plays no part in the causation of the affection. Again, it is assumed by Dr. FORD ROBERTSON that the elaboration of bacteriolytic substances in response to the introduction of cultivations of bacillus paralyticans into the animal body necessarily denotes the possession of pathogenetic properties by that bacillus, regardless of the fact that inoculation with practically any and every bacterium, virulent or harmless, will stimulate the formation of special antibodies. Enough has been said to indicate the present open-minded attitude of the profession towards these researches and we have no doubt that Dr. FORD ROBERTSON will be stimulated thereby to further investigations directed possibly in the first instance towards the removal of the objections now urged.

◆

## King Edward's Hospital Fund for London.

THE Bill for the incorporation of King EDWARD'S Hospital Fund for London was ordered for third reading on Monday last, July 1st, in the House of Commons, after a debate of the greatest interest to the public at large as well as to all hospital authorities and to the medical profession. The debate turned largely upon the proper constitution of the Council of the Fund. It will be remembered that the original Bill provided that His Royal Highness the PRINCE of WALES should continue the position of President of the Fund in the position of President of the corporation during the pleasure of the Sovereign, and that every succeeding President should be appointed and hold office during the pleasure of the Sovereign, the whole management of the corporation thus remaining with the President, or through him with the Sovereign. The direction, control, and management of the affairs of the corporation and the application of all moneys, property, and income were to be vested in the President who had unlimited powers to appoint and to remove at pleasure all officers and members of the council, to vary and to rescind all regulations and by-laws, and "generally to do or direct to be done all acts and things which in his discretion he might deem conducive to promoting and effecting the objects of the Corporation." As soon as the text of this Bill came into our hands we pointed out that, while we were in absolute accord with the high respect for the throne and for the wise and enlightened monarch now ruling over us, shown throughout the Bill, we considered that this respect might have been evinced without casting upon the occupant of the throne responsibilities which in conceivable circumstances might be most heavy and irksome. We made the obvious point that our present Sovereign succeeded as a man of mature judgment, with wide and cultivated sympathies, and with a knowledge of men and things which would have won for him high distinction in whatever position fate had placed him; and we realise with alacrity that in his heir the citizens of the British Empire must feel that they possess one worthy to discharge the tremendous task that in the course of nature will devolve upon him. But we have felt ever since the Bill for the incorporation of the Fund was first made public that, although future Sovereigns might be expected to emulate the example of His Majesty the KING and of His Royal Highness the PRINCE of WALES by bringing to the conduct of public affairs the same intelligence, fairness, and assiduity, this supposition must not be treated as a certainty. We also considered that it was not fair to leave the President or the Sovereign, independent of all assistance, to exercise an unfettered judgment in matters always difficult and liable at any moment to become complicated or technical. This view was independently expressed by the British Medical Association and largely indorsed by the lay press. As might be expected, it has been met with absolute and gracious approval by the illustrious persons concerned, and valuable concessions have accordingly been made.

On the order for the consideration of the Bill Dr. V. H. RUTHERFORD, the Member for the Brentford division of Middlesex, moved the recommittal of the Bill with an instruction that clauses should be inserted providing for the constitution of a council for the Fund upon representative lines. The honourable Member suggested that the public requirements would be met if the elected members represented one from the City of London, one from the London County Council, one from the University of London, one each from the Royal Colleges, two from the British Medical Association, and one each from the Metropolitan Hospital Sunday Fund, the Hospital Saturday Fund, and the Central Hospital Council. The amendment embodied a view which we had already advocated—the view that the contribution of the medical profession to the efficiency of the hospitals and to the carrying out of their work should be reckoned side by side with, and in combination with, the support of the ever-generous public. But Dr. RUTHERFORD'S arguments did not find favour with the House nor were all those who supported him, among whom none of our medical legislators were to be found, happy in their words or able to discuss the question from any broad scientific position. The Attorney-General, in reply to Dr. RUTHERFORD'S contention, pointed out to the House the extent to which the constitution had already been altered from the point of view of safeguarding public interests, and speeches by the Prime Minister, by Mr. BALFOUR, and by Sir WILLIAM COLLINS made the withdrawal of the amendment a certainty. The Attorney-General explained that a provision had already been introduced that on the termination of the tenure of office by the present President it would be necessary for the Lord Chancellor, the Prime Minister, and the Governor of the Bank of England for the time being to concur in the recommendation of some member of the Royal Family whom they considered qualified to accept the post now occupied by the PRINCE of WALES, the member of the Royal Family being the son, grandson, or brother of the Sovereign. There is therefore assurance that three persons holding high and responsible public positions must be united in recommending a qualified President, while if they do not concur the duties of President will devolve into the hands of three persons; there would no longer be a President but three governors. Sir LAWSON WALTON went on to show that since the Bill had left committee an important clause had been added limiting the individual power of the President so that on his own part and on his own authority he could not deal with the distribution, investment, or application of the property. He would be controlled by the majority of his council in all matters relating to the investment, expenditure, application, and distribution of money. The speaker added, amidst the cheers of the House, that while the power of the President would thus be limited on his own motion to the collection of money, the name of the Royal Family would be connected with the appeal to the public for funds, and that it was this association which had created the Fund and given to it its magnificent success. He considered that in any scheme for hospital management there would inevitably be a large representation of the medical element, and, of course, at the present moment medical men of the greatest eminence are upon the Council of the Fund. He evidently saw difficulty, also, in the way of securing representation of the various London hospitals upon the body which would distribute money annually to these hospitals—a point made later by Sir WILLIAM COLLINS. Although we do not consider that this difficulty would really be very great, we realise the advantages of not fettering a young institution with too strict and complicated a constitution. It has to be remembered that what is done by statute can only be undone by statute.

The Prime Minister followed upon the same lines of general approval of the Bill as amended in committee. He pointed out the conspicuous success of the Fund, which has distributed money at the rate of £100,000 a year, with a percentage of expenses of 1·35 per cent. He emphasised the representative character of the existing Council and his belief that there would always be a desire to place upon the Council persons similarly qualified to give the best advice to the President. He added that a further concession would be made to the desire that the financial control of the Fund should be above all reproach, and he gave notice of an amendment that the accounts of the

Fund should be annually audited by an auditor nominated by the President of the Local Government Board, the Board to fix his remuneration. Mr. BALFOUR hoped that the speech of the Prime Minister would enable the House to come to a unanimous vote and alluded to the fact that Dr. RUTHERFORD'S amendment asking for a small representation of the medical profession had received its chief support from a Member of the House who evinced distrust of that profession. This was unfortunately the case and, taken with the absence of backing from the medical members of the House, doomed Dr. RUTHERFORD'S amendment to failure. The wish of the House was unmistakeable that, at present at any rate, the medical profession should not have statutory powers of representation upon the Council. In the circumstances we would ask the medical profession to believe that the Council of King Edward's Hospital Fund for London will discharge its duties in advising the Sovereign or the President, in the future as in the past, with every regard for our profession. By its increased powers this Council has become a public guarantee of the sound financial control of the Fund, and the representation of the medical profession which now exists in its body may be reasonably expected to continue.

# Annotations.

"Ne quid nimis."

## PRESENTATION OF THE FREEDOM OF THE CITY OF LONDON TO LORD LISTER.

ON June 28th the City of London honoured Lord Lister and her own freemen by entering upon the roll of that distinguished company the name of Lord Lister. It was a matter of congratulation that the council was able to make such arrangements as enabled the illustrious surgeon, though in a weak state of health, to attend in order to be presented personally with the freedom. He was welcomed by a distinguished gathering which included many well-known names in medicine and surgery and representatives of all the chief official bodies of the profession. The freedom was presented in a golden casket of extreme beauty, the official words with which the honour was conferred being: "In recognition of his eminence as a surgeon, and of the invaluable services rendered to humanity by his discovery of the antiseptic system of treatment in surgery, whereby so great a progress in medical science has been achieved, so much suffering has been alleviated, and so many valuable lives have been prolonged." The whole proceedings were marked with the greatest enthusiasm and the honour done to our famous leader must be felt by all members of the medical profession as one done to ourselves, our calling, and our aspirations. This note was struck in the opening sentence employed by the City Chamberlain, Sir Joseph Dimsdale, in the address admitting Lord Lister to the freedom, when he recalled the fact that in 1803 the same honour was paid to Dr. Edward Jenner, "whose name would ever be associated with the discovery of vaccination and whose researches superseded the system of inoculation successfully employed a century ago by Dr. Fothergill and Dr. Dimsdale" (the latter, we believe, being the speaker's eminent relative). Sir Joseph Dimsdale proceeded to deliver an eloquent summary of the blessings to mankind that had followed upon the new era of surgery heralded by Lord Lister's discoveries and their practical application. To medical men this is an old story, but, like some of the beautiful stories of our Scriptures, we do not weary of the repetition. It gives us a sense of the grandeur of our avocation to feel that one of us, by the application of genius and prescience, by untiring industry, and by the bravest powers of self-criticism, should have been able to alter, and to alter radically, the existing relation of man to suffering and of life to death over the whole world. Never has the freedom of the City of London been more rightly bestowed, never has the foremost civic power in the world more honoured itself in honouring a new adherent.

## THE WORKMEN'S COMPENSATION ACT: MEDICAL MEN AND THE BOROUGH COUNCIL OF WESTMINSTER.

WE have before us a report made to the borough council of Westminster by a joint sub-committee of its works and highways committee dealing with the best method of meeting the council's responsibility for its injured and sick workmen with special reference to the Workmen's Compensation Act. Whilst sympathising with any municipal effort to keep down the expenditure of the ratepayers' money, we cannot congratulate the borough council of Westminster on the means it has in this instance recommended, for we hardly remember to have seen a more shameless and unblushing instance of the time-honoured and simple money-saving principle of "Exploit the Doctor." It appears that Councillor J. P. Wallis has been at pains to discover the average sum paid by friendly societies to their medical officers, and this for attendance, medicine, and medical certificates he puts down as 4*s.* per man per annum. He suggests that this would be an adequate basis of payment to make for the council's workmen who live within a three miles' radius of the city hall, whilst a further 2*s.* should secure these benefits for those living beyond that radius. It is reckoned that 750 men would come under the former class and 250 under the latter, making a total annual expenditure of £225. We now quote verbatim the next section of the report which deals with the present arrangement.

> By the council's present system a workman in case of illness or accident is required to obtain weekly medical certificates from a district medical officer appointed by the council before being paid sick or accident pay. The cost of these certificates (2*s.* 6*d.* each) is borne by the council, but the workmen themselves defray the expense of any necessary medical treatment, medicine, &c. The cost to the council for medical certificates supplied to workmen during the year ended the 31st March, 1906, was £303 17*s.* 6*d.*, and during the year ended the 31st March, 1907, it was £220 7*s.* 6*d.* To this must be added the cost of printing, postage, and the time of the staff taken up in dealing with the certificates.

We are informed that the average number of sick men per week is 50 and on the new scale it is proposed to pay 86*s.* 6*d.* a week for the medical care of these men. It appears, moreover, that hitherto the council has paid an honest fee for the certification of its sick workmen but that it has so fallen from grace that now it is proposed to obtain certificates, medicine, and treatment for a less sum per annum than it has hitherto paid for the certificates alone. The justification for this proposal is an aspersion on the *bona fides* of the medical officers who have served it under the old scheme. The report states that "the duty of the medical man being confined to the issuing of weekly certificates at 2*s.* 6*d.* each"—nothing is said about the preliminary examination—"there is no inducement to pronounce a man fit for work at the earliest opportunity, as there would be were the medical man also answerable for the treatment of the patient, and were the remuneration an inclusive fee per annum. In the case of the men, whilst we are not aware that malingering has been practised to any extent, it is rendered easy, if not encouraged, by the present system." In plain English, at present the medical men will certify a workman as unfit to work for longer than is proper in order to pile up fees, whilst the new system is calculated to induce a man to scamp his work. It would be hard to conceive a more unfounded accusation or a more unjust proposal. We greatly regret to record that the council adopted the principle put forward by its works and highways committee that it shall appoint such a number of practitioners as may be necessary for the purposes of this very shabby piece of contract practice. We trust it will find more difficulty in filling the posts than it appears to anticipate.

## THE BIRTHDAY HONOURS.

OF the 14 medical men who have been the recipients of honours on the occasion of the King's Birthday ten are members of either the naval or military medical services, while four belong to the civil branch of the profession. Of these latter, one is a Governor and Commander-in-chief of a British colony. Two knighthoods have been conferred on medical men—namely, Mr. Henry Rosborough Swanzy, F.R.C.S. Irel., and Mr. Thomas Boor Crosby, M.D. St. And., F.R.C.S. Eng. Sir Henry Swanzy is President of the Royal College of Surgeons in Ireland and late president of the Ophthalmological Society of the United Kingdom. He is surgeon to the Royal Victoria Eye and Ear Hospital, Dublin, and ophthalmic surgeon to the Adelaide Hospital, Dublin. Sir H. Swanzy's contributions to the literature of ophthalmology are many and do not call for any detailed notice on our part, for the value of his ophthalmological work is well recognised. Alderman Sir Thomas Crosby is a sheriff and justice of the peace for the City of London. The names of eight medical men appear in connexion with the most honourable Order of the Bath. Inspector-General Herbert Mackay Ellis, K.H.P., director-general of the medical department of the Royal Navy, receives a Knight Commandership of the Order, whilst Colonel Charles Henry Beatson, I.M.S., Colonel George Deane Bourke, R.A.M.C., Deputy Inspector-General Thomas Desmond Gimlette, R.N., Surgeon-General Francis Wollaston Trevor, A.M.S., Surgeon-General Thomas Tarrant, K.H.P., A.M.S., retired; Deputy Surgeon-General Edward Malcolm Sinclair, late A.M.S., retired; and Deputy Surgeon-General Alfred Eteson, I.M.S., retired, are made Companions of the Order, the three last named receiving the honour in connexion with the fiftieth anniversary of the Indian Mutiny. Sir William MacGregor, K.C.M.G., C.B., Governor and Commander-in-Chief of Newfoundland, who is an M.D. of Aberdeen, has been promoted to a Grand Commandership of the Order of St. Michael and St. George. At one time he held resident appointments at the Glasgow Royal Infirmary and at the Royal Lunatic Asylum, Aberdeen. He was also assistant government medical officer in the Seychelles. He has been chief medical officer in Fiji, receiver-general and administrator of the Government, and Acting High Commissioner and Consul-General for the Western Pacific, administrator of British New Guinea and Governor of Lagos. On Dr. Jean Etienne Justin Schneider, principal medical officer of the first class in the French army and late chief medical officer to the Shah of Persia and president of the Sanitary Council of Persia, has been conferred an Honorary Companionship of the Indian Empire. Surgeon-Lieutenant-Colonel Warren Roland Crooke-Lawless of the Coldstream Guards, surgeon to His Excellency the Viceroy of India, becomes a Companion of the Indian Empire. The Kaisar-I-Hind medal has been conferred upon Rai Bahadur Asutosh Mitra, L.R.C.P., L.R.C.S. Edin., the chief medical officer in Kashmir. Professor Edwin Ray Lankester, F.R.S., who has been made a Knight Commander of the Bath, though not a member of the medical profession, deserves special mention in connexion with the birthday honours. As Fullerian professor of physiology and comparative anatomy in the Royal Institution of London and as Linacre professor of comparative anatomy at Oxford he has done most excellent work, while his position as director of the Natural History Department of the British Museum has brought about a beneficent revolution in the study of natural history. The name of the Lord Mayor of London, the Right Hon. Sir William Purdie Treloar, who has been made a baronet, also must not be omitted. As president of the Metropolitan Hospital Sunday Fund and by his untiring efforts to ameliorate the sad lot of crippled children he has done good work. To all these recipients of well-earned honours we offer, on behalf of the profession, hearty congratulations. Since the issue of the Birthday Honours list the *London Gazette* of July 2nd contains the announcement that the King has appointed Sir Joseph Dalton Hooker, M.D. Glasg., G.C.S.I., C.B., F.R.S., to the Order of Merit. Sir Joseph Hooker, who is a late director of the Royal Gardens at Kew, is a retired surgeon of the Royal Navy and was surgeon and naturalist to the Antarctic Expedition of 1839–43 in the *Erebus* under Sir James Ross. From 1872 to 1877 he was president of the Royal Society. Our congratulations to this distinguished botanist and member of the medical profession upon his appointment will be shared in by members of the medical and scientific professions all over the world.

## THE REPORT OF THE EGYPTIAN GOVERNMENT HOSPITAL FOR THE INSANE FOR 1906.

WE see by the report of Dr. J. Warnock, the director, that the average number of patients during the year was 695 and that by the evacuation of certain buildings used until now by the Egyptian Army hospital the asylum will shortly consist of 812 beds. Moreover, a new asylum is to be opened in three years' time to provide for the great number of chronic insane cases which still have to be discharged to make room for acute patients. These figures are very different to the 300 beds which for many years were considered enough for the insane men and women of the whole of Egypt. Among the improvements are chronicled the addition of a female charge nurse, a qualified dispenser, and several attendants and servants, and, most important of all, the railing in of a hundred acres of desert land surrounding the asylum, which will provide sufficient airing courts. Several improvements have again been postponed for want of funds, such as the building of workshops for male patients and residences for several of the junior employees, including the night attendants. The net daily cost per patient is a trifle over 1*s.* 4*d.* Attention has been drawn by the Government to the necessity of removing dangerous weapons from the insane before conveying them to Cairo from the country districts and also to the desirability of providing those patients with clothes who are destitute of any covering. The former injunction is quite necessary when we read that out of 67 men and women admitted during the year, charged with various offences, no less than ten were accused of murder and eight with attempted murder. The whole number of admissions was 563, and among these were 12 suffering from fractured ribs, arms, leg, and jaw. The popular belief in oriental countries that imbeciles and weak-minded youths are harmless and do not require asylum care is entirely contradicted by experience in Cairo, and Dr. Warnock again draws attention to the reprehensible habit among children of teasing these unfortunates and thus provoking criminal retaliation. This class of cases requires asylum interference to save them from ill-treatment and to prevent their retaliating on their tormentors. More than half the patients admitted were suffering from pellagrous insanity, mania, or hasheesh insanity. 33 patients, mostly Egyptians, were admitted suffering from general paralysis, and all of them except one man and one woman (a prostitute) had either the signs or history of previous syphilitic infection, while 23 of them had, in addition, histories of alcoholic excess. General paralysis was responsible for 7 per cent. of the male patients admitted and for more than one quarter of the deaths. The death-rate calculated on the average number of patients in the asylum was 6 per cent. Among the causes chiefly contributing to the insanity of the admissions of the year pellagra comes first on the list, followed, after a long interval, by hasheesh (cannabis indica), and then, after another interval, by syphilis and alcohol. Narcotics were administered often at night to procure sleep, paraldehyde being the drug most frequently used; only seven patients were mechanically restrained during the year for short periods in order to prevent their removing surgical apparatus from injured parts, or to prevent their persistent attempts at self mutilation. The facts that 302 of the cases admitted were certified to be dangerous to others and that 155 had attempted or threatened to commit suicide show the violent nature of the patients sent to this asylum.

## SOME CONSOLATIONS OF A COLD SUMMER.

WE may extract after all some consolations from the cold summer which appears to be determined to remain a predominating feature of this year's meteorology. The existence of seasonal disease is, of course, well recognised and the history of vast human scourges teaches that the greatest development of diseases, such as plague and cholera, invariably occurred during the hot season. When all is said and done the cold of summer is never so bitter or so intense as is that of the winter, and the prevalence of diseases of the respiratory organs in an indifferent summer hardly counts when compared with the swollen returns of real wintry weather. Though there may be a few isolated cases of influenza in the cold summer the disease never reaches, as a rule, the scale of an epidemic as it does in the winter. The regular appearance of certain diseases with the seasons would appear to indicate that the vital activity of the body varies at different times of the year. When for some reason the vitality of the body is lowered the liability to disease is correspondingly increased. It may not be a hard-and-fast rule, but statistics certainly show a healthier condition of vitality of the human body in spring weather than in summer weather, while in the winter the vitality is neither maximum nor minimum. The causes underlying these seasonal variations in regard to bodily vigour may not be completely understood but many suggestions on these points have a scientific foundation. It must, at all events, be clear that there are agencies coexistent with the seasons which, according to the season, either sustain or lower the bodily energies. Amongst these agencies may be counted physical, chemical, and biological phenomena. The activity and growth of certain pathogenic organisms are stimulated under the conditions of a normal summer but checked under the conditions of a normal winter. In the spring, when the resistant powers of the body appear to be at their best, it is significant that the sun's rays approach the maximum in regard to actinic or chemical power, and actinic power signifies an energising quality. Later the actinic powers diminish and give way to an increased intensity of heat rays as exemplified in the sunlight of normal summer. In some ways the weather so far has borne more the character of spring than of summer and accordingly it is possible that certain pathogenic organisms may have lost their chance of prevailing over the human body. On the score of health there would thus seem to be no objection to such a condition of things provided that the weather is not excessively wet, that the temperature is not extremely variable, and that the sun shines. The continual absence of sun, perhaps, has been the worst feature of the present summer. Still, there are compensations; there have been no deaths from excessive heat, no sunstroke, no development of those diseases which are well known to flourish in hot weather, while the toilers in the town and the country have been spared the excuse that the prevalence of hot, sunny, and perhaps stifling days has put a premium on their inclination to work. These observations may afford some consolation, but should the weather in the meantime change and render them inopportune but few of us would express regret.

## THE SUTURE OF BLOOD-VESSELS.

ONLY in comparatively recent years have wounds of the large blood-vessels been treated by conservative methods to any extent. The *Johns Hopkins Hospital Bulletin* for May contains an exhaustive historical and experimental study of the subject by Dr. S. W. Watts. About the beginning of the nineteenth century lateral ligature of wounds of veins which did not interrupt the continuity of the vessel began to be adopted. But lateral ligature can be used in only a limited number of cases. If the wound is large the ligature will produce considerable narrowing of the vessel and there is also danger of slipping. Venous suture was first successfully performed in 1882 by Schede and has now come into general use. Curiously the conservative treatment of arterial wounds antedates by more than a century that of venous wounds. In 1759 Hallowell, an English surgeon, successfully closed a wound in the brachial artery by passing a pin through its edges and a thread around this. In 1889 Jassinowsky showed that arterial wounds in animals could be sutured with preservation of the lumen of the vessel. From his experiments he concluded that all recent, clean, longitudinal, oblique, or flap wounds of large vessels and transverse wounds not exceeding half the circumference should be sutured. In man arterial suture has now been performed in a number of cases. In 1902 Schmitz collected 21 cases of lateral suture of arteries, which may be classified as follows: axillary artery, seven; femoral artery, five; popliteal and brachial arteries, of each, three; and common iliac, common carotid, and internal carotid, of each, one. Experiments on animals and clinical experience show that for successful suture, perfect asepsis, a clean-cut wound which can be approximated without much tension, and careful manipulation of the vessel without much stripping of its sheath are necessary. Silk appears to be the best material. The needle should be as fine as possible; whether straight or curved depends on the location of the vessel. Continuous suture seems to be preferable to interrupted, as it is simpler and can be applied more rapidly. There is a difference of opinion as to whether sutures should penetrate the intima or not. In suturing veins it is almost impossible to avoid such penetration. By including all the coats of the vessel suture is not only simplified but made more secure. Various methods have been used for producing temporary hæmostasis—pressure with the fingers, various clamps, strips of gauze, and so on. Whatever method is used the main point is to injure the vessel as little as possible. Pressure with the fingers is the gentlest method and should be used when possible. If any leakage occurs at the site of suture slight compression will generally cause it to cease in a few minutes. As lateral suture has not been successful in large transverse wounds of vessels and in cases in which the edges of the wound were crushed or otherwise injured, attempts have been made to unite the ends of the vessel after resection by simple circular suture, by protheses of various kinds, and by invaginating one end into the other. The same methods have been used in complete transverse wounds of vessels. Circular suture of arteries of animals has not given good results; thrombosis usually occurs. Murphy of Chicago invaginated the proximal into the distal end by means of three or four double-needled silk sutures, which included only the adventitia and media of the proximal end but passed through the entire thickness of the distal end. He tried the method on the carotids of three dogs, four calves, four sheep, and once on the femoral artery and abdominal aorta of dogs. Only three cases were successful; thrombosis occurred in the others. Circular suture of veins has been performed less frequently. In 1903 Jensen performed experimental simple circular suture of completely divided veins seven times, and in four the vein remained patent. In man a few cases of circular suture of vessels have been recorded. In 1896 Murphy resected and invaginated the wounded femoral artery of a young man who was shot in Scarpa's triangle. Pulsation immediately reappeared below the invagination and good recovery followed. Dr. Watts has successfully performed experimental circular suture of the arteries and veins of animals many times. He finds that completely divided vessels can be sutured with almost uniform success if asepsis is secured.

## PUBLIC ANALYSTS AND STATE MEDICINE.

PUBLIC analysts throughout the country are rapidly being expected to make the diagnosis of disease by bacteriological methods part of their routine work. Hitherto the professional chemist had confined his study of bacteriology in its practical application to the examination of foods, water, sewage effluents, and to certain industrial processes in which the operations of micro-organisms are concerned and it was but a step further to add to his inquiries the diagnosis of diphtheria, tuberculosis, typhoid fever, anthrax, and so forth. Some municipal and county authorities see no objection to combining in one person, no doubt on the score of economy, the duties of both analyst and bacteriologist, and such appointments have been made by certain authorities and have been approved by the Local Government Board. It can hardly be supposed that such an arrangement is likely to interfere with the public interest assuming that the person appointed is competent both as an analyst and as a bacteriologist. It may be pointed out also that the person so appointed acts conjointly with the medical officer of health. The analyst who is also a bacteriologist, in fact, relieves the medical officer of health of a considerable amount of work, a relief which enables the latter to devote more time to his duties as an administrator of sanitary affairs. The carrying out of bacteriological examination with the view of diagnosing disease is, strictly speaking, no part of the public analyst's duties and must therefore be regarded as an entirely separate office and as such should be remunerated on a separate basis and on a scale commensurate with that adopted in the case of the examination of foods and drugs. It is easy enough to decide what constitutes a bacteriological examination made purely in the interests of medicine on the one hand and one which on the other is directed to settling sanitary questions connected with food, water-supply, and the disposal of sewage. In the former case the analyst supplies material which are helpful in the diagnosis of disease and the results are of value to the medical officer; in the latter he discloses the efficiency or deficiency of preventive measures. It is a sign of the times, we suppose, that this State medicine work threatens to exceed the work connected with the examination of foods and drugs. In the report, for example, of the public analyst and bacteriologist of the city and county of Bristol for the year ended Dec. 31st, 1906, we note that while 607 samples of foods and drugs were submitted for analysis during the year the work of the laboratory included nearly 3000 examinations of pathological or suspected pathological specimens, 2549 coming under the head of diphtheria, 256 under tuberculosis, 137 under enteric fever, and ten under miscellaneous examinations, including one for anthrax. This clearly means the addition of considerable work and of an enormous responsibility to the duties of the public analyst, and this increased responsibility obviously must raise his value as a public servant which should be recognised in the shape of adequate remuneration. As it is, the view of many authorities seems to be that bacteriological work, which includes pathological inquiry, can be "thrown in" as part and parcel of the public analyst's duties and can be included for the same remuneration that a public analyst receives when his work relates only to the examination of food and drugs. We hold no special brief for the public analyst, who is rarely a medical man, but are constrained to remark that this seems hardly fair.

## THE OXFORD PAGEANT.

THE University of Oxford has been accused of flouting the medical sciences but the Oxford pageant has none the less proved of subtly flattering interest to the world of medicine. The proceeds of the performances, which must amount to a large sum in view of the many thousands of spectators who attended them, are, we understand, to be devoted to the benefit of the Radcliffe Infirmary, and though the famous benefactor, Dr. Radcliffe, has not himself been represented in this great scenic triumph of university and civic history, yet medicine, as one of the members of the mediæval "Trivium," has figured there a stately genius who, caduceus in hand, played in the "Masque of Mediæval Learning," that fascinating interlude dividing into two parts the long and gorgeous series of 15 scenes which make up the pageant.

> "Medicine, next divinity,"

says the quaint Prælector to the vain and serious students to whom he introduces the several characters of the masque—

> "Doth teach the cure of the body,
> And maketh Melancholy be
> Health's ward in cheerful chancery."

Nor does medicine appear in allegory only. The chief poet of the pageant is a medical man and well-known writer of classic English verse, Dr. Robert Bridges, whose noble ode, "An Invitation to the Pageant," and not less noble prophecy of the future of Oxford, put into the mouth of Theobald of Etampes, the twelfth century pioneer in the university of the learning of the schoolmen, are not only a worthy continuation of the poetic Oxford tradition, but are in themselves fine additions to English literature. Through Theobald's prophecy Dr. Bridges now ranks with Matthew Arnold, whose phrase "the city of the dreaming towers" has become historic. Though THE LANCET is a prose journal, we may for once quote these fine lines by a "doctor." Theobald of Etampes has looked down in a dream upon—

> "a lovely city in a wide vale.
> High in the south the sun
> Smote on her crowded pinnacles, that rose
> With spiry delicacy of silver-grey,
> As 'twere a fretted casket of man's thought,
> Severe mid the soft wilderness of green.
> Beneath her walls a river flowed meandering
> Thro' flowery meads, rushes, and willowbanks,
> Where the sweet birds of the stream warbled all day.
> But evermore my wandering eye return'd
> Unto the lovely city."

## RUPTURE OF THE MESENTERY DUE TO A FALL.

IN the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of June 23rd Dr. A. Laubie has reported a curious result of a fall from a height—fatal rupture of the mesentery without other abdominal lesion. A man fell from a height of 15 metres and died after two and a half hours. Six days later and four days after he had been interred Dr. Laubie was requested to make a necropsy. The body was that of a strong healthy man and showed signs of incipient decomposition. In the left parietal region was a contused wound measuring from 10 to 12 millimetres which did not extend to the cranium. There were no signs of fracture of the skull or of injury to the brain. The spinal cord was exposed and a small extra-dural clot was found at the level of the third and fourth cervical vertebræ. The cord here felt soft but section revealed nothing abnormal. The lower part of the mesentery of the small intestine showed a blackish tint and a tear the dimensions of which were difficult to ascertain as the least traction lacerated the tissues. In the right renal region were clots of the volume of two fists and the tissues of the posterior surface of the abdomen were impregnated with blood. Dr. Laubie thought that the spinal lesions were of little importance, as there was no solution of continuity of the cord. The lesion of the mesentery he thought was the cause of death, though the intestine was intact. An internal hæmorrhage in the course of severe injury might be fatal. The effects of the former, always a grave condition, would be added to the shock of the injury. Possibly spinal concussion was also a factor in producing death.

## AN ACT TO PREVENT PROCREATION OF UNFIT PERSONS.

THE State of Indiana has just passed the following drastic measure to prevent procreation among confirmed criminals and mental degenerates of different sorts :—

*Preamble.*—Whereas heredity plays a most important part in the transmission of crime, idiocy, and imbecility;

*Penal Institutions—Surgical Operations.*—Therefore, be it enacted by the General Assembly of the State of Indiana, that on and after the passage of this Act it shall be compulsory for each and every institution in the State, entrusted with the care of confirmed criminals, idiots, rapists, and imbeciles, to appoint upon its staff, in addition to the regular institutional physician, two (2 skilled surgeons of recognised ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable and there is no probability of improvement of the mental condition of the inmate. it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced unimprovable: Provided, that in no case shall the consultation fee be more than three ($3.00) dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institution.

It would seem difficult to comprehend the exact value of this piece of legislation, for apart from the criminal it is merely directed against the "unimprovable" cases detained in the State institutions. Now in the vast majority of instances the "unimprovable" patient remains the rest of his life in the asylum and it cannot be necessary to subject him to this somewhat severe operation, when all opportunities of procreation have been, or should have been, withdrawn. It is an Act which will not assist the early placing of patients under care, as it will add another, and in this instance a very real, horror to the asylum. The perplexing patients to deal with are those who have recurrent attacks of insanity and who frequently propagate their species between these attacks. Now these persons are apparently immune from this Act. One of the great difficulties in carrying out this law will be that of deciding who are the "unimprovable" cases. There is no time limit ; therefore a patient may be emasculated in the first month of his residence in the institution, provided that the board and the experts agree that he belongs to the "unimprovable" class. There is no appeal, neither does it appear that the relatives can intervene. Even were it possible to grant that this treatment is advisable and proper, surely this is a great power to place in the hands of that class of expert who would be willing to be consulted at $3 per case. Further, it must be borne in mind that many persons, especially females, rapidly degenerate mentally after their reproductive organs have been removed. Therefore in eliminating the bare chance of a given patient begetting an insane offspring it will be within the bounds of possibility that she may be made chronically insane, whereas if not operated upon she might have recovered. We are not certain that it has been proved that a large proportion of the insane are the offspring of "confirmed criminals, idiots, rapists, or imbeciles"; therefore this scheme of legislation would appear to be more vexatious than practical. We do not say much regarding the confirmed criminal, for presumably he is in possession of his faculties, and if the risk of emasculation is added to the detention in gaol the enhanced penalty may deter the thief or the wife-beater from his evil practices. In conclusion, we feel bound to condemn this enactment, for the objections are great compared to the small good which may be gained ; for, whilst fully appreciating the importance of doing something to prevent the spread of insanity, we should prefer to rely on less drastic legislation, together with the education of the public, rather than in seeking the remedy by the surgical knife.

## OPERATIVE TREATMENT OF THE LARGE BOWEL.

Dr. Robert Hutchison, in the course of some recent remarks in the wards of the London Hospital on the treatment of muco-membranous colitis, after discussing the treatment by diet, considered the question of ileo-sigmoidostomy with the removal of the colon. In regard to diet there were, Dr. Hutchison said, two diametrically opposed schools of teaching. Most German authorities, headed by von Noorden, appeared to recommend a bulky diet rich in cellulose, such as was commonly prescribed in the treatment of ordinary constipation. French authorities, on the other hand, whose experience of the disease at Plombières was peculiarly large, employed a diet which was calculated to leave as little residue in the bowel as possible. Personally, he agreed entirely with the French plan and commonly prescribed a diet from which all insoluble débris was removed as far as possible. That indication was met by recommending that all animal food should be passed through a mincing machine and all vegetable food through a fine sieve. If those conditions were observed the actual composition of the diet might safely be left to the choice of the patient. He was inclined to think, however, that in severe cases all animal foods, except milk, should be forbidden and that the diet should be a purely lacto-farinaceous one. He had known at least one case in which such a diet was observed for more than a year with the greatest benefit. He came finally to the consideration of operative measures. In intractable and old-standing cases which had resisted treatment, and where the patient was becoming more and more of a confirmed invalid, it was naturally asked whether any help was to be found in surgery. A temporary ascending colotomy had been recommended in such cases and practised with some success, but its inconveniences were very great. Ileo-sigmoidostomy appeared on the face of it to be a more rational proceeding, for it threw the colon out of action completely and permanently. His experience of that operation in muco-membranous colitis was limited to three cases. In all of those great improvement resulted and was maintained after the lapse of more than a year, but in none was there a complete cure. One patient, indeed, continued to pass considerable quantities of mucus in spite of the fact that the ileum had been detached from the cæcum and united to the lower part of the sigmoid flexure. He thought, therefore, that it would be well, where the absence of adhesions made it easy, to remove the entire colon in such cases in order to prevent the regurgitation of the intestinal contents into the cul-de-sac which remained when the large bowel was left *in situ*. That, as they knew, had been practised successfully by Mr. W. Arbuthnot Lane in severe cases of fæcal stagnation from atony and dilatation of the colon—a condition in which, as a matter of fact, muco-membranous colitis was often present as well. In two of Dr. Hutchison's cases appendicostomy was performed in order to permit of thorough lavage of the bowel, a tube being worn for the purpose for some months. In both distinct improvement had resulted but the operation was yet too recent to enable the final result to be judged. He anticipated, however, that ileo-sigmoidostomy would prove to be the more satisfactory procedure and he would never hesitate to recommend it in cases which had resisted all other attempts at treatment.

## THE ROYAL ANTHROPOLOGICAL INSTITUTE.

BY command of His Majesty the King the Anthropological Institute is henceforth to be distinguished by the designation of "Royal." In congratulating the institution upon its new honour we will take the opportunity to point out how well it is deserving of such official recognition. There are few sciences that have a wider range of study and certainly none that has a more direct human interest than that of anthropology. It legitimately concerns itself with such varied interests as deal with the subject of physical racial deterioration at home and that of the better appreciation of the customs and modes of thought of the native races inhabiting the many colonies and dependencies for the proper administration of which our country has made herself responsible. Anthropology is indeed no purely academic science, although happily our old universities have afforded excellent opportunities for its study, but one which actively concerns our legislators at home, our administrators abroad, and the medical profession everywhere. It is a science indeed in which the medical man who takes a broad outlook upon his profession will find an engrossing interest, and it is sufficiently wide in its application to enlist the coöperation of minds of a widely varying bent: anatomy, sociology, ethnology, genetical research, are only a few of its important branches. We trust that the new and honourable title with which its British representative has been endowed will give the science that place in the estimation of the thinking public which its great practical importance deserves.

## SHELTER FOR HOMELESS WOMEN.

ANYONE who has investigated the existing provision for sheltering the homeless outcast must have been struck with the lack of any suitable accommodation for otherwise respectable women and girls who, by untoward circumstances, have drifted into the lower strata of society. In concluding the report of our Special Sanitary Commission on the Rowton House at King's Cross we said: "We would earnestly ask him (Lord Rowton) whether some similar provision could not be made for the corresponding class of females. We appreciate the difficulties, but the need is urgent."[1] Indeed, Lord Rowton, who, in conjunction with Sir Richard Farrant, was the originator of Rowton Houses, in the course of a conversation with our Commissioner admitted the necessity of cheap shelters for females, but saw so many possible difficulties in the way that he did not think it advisable to risk the erection of houses for women. We welcome therefore the scheme which Mrs. Mackirdy (Olive Malvery), the authoress of the "Soul Market," has suggested for the shelter of about 200 women and girls. Briefly, it is proposed to place in the vicinity of Westminster or Vauxhall a shelter where women can obtain a bed for 2*d.* There will be wash-houses attached to the building and a cheap food bar, a feature of which will be the provision of pure milk for babies. When once equipped and placed upon a working basis the shelter will be handed over to Mrs. Bramwell Booth, so that the public will have no further call upon their purses in connexion with the shelter. If the scheme should do no more than prevent 200 women and girls from wandering in the streets at night rather than seek the refuge of the "Doss" or "Kip" house, a great work will have been done. But we hope that the scheme will be still more successful and that eventually other houses will be built and that the blot on our city of allowing homeless but otherwise respectable females to wander at night in the streets will be wiped out. The committee for carrying out the scheme includes, amongst others, the Duchess of St. Albans, Lady Wemyss, Lady Brassey, Lord Brassey, Lord Reay, Lord Curzon, Lord Strathcona, Sir Dyce Duckworth, and Dr. T. N. Kelynack. Lady Brassey, whose address is 24, Park-lane, London, W., will gladly give further particulars of the scheme to inquirers.

## EPIDEMIC CEREBRO-SPINAL FEVER.

Dr. R. M. Buchanan, bacteriologist to the corporation of Glasgow, has stated in a recent report that the meningococcus was found in nearly 25 per cent. of the individuals examined, they being most commonly adults. It was found in four convalescents on the seventeenth, thirty-fifth, fifty-sixth, and seventy-fifth days from the beginning of their respective illnesses. On various persons who had recovered from the disease being examined three of them still showed the presence of the meningococcus in the throat. One had the illness two years, one other 12 months, and a third three months ago. The results would seem to show that the infection of cerebro-spinal fever may be spread by individuals who offer no evidence of its presence. The germ may also apparently remain a long time in the throat of individuals stricken with the disease, even after recovering from it. In Scotland during the week ended June 29th there were 16 deaths from this cause registered in Glasgow, 3 in Edinburgh, and 1 in Dundee. In Glasgow the weekly report issued on June 28th showed that there were at that time 80 cases under treatment. In Belfast during the week ended June 29th there were 6 deaths registered as being due to this cause.

## THE RETIREMENT OF POSTAL MEDICAL OFFICERS UNDER AN AGE-LIMIT.

SOME ten months ago the Postmaster-General issued an entirely new regulation intimating that he had decided to review annually the efficiency of postal medical officers who were over 60 years of age, retaining those only who were found to be "thoroughly efficient" and retaining none in any circumstances after 70 years of age. Since its promulgation the Association of British Postal Medical Officers has been unceasing in its efforts to obtain either great modifications in, or rescission of, this regulation. The postal medical officers contended that much hardship was involved in making so totally unexpected a regulation retrospective and that the method of determining the question of efficiency was not satisfactory because it was based on secret reports to which the medical officers had no access and to which they had no opportunity of replying; and they claimed that it was but just that a medical consultative board should be instituted before which postal medical officers would have the right to appear and to be heard in refutation or extenuation of any charge of inefficiency. It was also most strongly urged that postal medical officers would be the only servants of the Post Office liable to dismissal for inefficiency without warning of any kind being given, and likewise that they would be the only public servants to be retired from public appointments under an age-limit without any compensation or gratuity. As the result of applications made to the Postmaster-General by the Association of British Postal Medical Officers Mr. Buxton consented to receive a deputation of its members. Accordingly a deputation, consisting of Dr. E. L. Adeney (Tunbridge Wells), the president, Dr. George A. Mason (London), the president-elect, Dr. J. Dunlop (Bradford), Dr. A. Campbell (Dundee), Dr. J. Walton Browne (Belfast), Mr. D. I. McVeagh (Coventry), Dr. T. F. Higgs (Dudley), Mr. W. A. Berridge (Redhill), Dr. M. Coates (Streatham), and Dr. R. R. Giddings (Nottingham), the honorary general secretary, waited upon Mr. Buxton at St. Martin's-le-Grand on June 27th. The Postmaster-General was accompanied by Mr. Babington Smith, C.B., C.S.I., and Mr. Arthur H. Wilson, respectively the secretary and the medical officer-in-chief to the Post Office. The outcome of the interview was, we understand, most satisfactory to the deputation, Mr. Buxton, after courteously listening to the arguments advanced, coming to the following decision :—

---

[1] THE LANCET, March 28th, 1896, p. 867.

1. That present and prospective postal medical officers over 70 years of age are, if they desire to retain their appointments, personally to bring their cases under the notice of the Postmaster-General, and in all cases where they can be shown to be still efficient he will favourably consider them for retention in their present positions.

2. That only where a postal medical officer is hopelessly inefficient and his inefficiency is such that there is no possibility of him improving will he in future be discharged without a warning, but that where a medical officer is getting slack and showing inefficiency in the opinion of the department he will be given 12 months' notice and will be reported upon again at the expiration of that time and if it should occur that he can then be reported as being efficient his services will be retained.

3. That whenever a postal medical officer is reported as being inefficient he will be given information of the nature of his inefficiency in general terms, and if any specific charge is preferred against him it will be stated. If any postal medical officer reported as inefficient considers that the charge is an unjust one he will in future be entitled to have a personal interview with the medical officer-in-chief or the second medical officer at the London head Post Office and to lay then before him any matters in explanation or extenuation of the charge.

4. That Mr. Buxton requested to be supplied by the Association of British Postal Medical Officers with a memorandum of its proposed scheme of superannuation for medical officers and promised to accord it his sympathetic consideration, adding, however, that if it converted him it would still be a matter for the Treasury to decide upon.

THE new premises of the City of London Lying-in Hospital, City-road, were formally opened on Monday last, July 1st, by H.R.H. Princess Christian in the presence of the Lord Mayor of London, Sir William Treloar, who is the president of the charity, and of a large number of the supporters of the hospital, the committee, and the staff.

Dr. Donald MacAlister, President of the General Medical Council and Principal of the University of Glasgow, has been appointed by the Crown on the governing body of the Imperial College of Science and Technology, and appears to be the only member of the medical profession nominated to serve on that body.

THE Laryngological Section of the newly constituted Royal Society of Medicine will hold its first general meeting at 20, Hanover-square, London, W., on Tuesday, July 9th, at 5 P.M., for the adoption of rules, the election of a council, and the transaction of other necessary business.

THE annual Congress of the Royal Institute of Public Health was opened on Saturday evening, June 29th, at Douglas, Isle of Man, by Lord Raglan, the President of the Institute for the year and the Lieutenant-Governor of the island.

KING'S COLLEGE HOSPITAL.—In aid of the fund of King's College Hospital a festival dinner was held at the Hotel Cecil on June 28th. Lord Methuen presided, and in proposing "Success to King's College Hospital" he traced the history of the institution and said that the removal of the hospital to South London would cost £300,000. Mr. W. F. D. Smith, M.P., had given 12 acres of land at a cost of £62,000. The annual expenditure of the hospital was about £22,000 and the ordinary income £16,000. He hoped the time was far distant when the hospitals of London would be placed upon the rates, and he appealed to the charitable public to prevent this. The support of medical schools was only second to the support of hospitals and the public ought to subscribe freely to this branch of hospital work. A sum of about £1400 was collected during the evening.

# IMPORTANT EPOCHS IN THE HISTORY OF THE OLD SCHOOL OF MEDICINE OF PARIS.[1]

BY H. MACNAUGHTON-JONES, M.D. Q.U.I.

IN 1281 the Faculty of Medicine, desirous of having a separate building and depository for its archives, had its first installation beside the School of Arts in the rue Escholes des Escholiers. The first authentic acquisition of property occurred on May 24th, 1309. In the rue du Fouarre from the thirteenth to the fourteenth centuries the Faculties of Arts and Medicine were united. In 1369 the two faculties separated, and that of medicine obtained a house at the corner of the rue des Rats and the rue de la Bucherie. This was the cradle of the Medical School.

Dulaure, in his "History of Paris" (p. 242), says that in the School of Medicine, situated in the rue de la Bucherie, No. 15, medicine was taught in the University of Paris. But this science was very little advanced and contaminated by magical practices had no special school. In 1469 the University assembled at Notre Dame, and determined to establish a separate institution for the teaching of medicine. An old building belonging to the Carthusian nuns was secured in the rue de la Bucherie. The construction of the school building was commenced in 1477. Following the ancient custom the professors and scholars were fathers (priests), though they were called "physicians" or sometimes "doctors."

Little by little the neighbouring buildings were encroached upon and in 1608 the house which formed the corner of the rue du Fouarre[2] and the rue de la Bucherie was acquired and an anatomical amphitheatre was constructed. Gradually the Faculty increased and modified its internal installation, the outside of the buildings giving but little idea of the character of the school at this time. It was in the middle of the eighteenth century that the amphitheatre, of which we see the cupola (shown in the etching) at the corner of the rue de la Bucherie and the rue de l'Hôtel Colbert, was constructed (1742–44), and this was solemnly inaugurated on Feb. 18th, 1745, by the celebrated anatomist, Winslow, who taught here. Despite many restorations the buildings were in such a state of repair that in 1775 the Faculty was obliged to install itself in the rue St. Jean-de-Beauvais (given up by the Faculté de Droit), where it remains to the present day.

Up to the middle of the fifteenth century all the members of the different grades in the University were designated by the name of "*clerc*," which had reference to their religious character, and celibacy was imposed on the doctors of medicine as on the other members of the clergy. The University of Paris was then a great intellectual centre for the entire world, and up to 1790 the diplomas that it granted to its medical graduates entitled them to practise "*urbi et orbi*." The University, composed of four faculties, Arts, Theology, "La Faculté de Droit Civil et de Droit Canon" (still called the "Faculté des Décrets") and Medicine, had special rights over that portion of Paris situated on the left bank of the Seine. The students were mainly recruited from the bourgeois class, and their lives were intimately associated with it. "Arts" was the oldest of the faculties and medicine was probably not acknowledged until 1270.

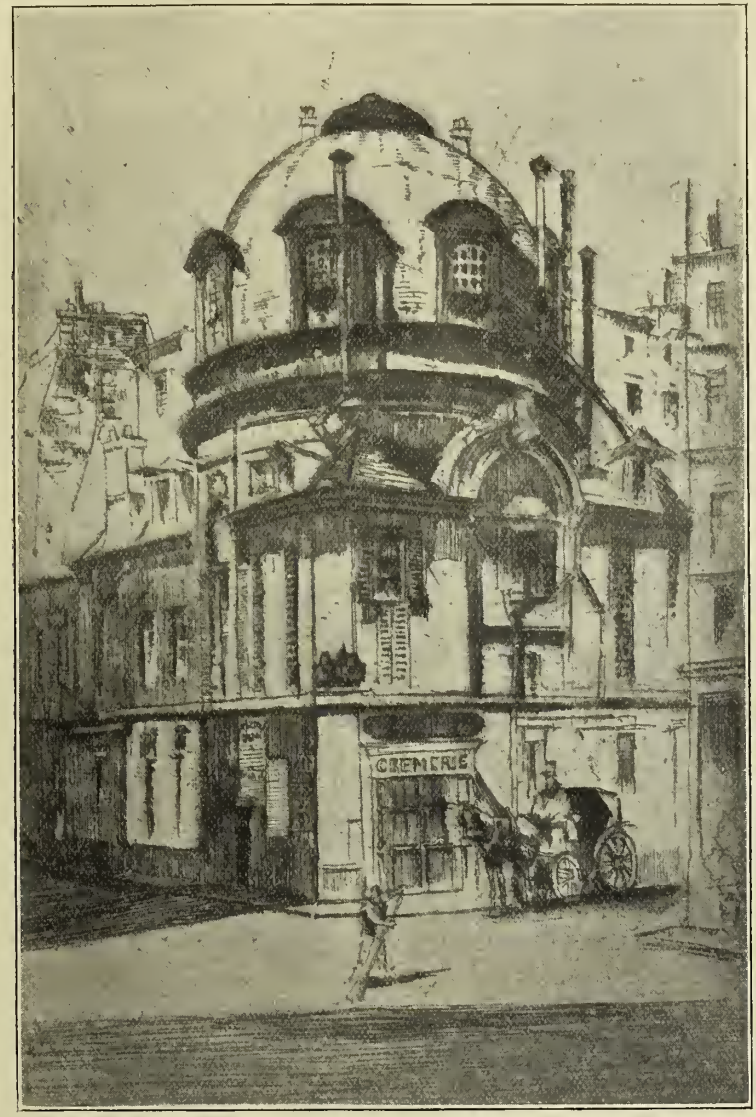
In 1792, after the cessation of the Faculty of Medicine, the buildings of the rue de la Bucherie became national property. They were restored in 1810 and divided into many lots. In 1896, when the town of Paris took them over, the lower schools were converted into a lavatory, the amphitheatre was occupied by a wine merchant, and a billiard saloon was installed on the spot where Winslow had taught. The chapel, botanical garden, and the library had all disappeared. Referring to this demolition Dr. René Fauvelle says: "Sic transit gloria mundi." The tablets on the old building bore the inscription "Scholæ Medicorum." Corlieu in his brochure "L'Ancienne Faculté de Médecine de Paris" calls it "le berceau de notre profession."

It is interesting to note that in olden times the celebrated oath of the physicians was taken kneeling before the altar of St. Denis in Notre Dame (the spot now occupied by a monument dedicated to Archbishop Affre). In the old chapel of the school there was a painting of St. Luke, and on his fête day a special mass was celebrated and chanted by the physicians, who were at the same time monks or occasionally canons of Notre Dame.

---

[1] Taken from the work of Dr. René Fauvelle, "Les Etudiants en Médecine sous le Grand Roi," and Dulaure's "Histoire de Paris," and Corlieu's "L'Ancienne Faculté de Médecine."

[2] Now the rue de l'Hôtel Colbert since 1828. The rue de Fouarre has been suppressed in part by the extension of the rue Lagrange to the Quay.



The Old School of Medicine of Paris.

The accompanying etching by Miss Katherine Kimball was made in 1904 for reproduction in Okey's "Paris." Since then the building has been to a great extent demolished, and has, I believe, been handed over to the Association des Etudiants de Médecine. The etching shows Winslow's cupola. The building in its present state cannot stand for any time and must be rebuilt. The original amphitheatre was constructed of wood and open at the side—rather a contrast to our modern well equipped and comfortable anatomical rooms and theatres. In those days mules were ridden by the physicians, so posts were placed at the sides of the doors of the schools to assist them in alighting.

---

# MEDICINE AND THE LAW.

*Trial for Murder and Concealment of Birth in Essex.*

AT the recent assizes at Chelmsford two women, a domestic servant, aged 21 years, and her grandmother, aged 74 years, were indicted for the murder of the infant child of the former. The charge of murder against the younger prisoner was withdrawn by the counsel for the Treasury before the trial but was proceeded with against the elder one, who was eventually acquitted. Both prisoners were found guilty of concealment of birth. The evidence showed that undoubtedly the younger prisoner, Emily Campion, had been delivered of an illegitimate child at the house of her grandmother, Maria Webb, and that the latter had given the dead body to a male relative who had buried it in his garden, preserving the secret as was not unnatural. In these circumstances it will easily be understood that there was no evidence of the commission of the crime of murder except the medical evidence founded upon post-mortem examination and upon statements made by the prisoners. The concealment of the birth, the manner in which the body was disposed of, and much of what was said by the prisoners in the course of inquiries, apparently of a somewhat inquisitorial nature, on the part of the police were equally consistent with the child having been born alive or dead. On behalf of the Treasury the medical evidence was given by Mr. Henry J. Price and Mr. A. E. Lyster. The former gentleman, who was under examination for a long time, had two points closely connected with one another to deal with: the question whether there had been life in the sense required by the law, and that of how such life had been terminated. With regard to the former the flotation of the lungs was mainly relied upon, the test having been carried out by the removal of the whole of the contents of the thorax, including a large thymus, and the placing of them in water after ligaturing the vessels, when it was found that the lungs contained sufficient air to prevent the mass from sinking. On the second point the question at issue resolved itself into whether the grandmother had strangled a live child with a cord procured by her for the purpose, or whether, as she had alleged, she had found her granddaughter delivering herself of a child already dead, or almost dead, through the winding of the umbilical cord twice round its neck, and had only then assisted in completing the delivery, by which time the child was found to have been stillborn. The grandmother had practised as a midwife until the passing of the Midwives Act, when apparently she had not sought registration. The evidence as to the intentional strangulation with a foreign substance rested on the features presented by a grooved line running round the neck of the exhumed body. This was described by Mr. Price as a well-marked groove about a quarter of an inch in width, with raised hardened edges, and higher at the back of the neck than in front, the examination of it having led him and Mr. Lyster to the conclusion that a foreign substance and not the umbilical cord must have caused it. Death they assigned to strangulation in the manner indicated, combined with hæmorrhage from the umbilical cord, the evidence of which was duly described. The evidence of the two witnesses named was corroborated by that of Mr. A. J. Pepper, called as an expert. For the defence, the statements of the prisoner, Mrs. Webb, were given weight to by Dr. F. J. Smith who gave evidence to the effect that the physical phenomena observed and described by the medical witnesses for the Crown were not conclusive as to her guilt but were at least consistent with her story being true, and he himself expressed the opinion from the facts described that the child was stillborn owing to strangulation or suffocation during protracted delivery. He did not regard the evidence of separate existence derived from the flotation of the lungs deposed to as conclusive. His views were supported by Dr. H. Russell Andrews who agreed with him in thinking that the mark described upon the neck might or might not have been caused by the umbilical cord. In these circumstances the jury, after retiring to consider the evidence, acquitted the prisoner Webb of the charge of murder but convicted her and her granddaughter of concealment of birth, for which offence they were each sentenced to six months' imprisonment with hard labour.

### *An Action to Recover Fees.*

The executors of the late Mr. C. J. Oldham, F.R C.S., recently sued an elderly lady, Mrs. Fraser, residing at Byron Hall, Worthing, for the balance of an account for £168 for attendance and for performing an operation. Mr. Oldham at the time when the debt was incurred lived at Hove, Brighton, and the amount was made up of charges of 3 guineas each for 19 visits to his patient at Worthing, a distance of about ten miles, a hundred guineas for the operation, and 3 guineas for the anæsthetist's fee. The operation was performed in January, 1901, and the account was sent in frequently after Mr. Oldham's attendance upon his patient ceased towards the end of that year. One of her sons, Captain Fraser, appeared to have thanked Mr. Oldham for his kindness and to have mentioned family difficulties as a reason for not paying the account. It remained unsettled for some time, but finally, after a solicitor had intervened, bills for £40 payable at intervals of three months were given and two of these were met. Mr. Oldham died in January, 1907, and his executors brought the action to recover the balance due and the defendants not only resisted this but set up a counter claim for part of the money which they had paid on the ground that they had not known that the sum of £100 represented the operation and that it was excessive. Another son, Major Fraser, in addition to the one already mentioned, went into the witness-box and gave evidence as to this, informing the court that their mother was the widow of an officer in the army enjoying two pensions as such, amounting to £450 a year. One of these gentlemen characterised Mr. Oldham as a "local practitioner" who should not have charged a widow lady £100 for a single operation. His Honour Judge Woodfall, in summing up, pointed out that there was nothing in the evidence given to show that the charges were excessive and paid a tribute to the medical profession, dwelling upon their readiness to reduce their charges or to make none in cases of real necessity. A verdict was found for the full amount claimed by the executors, for which judgment was given with costs.

## IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the general committee of the Imperial Cancer Research Fund was held on July 1st at Marlborough House, the PRINCE of WALES presiding. Among those present were: Sir William S. Church, Sir Julius Wernher, Sir Charles Morrison Bell, Sir Richard Douglas Powell, Sir Henry R. Swanzy, Sir Henry G. Howse, Sir John McFadyean, Mr. H. L. Florence, Dr. John Tatham, Dr. J. Rose Bradford, Mr. H. T. Butlin, Mr. W. Watson Cheyne, Mr. J. A. Mullens, Mr. Henry Morris, Mr. Ludwig Neumann, Mr. S. Neumann, Mr. Edmund Owen, Mr. H. J. Stiles, Dr. E. F. Bashford (general superintendent of research), Dr. J. A. Murray, Dr. Haaland, Mr. W. H. Bowen, Mr. E. R. Frere, and Mr. F. G. Hallett (secretary).

Sir WILLIAM CHURCH, in moving the adoption of the report, said that the investigation into the cause, nature, and treatment of cancer had, during the past year, followed the same lines as in former years. Owing to the valuable assistance received from the Governments of India and other dependencies, as well as from the Foreign, Colonial, and India Offices, and from private sources, their knowledge of the existence and frequency of cancer in various races of men was steadily increasing; and its presence was found to be associated not infrequently with native customs or religious rites which acted as sources of chronic irritation of portions of the surface of the body. Statistical information continued to be collected from London and provincial hospitals. Reports of 1282 cases (rather more than a quarter of the total deaths from cancer in the metropolitan area) had been received from the London hospitals and 392 from provincial hospitals. The probabilities of cancer manifesting itself in individuals and in families in persons over 35 years of age had been made the subject of calculation. 20 years ago Dr. William Ogle, then statistician to the Registrar-General, stated that one out of 21 men reaching the age of 35 years and one out of every 12 women reaching the same age eventually died from cancer. From the Registrar-General's report for 1905 it had been calculated that at the present time, of men over 35 years of age one in 12 would eventually die from cancer and one woman in every eight who attained to the same age. These figures were higher than those given by Dr. Ogle, and the numbers of cases in the two sexes were approximating, which might be due to the fact that women suffered from forms of the disease more easily recognisable than was the case in men. It was impossible to say how far this apparent increase in the number of persons affected arose from a real increase in the frequency of the disease or from its more frequent recognition now as the cause of death. In man, owing to the length of life, the low rate of fecundity, and the varying value of the records, there were no means of obtaining from the records of preceding generations the facts with anything like scientific accuracy. Experiment was necessary in order to trace more accurately the circumstances associated with the spontaneous occurrence of cancer both in individuals and in families. It had now been found possible to establish strains of mice from cancerous parents. The removal by surgical means of cancerous tumours occurring spontaneously in mice prolonged their lives and had enabled young ones to be bred from them; they had, therefore, now the means of observing descendants of mice of known cancerous parentage, and by successively crossing other spontaneously affected animals with the offspring of cancerous parents, the hereditary tendency, if there was any, could be concentrated. This concentration in large numbers of animals of a known age should enable them, in the course of a few years, to determine whether there was a family tendency or only an individual tendency to the disease. At this part of his address Sir William Church summarised the experimental work accomplished in the laboratory during the past year. Our comments on these investigations will be found in a leading article contained in another part of our present issue, and pathologists will agree that fresh light has been thrown upon some important points. Sir William Church concluded by saying that much attention had been given during the past year to various alleged cures for cancer, but it was found impossible to ascribe a curative value to any of them. Experiments with trypsin alone, or in conjunction with amylopsin or as pancreatic extract, had been made, and it appeared in mice to exert no effect on the growth of the tumours. He also called attention to the efficient manner in which the superintendent and his assistants, Dr. Murray, Dr. Haaland, and Mr. Bowen, had carried on the work of the research, and to the assistance received from Dr. S. Monckton Copeman and Dr. Hake in examining the gastric secretion of mice.

Sir HENRY SWANZY, in seconding the motion, said that the thanks of all were due to Dr. Bashford and his able assistants for the efforts which they had been making to solve the many problems connected with cancer.

The motion was carried unanimously.

Sir JULIUS WERNHER proposed a vote of thanks to the chairman and members of the executive committee, the subcommittee, the honorary treasurer, the secretary, auditor, and others who had assisted in the work of the fund during the past year. The work of the fund was in some quarters thought to be slow but there were very few people who recognised the nature of the scientific difficulties which had to be surmounted. Owing to the generosity of Mr. and Mrs. Bischoffsheim there was now a prospect of their having a sufficient income from investments to meet their normal requirements.

Mr. FLORENCE seconded the motion, which was unanimously agreed to.

Mr. MORRIS moved :—

> That the general committee desire to place on record their deep sense of gratitude to Mr. and Mrs. Bischoffsheim for their recent munificent gift of £40,000, which, together with Mr. Bischoffsheim's original donation of £5000, will do so much towards placing the Imperial Cancer Research Fund on a secure financial basis.

Sir CHARLES MORRISON BELL seconded the motion which was adopted unanimously.

On the motion of Dr. BRADFORD, seconded by Mr. LUDWIG NEUMANN, Mr. Watson Cheyne was re-elected a representative of the general committee on the executive committee; and on the motion of Mr. BUTLIN, seconded by Sir JOHN MCFADYEAN, Sir John Tweedy was elected a member of the general committee.

Sir R. DOUGLAS POWELL proposed a vote of thanks to the Prince of Wales for presiding and referred to the great interest which His Royal Highness had shown in the Research Fund from its foundation. This circumstance was a great encouragement both to the executive committee and to those officers who were engaged in research work; it was also an assurance to the public that any practical results would at the earliest moment be applied to the relief and prevention of this formidable and very prevalent disease.

Mr. EDMUND OWEN seconded the motion which was passed by acclamation.

The PRINCE OF WALES, in reply, said: It is a great pleasure to me to have been able to preside at this annual meeting of the Imperial Cancer Research Fund, and I wish to express my gratitude to Sir Douglas Powell and Mr. Owen for the kind terms in which they have proposed and seconded this vote of thanks, and to you, gentlemen, for the hearty response which you have given to it. I have been much interested in listening to Sir William Church's remarks on this year's report of the general superintendent. We have every reason to be satisfied with the growing confidence of the public in the work of the Fund. This is evident from the wide development of its investigations, in which workers in all parts of the world are now taking part; from the endeavours which are now being made in France, Belgium, Scandinavia, and the United States to organise similar investigations; and last, but not least, by the munificent donation of £40,000 from Mr. Bischoffsheim, a vice-president, and Mrs. Bischoffsheim in celebration of the happy event of their golden wedding. I am glad to have this opportunity of publicly expressing my deep appreciation of their splendid and unexpected gift. The broad lines of inquiry undertaken by the Imperial Cancer Research Fund have, we feel certain, influenced the whole nature of investigation at home and abroad. It is recognised that the work is conceived and carried out in a liberal spirit, that whatever facts are ascertained are immediately made known to everyone, that our material is freely placed at the disposal of all who are qualified to use it to good advantage, that our staff is not working for its own ends but with a whole-hearted desire to help on a solution of the problem. From the general superintendent's report we may gather that the result of the research has been to leave behind various vague issues which it was necessary to investigate in order to clear away doubts and to narrow down the issue to a certain definite line of investigation in which the clue to the nature of cancer must be sought. Although many new facts have been ascertained they do not as yet justify hopes of a new treatment. Good progress is being made in a scientific sense, which is, after all, the object of the work, and as scientific research must be sure and accurate so must it be laborious and slow. It is hoped, therefore, that the public will continue by its sympathy and financial assistance to support the work of the Imperial Cancer Research Fund and be willing to exercise the patience necessary for prolonged and systematic investigation. Compared with other diseases, cancer has, alas! such peculiar terrors of its own that impatience for the discovery of the cause and of successful treatment is only natural. But the fact that alleged cures are being submitted to impartial tests, such as the report shows to have been done in the case of trypsin, will, I hope, assure the public that everything will be done to take full advantage of any means that may be discovered to alleviate suffering. Another tribute to the success of the efforts of the fund is the number of applications from skilled investigators to take part in the work. Thanks to the liberality of the Royal Colleges, further accommodation has been placed at the disposal of the general superintendent and he has, therefore, been enabled to add materially to the staff. We have every reason to congratulate ourselves upon having secured the eminent services of Dr. Haaland who previously held the appointment of assistant of the Pathological Institute, University of Christiania. I wish to express my thanks to the chairman and members of the various committees, Dr. Bashford, and the officers of the Fund for the valuable and untiring services which they have given during the past year to the work of the Fund.

## EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office, 37, Soho-square, on June 28th, Mr. HENRY MORRIS, the treasurer of the College, being in the chair. Among those present were Sir William S. Church, Sir R. Douglas Powell, Sir Constantine Holman, Mr. J. Paul Bush, Dr. J. Cahill, Dr. Charles Caldecott, Dr. W. Collier, Mr. George Eastes, Mr. D. Powell Evans, Dr. Clement Godson, Mr. R. Charlton Harrison, Mr. H. W. Kiallmark, Dr. F. Needham, Mr. F. H. Short, Dr. St. Clair B. Shadwell, Dr. F. Taylor, and Dr. Nestor I. C. Tirard.

Numerous letters of regret for absence having been read the secretary announced the result of the voting for pensioners and foundation scholars, the successful candidates being as follows :—

PENSIONERS.

| | Votes. |
|---|---|
| 1. France, Mary | 6118 |
| 2. Phillips, Thomas G. | 5243 |
| 3. Hemingway, Louise | 3994 |

FOUNDATION SCHOLARS.

| | Votes. |
|---|---|
| 1. Harlock, Eric D. | 13,212 |
| 2. Ffrench, Desmond A. | 6223 |
| 3. Beasley, Henry E. | 6219 |
| 4. Barr, John W. | 5342 |
| 5. Ewbank, Charles H. P. | 5112 |
| 6. Wood, Arthur R. | 4857 |
| 7. Bland, L. Harry F. | 4731 |

The SECRETARY reported that as vacancies for pensionships had arisen since the voting papers were printed the council would admit at its meeting that day the two applicants heading the list of unsuccessful candidates, so that Mrs. Charlotte M. Nutt would be appointed a Pugh pensioner and Mrs. Emily Worhoys would be appointed an ordinary pensioner. The annual report of the council to the governors stated that in the year 1906 there had been an improvement in the income from subscriptions, donations, and bequests as compared with the previous year, with the result that the income and expenditure account showed a surplus of £836 4*s.* after a further sum of £771 7*s.* 9*d.* in connexion with the drainage and sanitary operations had been deducted. The amount expended on these extensive but necessary works had reached the large total of £8000, and in order to provide this the council had had to part with all stocks belonging to the General Purposes Fund, the only remaining asset being sundry mortgages amounting to £2550. The council regretted to announce that they had lost by death five members of their body—namely, Dr. M. Baines, Sir Joseph Fayrer, Bart., M.D. Edin., K.C.S.I., F.R.S., Mr. D. H. Goodsall, Sir A. W. L. Hemming, G.C.M.G., and Sir Arthur T. Watson, Bart., K.C.; and that Dr. P. W. Latham of Cambridge had felt himself compelled to resign his seat on the council owing to the difficulty of finding the time necessary for the work. Reference was also made to the loss which the College had sustained by the death of Mr. Thomas H. Wakley, F.R.C.S., a vice-president. Since the last annual general meeting the "Robert Armstrong Scholarship" of £60 a year for classics, tenable for three years at the University of Oxford or Cambridge, had been founded, and a legacy of £1000 had been received recently to found the "R. R. Cheyne" annuity for daughters of medical men who are Protestants. The report on the discipline, work, and health of the school was a very satisfactory one. Mr. H. F. Lee, one of the masters, had most kindly presented to the school a sub-target rifle, which would no doubt prove of great value as a means of instruction in rifle shooting. Since the last report S. H. Fazan had obtained a classical exhibition at Wadham College, Oxford, and had since been elected to an open scholarship of £80 at Christ Church; Ff. Roberts had gained a science exhibition of £30 at Clare College, Cambridge. 14 boys had passed the whole or a part of the preliminary scientific examination for the degrees of M.B., B.S. of the University of London; 16 boys had passed the matriculation examination of the same University; 13 boys had gained the higher certificate of the Oxford and Cambridge schools examination board and 37 had gained the lower certificate.

In proposing the adoption of the report for the past year the chairman drew attention to the salient points contained therein and specially referred to the great loss which the council had sustained by the deaths of two members of their body—namely, Sir Joseph Fayrer, who had been interested in the College since the year 1858 and had acted as chairman of the council for 14 years; and Sir Arthur Watson, who had been for 20 years a member of that body, during which period his professional advice was placed unreservedly at their service. He also made special reference to the loss experienced by the College by the death of Mr. Wakley, who had taken a very great interest in the institution since its foundation, and who had rendered material support when the desirable and beneficial change was made by which annuitants were entitled to receive an augmented pension in lieu of rooms in the College at Epsom. He reported the recent receipt of a legacy of £5000, from which the duty had to be deducted, under the will of the late Mr. Charles James Oldham, F.R.C.S., of Hove and observed that absolute requirements at the College in the way of accommodation for science teaching and necessary alterations and additions to the buildings would exhaust that sum, as well as any other gift of a substantial amount that might be received. In conclusion, he stated that the number of boys at present in the College—namely, 263—was the highest on record, and he drew attention to the fact that the greater facilities for the admission of day boys which were provided by the council last year had resulted in an increase in their number, there being at present 20, whilst the lowest point touched in 1906 was 12.

The motion having being adopted, formal business was transacted, including the re-election of members of the council, election of auditors, and alterations and additions to the by-laws.

A vote of thanks to the chairman, moved by Sir William Church, and seconded by Sir Douglas Powell, brought the proceedings to a close.

---

St. John's Hospital for Diseases of the Skin, Leicester-square, London, W.C.—The silver medal (instituted in 1895 by the Earl of Chesterfield, President of the hospital) has been awarded to Mr. E. J. D. Mitchell, M.A., M.B., B.C. Cantab., for proficiency in dermatology.

## ASYLUM REPORTS.

*Derby Borough Asylum* (*Annual Report for 1906*).—On Jan. 1st, 1906, there were 331 patients in the asylum; of these 149 males and 157 females belonged to the Derby union, and three males and 22 females were scheduled as private patients. During the year 98 persons (46 males and 52 females) were admitted; of these 84 (44 males and 40 females) were chargeable to the Derby union. The average annual admission of rate-supported patients has been 83 for the last five years and 76 since the opening of the asylum, 18 years ago. 47 patients were discharged: as "recovered," 35 (12 males and 23 females); as "relieved," six (two males and four females); and as "not improved," six (two males and four females). The recoveries are at the rate of 41·17 per cent. of the admissions (excluding transfers from other asylums), 30·0 for men and 51·11 for women. There were 37 deaths recorded during the year, 19 males and 18 females, being 11·1 per cent. on the daily average number of patients resident; of these 10 were cases of general paralysis. Dr. S. Rutherford Macphail draws attention to the fact that as the rate-supported patients are increasing at the rate of 10 annually, and as there are now only five vacancies on the male side and six on the female side, the extension of the asylum cannot be delayed much longer. The weekly rate of charge to the Derby board of guardians was reduced on Jan. 1st from 11*s.* 1*d.* to 10*s.* 6*d.* per patient. Private patients are charged 17*s.* 6*d.* and 21*s.* weekly. The farm and garden account shows a credit balance of £273.

*Barming Health Asylum, Kent* (*Annual Report for 1906*).—The number of patients on the books of the asylum on Jan. 1st, 1906, was 1489 (682 males and 807 females). During the year 1906 there were 407 admissions (180 males and 227 females), the rate of increase being below the average. Mr. H. Wolseley-Lewis has drawn up a table showing the number of patients for whom accommodation has had to be provided during the last 20 years. He states that during the last 16 years, since Lewisham, Greenwich, and Woolwich ceased to belong to Kent, the population of the insane has increased by 874, or on an average of 54·6 patients per annum, and as during recent years the increase has been higher he considers that it is safe to assume that an increase of over 50 beds a year will be necessary in future. Owing to the outcry about the increase of insanity during recent years Mr. Worsley-Lewis has made an analysis to see whether there has been any real increase in West Kent. Taking the figures for the last 15 years of fresh cases of insanity admitted to Barming Heath Asylum he finds that a slightly diminished rate is to be observed, and adds that "when it is borne in mind that many cases are now sent to asylums who previously were kept at home or in the workhouses, and that the population has increased by some hundreds of thousands, this lessened frequency of the incidence of insanity becomes well worth attention." On the other hand, he finds that there is an increase in the number of relapsed cases which are re-admitted. Referring to the causation of the insanity in those admitted during the year 1906. 112 are known to have had an insane inheritance and 42 were senile dements. 199 persons were discharged during the year (89 males and 110 females); of these, 156 (66 males and 90 females) left the asylum recovered, thus giving a recovery rate of 41·3, which is the highest with one exception for 14 years. 11 persons (four males and seven females) were discharged "relieved" and 32 patients (19 males and 13 females) "not improved." There were 186 deaths recorded (92 males and 94 females), giving a death-rate of 12·4. There has been no outbreak of infectious disease during the year. Owing to the satisfactory financial state the maintenance-rate has been reduced 10½*d.* per head per week.

*Chartham Asylum* (*Annual Report for 1906*).—The number of patients on the books of the asylum on Jan. 1st, 1906, was 1061 (487 males and 574 females). There were 226 persons admitted during the year (114 males and 112 females), making the admission rate about an average one. The discharges numbered 117 (54 males and 63 females). Of these, 85 (36 males and 49 females) left the asylum as "recovered," giving a recovery rate of 48 per cent. for females and 32 per cent. for the males. 12 patients were discharged as "relieved," six of each sex; 18 left "not improved" (ten males and eight females); and two males were returned as "not insane." The number of deaths recorded were 131 (68 males and 63 females), the death-rate being 13·8 per cent. on the male side and 11·07 per cent. on the female side. There was no outbreak of epidemic disease during the year.

*City and County of Bristol Asylum (Annual Report for 1906).*—There were 944 patients (418 males and 526 females) on the books of the asylum on Dec. 31st, 1905; of these two males and ten females were private patients. During the year 219 patients (91 males and 128 females) were admitted and of these four females belonged to the private class. The total number of patients who were discharged or died during 1906 was 240 (87 males and 153 females); of these 87 (29 males and 58 females) were "recovered," 54 (seven males and 47 females) were "relieved," two (one of each sex) were "not improved," and 97 (50 males and 47 females) died. The percentage of recoveries on the admissions, excluding transfers, is 41·85. The death-rate on the average number of resident patients was 10·52 (11·93 males and 9·34 females), and is lower than any year since 1901. The asylum is reported to be overcrowded and throughout the year the isolation hospital has been occupied by 20 male patients for sleeping accommodation. The committee states that it has now received the sanction of the Commissioners in Lunacy to its proposed plans for the addition of 90 beds.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8063 births and 3847 deaths were registered during the week ending June 29th. The annual rate of mortality, which had declined throughout the 12 preceding weeks from 17·9 to 12·7 per 1000, further fell to 12·5 in the week under notice. During the 13 weeks of the past quarter the death-rate in these towns averaged 15·1 per 1000, the rate in London during the same period being 14·6. The lowest annual death-rates in the 76 towns during the week were 3·9 in Burton-on-Trent, 4·1 in Hornsey, 6·0 in Leyton, and 6·3 in Willesden; the highest rates were 17·4 in Middlesbrough, 17·7 in Sunderland, 19·2 in Huddersfield, and 19·4 in Bolton. The 3847 deaths in the 76 towns showed a further decrease of 68 from the numbers in recent weeks, and included 427 which were referred to the principal epidemic diseases, against 430 and 365 in the two preceding weeks; of these, 158 resulted from measles, 136 from whooping-cough, 51 from diarrhœa, 40 from scarlet fever, 30 from diphtheria, and 12 from "fever" (principally enteric), but not any from small-pox. The deaths from these principal epidemic diseases were equal to an annual rate of 1·4 in the 76 towns, the rate from the same diseases in London being 1·7 per 1000. No death from any of these epidemic diseases was registered last week in Willesden, Brighton, Plymouth, Southampton, Birkenhead, Halifax, or in 14 other of the 76 towns; the annual death-rates therefrom, however, ranged upwards to 2·9 in Wigan and in Bolton, 3·3 in Walsall, 3·4 in Tottenham, and 4·5 in Warrington. The fatal cases of measles, which had decreased from 214 to 139 in the six preceding weeks, rose again to 158 in the week under notice; the highest death-rates from this disease were 1·7 in Derby, 2·2 in Warrington, 2·7 in Walsall, and 2·9 in Wigan. The deaths from whooping-cough, which had been 130, 124, and 104 in the three preceding weeks, increased last week to 136, the death-rates from this cause ranging upwards to 1·4 in West Ham, 1·5 in Stockport, and 2·1 in Ipswich. The 51 fatal cases of diarrhœa showed a slight decline from the number in the preceding week, and included three cases in Rhondda, equal to a rate of 1·2 per 1000. The deaths from scarlet fever, which had been 37 and 32 in the two preceding weeks, rose again in the week under notice to 40, of which 13 occurred in London, three in Liverpool, and three in West Ham. The fatal cases of diphtheria, which had been 48, 36, and 27 in the three preceding weeks, were 30 last week, the highest proportional mortality from this disease being in Rochdale, where the rate was 1·2 per 1000. Of the 12 deaths from "fever," two occurred in London, two in Birmingham, and one in each of eight other towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2862, 2936, and 2985 at the end of the three preceding weeks, had further risen to 3022 at the end of last week; 422 new cases were admitted during the week, against 368, 389, and 414 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 186, 149, and 156 in the three preceding weeks, were again 156 last week, and were three below the corrected average number in the corresponding period of the five previous years. The causes of 34, or 0·9 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, West Ham, Bradford, Hull, and 53 other of the 76 towns; the proportion of uncertified deaths, however, showed a marked excess in Liverpool, Birmingham, Sheffield, and Sunderland.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 17·2 and 17·3 per 1000 in the two preceding weeks, declined again to 15·0 in the week ending June 29th, but exceeded by 2·5 per 1000 the rate in the 76 English towns. The rates in the eight Scotch towns ranged from 10·0 in Paisley and 10·6 in Leith to 17·0 in Dundee and 22·0 in Greenock. The 522 deaths in the eight towns showed a decrease of 78 from the number in the preceding week, and included 76 which were referred to the principal epidemic diseases, against 83 and 84 in the two preceding weeks. These 76 deaths were equal to an annual rate of 2·2 per 1000, which exceeded by 0·8 per 1000 the rate from the same diseases in the 76 English towns; they included 34 which were referred to whooping-cough, 21 to "fever," 13 to diarrhœa, four to measles, three to diphtheria, and one to scarlet fever, but not any to small-pox. The fatal cases of whooping-cough, which had been 57, 43, and 37 in the three preceding weeks, further fell to 34 in the week under notice, and included 20 in Glasgow, six in Dundee, three in Edinburgh, and two in Aberdeen. The deaths referred to "fever," which had been 26, 24, and 14 in the three previous weeks, rose again last week to 21, of which 17 occurred in Glasgow, three in Edinburgh, and one in Dundee; all these deaths, except one in Glasgow, were attributed to cerebro-spinal meningitis. The fatal cases of diarrhœa, which had been eight and 23 in the two preceding weeks, declined again to 13 in the week under notice, and included five in Glasgow, three in Aberdeen, two in Edinburgh, and two in Greenock. The deaths from measles, which had been five and eight in the two previous weeks, decreased last week to four, of which two were registered in Glasgow and two in Edinburgh. Two of the three fatal cases of diphtheria occurred in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 106, 91, and 86 in the three preceding weeks, further fell to 72 last week, but were eight in excess of the number in the corresponding period of last year. The causes of 18, or 3·4 per cent., of the deaths registered during the week were not certified or not stated; the proportion of uncertified deaths in the 76 English towns during the same week did not exceed 0·9 per cent.

## HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 24·3 and 20·8 per 1000 in the two preceding weeks, further declined to 19·5 in the week ending June 29th. During the 13 weeks of the past quarter the death-rate has averaged 25·4 per 1000, the rate during the same period being 14·6 in London and 17·1 in Edinburgh. The 146 deaths of Dublin residents registered during the week under notice showed a decrease of 10 from the number in the preceding week, and included 11 which were referred to the principal epidemic diseases, against 11, 12, and 19 in the three preceding weeks; of these, eight resulted from whooping-cough, two from diarrhœa, and one from measles, but not any from small-pox, scarlet fever, diphtheria, or "fever." These 11 deaths were equal to an annual rate of 1·5 per 1000, the death-rates during the same week from the principal epidemic diseases being 1·7 in London and 1·5 in Edinburgh. The fatal cases of whooping-cough, which had been four, eight, and five in the three preceding weeks, rose again to eight during the week under notice; while the two deaths from diarrhœa corresponded with the number in the preceding week. The 146 deaths from all causes in Dublin last week included 24 of children under one year of age and 30 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were fewer than the respective numbers in the preceding week. Five inquest cases and five deaths from violence were registered; and 59, or more than 40 per cent., of the deaths occurred in public institutions. The causes of five, or 3·4 per cent., of the deaths in Dublin last week were not certified; in London only one death was uncertified, while in Edinburgh the percentage of uncertified deaths was 11·6. The 135 deaths registered in Belfast during the week under notice included six which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: F. A. Brice to the *Good Hope* and E. A. Penfold to the *Terrible* on recommissioning. Staff Surgeon: G. Taylor to the *Terrible*. Surgeons: H. C. Woodyatt to the *Good Hope* on recommissioning; C. E. C. Stanford to R.M. Barracks Dispensary, Plymouth; and C. J. Boucher to the *Argonaut*.

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Arthur L. Jones to be Surgeon-Major (dated June 19th, 1907).

### IMPERIAL YEOMANRY.

*Royal North Devon (Hussars):* Supernumerary Surgeon-Lieutenant W. F. L. A. Holcroft resigns his commission (dated May 31st, 1907). Edward Canny Ryall to be Surgeon-Lieutenant (dated May 28th, 1907).

### VOLUNTEERS CORPS.

*Royal Engineers (Volunteers):* East London (Tower Hamlets): Surgeon-Lieutenant J. P. Stewart resigns his commission (dated May 28th, 1907). Edward Canny Ryall to be Surgeon-Lieutenant (dated May 28th, 1907).

*Rifle:* 19th Middlesex (St. Giles's and St. George's, Bloomsbury) Volunteer Rifle Corps: Supernumerary Surgeon-Lieutenant W. G. Macfee to be Surgeon-Captain, remaining supernumerary (dated June 4th, 1907).

### ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

*Eastern Command:* Woolwich Companies: Robert Corfe to be Lieutenant (dated June 1st, 1907). Black Watch Bearer Company: Lieutenant A. E. Kidd to be Captain (dated June 12th, 1907). Liverpool Bearer Company: Lieutenant S. H. House to be Captain (dated June 3rd, 1907).

### THE BIRTHDAY HONOURS.

The following members of the Naval and Military Services have been the recipients of Birthday Honours—viz.: Inspector-General Herbert Mackay Ellis, K.H.P., director-general of the medical department of the Royal Navy, who receives a Knight Commandership of the Order of the Bath, and Colonel Charles Henry Beatson, I.M.S., Colonel George Deane Bourke, R.A.M.C., Deputy Inspector-General Thomas Desmond Gimlette, R.N., and Surgeon-General Francis Wollaston Trevor, A.M.S., each of whom has been made a Companion of the Order. Companionships of the Bath have also been conferred upon Surgeon-General Thomas Tarrant, K.H.P., A.M.S., retired; Deputy Surgeon-General Edward Malcolm Sinclair, late A.M.S., retired; and Deputy Surgeon-General Alfred Eteson, I.M.S., retired, in connexion with the fiftieth anniversary of the Indian Mutiny. Surgeon-Lieutenant-Colonel Warren Roland Crooke-Lawless of the Coldstream Guards, surgeon to His Excellency the Viceroy of India, has been made a Companion of the Indian Empire, and Dr. Jean Etienne Justin Schneider, principal medical officer of the first class in the French army and late chief medical officer to the Shah of Persia and president of the Sanitary Council of Persia, has been made an Honorary Companion of the same Order.

MR. GEORGE R. SMITHER, acting Consul-General at Barcelona, reports to the British Foreign Office that the Protestant Cottage Hospital, which has done excellent work in that city during many years, receiving as patients both Spaniards and foreigners, has made a new departure in the opening of an isolation ward for infectious cases; this will be a great boon as no such thing exists in the Barcelona General Hospital. The cottage hospital has proved often of great service to British sailors (especially in the convalescent stage) who are received for a small payment.

## Correspondence.

"Audi alteram partem."

## THE SURGICAL TREATMENT OF CONSTIPATION.

*To the Editors of* THE LANCET.

SIRS,—Having heard that in some quarters there is a feeling that my criticisms of Mr. Arbuthnot Lane's writings on the surgical treatment of constipation are too severe, I should like to say that I have a most friendly regard for him as a most amiable man and admiration for him as a practical surgeon. It should be remembered that the literature of the surgical treatment of constipation is almost wholly constituted by the writings of Mr. Lane. Nevertheless, it is not very small in quantity. Therefore, when I had to deal with it and found that in my judgment (which, of course, may be worthless) its value was lessened everywhere by what seemed to me a tendency of Mr. Lane's to state his ingenious, and sometimes brilliantly clever, hypotheses just as if they were proved theories and his views as if they were facts, it would have required an intolerably lengthy and dull disquisition to argue about each in detail.

I feel sure no complaint will come from Mr. Arbuthnot Lane, who himself is not unaccomplished in satire, as the following quotation shows: "There is a remarkable tendency to ascribe to the appendix any tenderness present in or about a line which extends from the anterior superior spine of the ilium to the umbilicus and which has been dignified with the name of a distinguished surgeon. Those making this mistake have, however, the satisfaction of knowing that if the appendix is not the cause of the trouble it is freely mobile and its excision involves practically no risk. It can be removed through a very small hole, the comparative minuteness of which gratifies them and the patient, suggesting great operative skill."[1]

Now "those making this mistake" of "a remarkable tendency to ascribe to the appendix any tenderness present in or about" McBurney's point, are the majority of surgeons of talent and experience in the profession throughout the world, many of whom could be named. And they survey the scars of their "interval" appendicectomies in the manner suggested! However, I should feel obliged if you will permit me to say that if any raillery of mine has caused the slightest pain or given offence to anyone of your readers I am sincerely sorry.

I am, Sirs, yours faithfully,

July 1st, 1907. C. B. KEETLEY.

*To the Editors of* THE LANCET.

SIRS,—I have read Mr. Keetley's lecture on "Conservative Surgery of the Abdomen" with considerable interest and mixed feelings. I regard that lecture as an outburst of rectitude. I suppress Mr. Keetley's adjective because I give him credit for honesty. But the rectitude possesses an angularity that may lead the budding surgeon who takes Mr. Keetley as an apostle into devious devices and damaging disappointments. Mr. Keetley deals with three subjects which he deems suitable for the application of surgical conservatism—the fibroid uterus, the morbid appendix, and the constipated colon. I may be bold, imprudent, or ignorant, but with 25 years' surgical experience behind me I venture to demur to some of the doctrines preached by Mr. Keetley to the West London Medico-Chirurgical Society. I will pass over the first two subjects as not being germane to the object of this communication.

In regard to the surgical treatment of chronic constipation I regret that Mr. Keetley did not confine his remarks to the *subject* of the treatment rather than to the *advocate* of the same. Mr. Keetley has placed "a brilliant teacher," a great surgeon, on a pillory, to be stared at or stoned by the casual passer-by, and while doing so he has shown that he has utterly misconceived or misrepresented the abnormal conditions that Mr. Lane's operation is designed to relieve.

Let me quote Mr. Keetley: "Now, if these were cases of genuine mechanical obstruction there is not much to say against the treatment and there need be no surprise at the results. But in the vast majority of the cases of chronic and obstinate constipation there is either no mechanical obstruction at all, or if there is any it is at the pylorus or even in the small intestine. Was the condition of the appendix vermiformis always carefully noted?"

---

[1] THE LANCET, Dec. 17th, 1904, p. 1693.

For mechanical obstruction at the pylorus or in the small intestine other operations, as is well known, are successfully accomplished. The operation which Mr. Lane advocates and performs is for constipation caused by a definite, and I fear, seldom recognised, condition of the intestines. The whole colon is stretched and prolapsed; the centre of the transverse portion generally lies, V-shaped, on the floor of the true pelvis. This becomes loaded with scybala. It is the altered position, combined with weakening of the stretched muscular coat, that presents the "mechanical obstacle," eventuating in almost insuperable constipation. The condition leads to other evils, as dilatation of the stomach, loosening of the kidneys, displacement of the uterus, and the cachexia of auto-infection described by Metchnikoff. Mr. Keetley cannot have read Mr. Lane's monograph, in which the whole pathological condition is described with a lucidity that it seems impossible to misunderstand. I recommend its perusal.

May I give a brief outline of a case that has been under my own observation? A female patient, whose bowels had always been troublesome, suffered from nervous breakdown in 1894, ever since which she was the victim of obstinate constipation, the bowels acting only from medicine at three or four days' interval, great difficulty in evacuation being experienced and a sense remaining of something left behind. She came under my care in November, 1902, suffering from constipation, anæmia, weak heart, and uterine retroflexion. The uterus was replaced and supported by a pessary. For 16 months tonics, aperients, enemata, massage, and dieting were employed without amelioration and in March, 1905, Mr. Lane divided the ileum and anastomosed it with the sigmoid flexure. The appendix was examined and found healthy. Conservative surgery permitted it to remain *in situ*. Since the operation the patient has uninterruptedly improved, she has a good colour, has not much difficulty with her bowels, although the rectum has not recovered its normal tone, and she has been able to resume her work, which had been given up in 1903. Once since I discovered scybala in the cæcum. She was conscious of their presence, but in two days they had disappeared without dire result. This, I have little doubt, occasionally happens. Where is the harm? The answer is supplied by the patient's altered appearance and health.

Does the sequel justify the operation? There can be but one reply. Would an appendicostomy, with its small sinus needing constant catheterisation to keep it open—"and patients are careless"—have produced as good results? That we have yet to learn through a larger experience of cases, for which we may be indebted to Mr. Keetley. He has my blessing and encouragement. Let him persevere and, I hope, lead surgery one more step forward on its happy path. Should he succeed, I know one man who will follow his lead with pleasure and accord him full recognition. He is Arbuthnot Lane. Meanwhile let us not belittle or decry, but treat generously the noble work done up to this present by those who have arduously piled stone upon stone on that edifice of which surgery and civilisation are to-day so justly proud.

But perhaps I have misunderstood. I hope so.

I am, Sirs, yours faithfully,

Reading, June 30th, 1907. J. HOPKINS WALTERS.

## GROCCO'S TRIANGLE: PHYSICAL AND ANATOMICAL EXPLANATION.

*To the Editors of* THE LANCET.

SIRS,—Dr. F. W. Forbes-Ross's contribution from the surgical side is a welcome confirmation of the reliability of this sign as one possessing a strictly "anatomical" basis and a "pleximetric" mechanism. We gather once more from his lucid explanation that the spine and the ribs act as a pleximeter, conveying to the surface the muffled character imparted to the percussion vibrations by a distant contact with fluid. The dull area in question represents (and this applies also to the quadrilateral "lower dorsal dull patch" produced by pericardial effusion) neither the shape nor the locality of the fluid accumulation, which is situated elsewhere, but only, and so far as physical conditions will permit, the shape and the zone of influence of the conductor. This was sufficiently dwelt upon in THE LANCET[1] and in the *Polyclinic* (February, 1906), and it was shown that a proof of the correctness of this explanation is contained in the *clinical crucial test* which has enabled me to rely upon this simple and rapid method for a differential diagnosis of free fluid in the pleura and for a recognition of amounts of it too small to be identified by any other means.

Dr. Forbes-Ross's answer to the question "Why is the dull area a triangle?" calls attention to a genuine factor of dulness apparently not previously noted, as no mention of it occurs in the recent review of the subject by W. G. Thayer and Marshal Fabyan in the *American Journal of Medical Sciences* (January, 1907). It is an obvious and important fact that the width of the vertebral column increases from above downwards, and that therefore the costo-spinal groove with its "dull" muscular contents has its maximum width at the level of the twelfth rib and tapers upwards. There are reasons for not regarding this structural peculiarity as a complete explanation of the "triangle," the angles of which, be it stated incidentally, are absolutely sharp in all my own tracings; but as their statement would involve diagrams and occupy too much space I must reserve further comments on that more theoretical question and conclude with a brief preliminary mention of some points of practical clinical interest. 1. I find that it is possible to percuss out two paravertebral triangles in the same subject when both pleuræ contain fluid, and I possess a series of tracings of these double triangles. 2. Fully developed ascites uncomplicated with pleural effusion also gives rise to a paravertebral triangle of relatively small height and with a rather broad base coinciding with the level of the twelfth rib. *The paravertebral triangle of ascites* may therefore be regarded as an additional physical sign of peritoneal effusion. It is always *bilateral*, and, moreover, perfectly *symmetrical* on both sides. In double pleural effusion symmetry of the two triangles has been quite the exception in my series of cases. It is interesting to note in connexion with the paravertebral triangle of ascites that, inasmuch as the diaphragm is raised, we are provided with a proof that a downward sagging of the pleural sac is not an essential factor in the production of the triangle.

I am, Sirs, yours faithfully,

Curzon-street, W., July 1st, 1907. WILLIAM EWART.

## THE MEDICAL FACULTY OF THE UNIVERSITY OF LONDON AND ST. GEORGE'S HOSPITAL.

*To the Editors of* THE LANCET.

SIRS,—The vote given on Friday, June 28th, by the Medical Faculty of the University of London must, I think, have been given without a full understanding of the negotiations which have taken place between the Senate of the University and St. George's Hospital. In order that there should be no misapprehension of the attitude of this hospital on the subject I would ask you to extend the courtesy of your columns to the inclosed letter, which I addressed on April 22nd last to the Vice-Chancellor of the University at the request of my board.

I feel confident, however, that the Senate of the University is not to be coerced into breaking the definite undertaking which has been given to this hospital, at the bidding of a majority of five, in a meeting of 149 members of the medical faculty, more especially as I learn that a site, valued at £120,000, and £70,000 in cash have been given for the express purpose of erecting the institute which formed the basis of our negotiations.—I am, Sirs, yours faithfully,

A. WILLIAM WEST,
Treasurer of St. George's Hospital.

St. George's Hospital, S.W., July 1st, 1907.

[COPY.]

St. George's Hospital, S.W., 22nd April, 1907.

To the Vice-Chancellor of the University of London.

SIR,—The board of governors of St. George's Hospital have had it brought to their knowledge that some change of policy is likely to be urged upon the Senate of the University of London, with regard to the concentration of the courses of instruction in the preliminary and intermediate subjects of the medical curriculum. The board respectfully beg you to remind the Senate of the University of the following facts. In July, 1905, an arrangement was concluded between the University authorities and the board of this hospital which provided for: (1) the cessation of any courses of instruction in the preliminary and intermediate subjects of the medical curriculum at St. George's Hospital Medical School; (2) the transference of students and of certain teachers in these subjects from the Medical School to other centres of the University, namely, University College and King's College; and (3) the guarantee on the part of this board of the payment of £500 per annum for three years to the University chest. The board were given to understand that the University had decided definitely to adopt the policy of the concentration of the preliminary and intermediate studies, and that in the near future a further centre for instruction in these subjects would be erected in the immediate neighbourhood of the Imperial Institute; for without this centre there could be no effective concentration, inasmuch as University College and King's College did not meet the requirements of other schools. The representatives of the board pointed out to the delegates of the University that the transference of their students to University College and King's College must act to the detriment of their school and diminish the number of students entering each year, until this third centre had been erected; but they agreed to sacrifice their own immediate interests and adopted the agreement of July, 1905 referred to above, as they felt so strongly that the policy of the University was the right one, and the one most calculated to assist medical education in London and to attract students to the metropolis. They entered into this agreement, however, on the distinct understanding that a third centre of instruction would be erected in the immediate neighbourhood of the Imperial Institute within a few years. They were informed that such a scheme was the settled policy of the Senate of the University, that it had been approved *nemine contradicente* by the Medical Faculty, that an appeal had been issued soliciting funds for such an institute, that His Majesty the King had expressed approval of the scheme and had graciously subscribed to the appeal, that His Royal Highness the Prince of Wales had referred to the matter in terms of appreciation, and that King Edward's Hospital Fund had expressed satisfaction on the ground that such concentration would put an end to the practice of the funds of the charitable public, which were subscribed for hospital purposes, being diverted to the purposes of medical education.

---

[1] THE LANCET, July 22nd, 1905, p. 216.

The board is of opinion that any departure from the settled policy of the University in the matter of the erection of a third centre in the immediate neighbourhood of the Imperial Institute would be a grave breach of the contract entered into between the University and this hospital, and they feel assured that the Senate will refuse, when all facts are considered, to countenance any such breach of faith.

I am, Sir, your obedient servant,
(Signed) A. WILLIAM WEST, Treasurer.

⁂ Our opinion on the question is well known. We believe that the abandonment of the Kensington centre for instruction in preliminary studies is a retrograde movement, and we trust that the Senate of the University of London may yet take this view.—ED. L.

## NOTES OF A CASE IN WHICH GLYCOSURIA, DEPENDING UPON CHOLECYSTITIS AND CHOLANGITIS, DISAPPEARED AFTER DRAINAGE OF THE BILE-DUCTS.

*To the Editors of* THE LANCET.

SIRS,—Mr. W. Gifford Nash has very kindly written to me to say that he has also had a case of glycosuria which was cured by removal of a gall-stone. This was published in THE LANCET, Nov. 1st, 1902, p. 1192. I very much regret that I had overlooked it.

I am obliged to Mr. A. W. Mayo Robson for his suggested correction of the title I gave the notes. The same idea had presented itself to me, but I was afraid the title would occupy more space than the notes themselves. I am sorry to say that, in spite of Mr. Mayo Robson's advocacy, glycosuria not only has been hitherto, but is still, regarded as a bar to operation by nearly all those with whom I have spoken upon the subject.

I am, Sirs, yours faithfully,
Wimpole-street, W., July 1st, 1907. C. MANSELL MOULLIN.

## INSURANCE AGAINST SICKNESS.

*To the Editors of* THE LANCET.

SIRS,—Like everything that comes from his pen my excellent friend Dr. J. G. Glover's letter on the Workmen's Compensation Act does honour both to his head and heart. His feelings towards those who minister to his daily comfort show his splendidly benevolent spirit, while his appeal to the insurance associations to cast their net wider in these days of fierce competition between the different companies, from the point of view of business, is almost certain to succeed. May I venture to suggest one other risk which I have long thought it a pity has not been taken up by insurance offices. I refer to a provision against the chance of insanity, in the shape of an annuity to the insurer when that deplorable event takes place. All the statistics are ready at hand and the only difficulty would lie in estimating with sufficient accuracy the necessary loading of the particular "life" against hereditary tendencies. Take as an example: Suppose an individual with a clean history wished to insure £100 a year in the event of his becoming insane. Suppose, further, he becomes a lunatic and lives in that state of mental aberration for 30 years. The chance of his becoming chargeable is, we know, about 1 in 300. 300 individual guineas would leave an ample profit to the insuring company who had to pay the £100 yearly. And these figures do not take into account that the insurer would not at once become chargeable on the company's funds, but most likely if he began early would have made many payments before he had the misfortune to lose his reason.

Surely, Sirs, of all the ills of life nothing can be worse than for a man or woman in good position, by no fault of his or hers, to have to submit to be cared for by public, or even by private, charity. I have had the lamentable experience of shaking hands with a poor lunatic college class-fellow fallen so low as to be herded with paupers. Alas! the pity of it! I have, too, good reasons for not subscribing my name. I enclose my card, and am, Sirs, yours,

A WARM FRIEND OF THE INSANE AND THE HELPLESS.
July 2nd, 1907.

## THE NEW VACCINATION ORDER.

*To the Editors of* THE LANCET.

SIRS,—Your correspondent "Another Public Vaccinator" in your issue of June 29th, p. 1806, asks, "What are the best steps to take to induce the various boards of guardians to grant us a reasonable fee for the services we are called upon to render?" One step is obvious; that all public vaccinators should procure from the Association of Public Vaccinators (the secretary's address is 1, Mitre-court Buildings, Temple, London, E.C.) copies of the article lately issued in your columns, which you have kindly allowed the association to reprint, and of the memorandum issued last week by that association. Copies can be obtained by public vaccinators at cost price and a copy of each document should be sent to every member of every board of guardians; a few shillings would supply each public vaccinator with the necessary copies, if he will take the trouble to address the envelope to the individual guardians. May I be allowed to urge public vaccinators to take this trouble? At such a crisis they must look after their own interests and try to educate the local authorities. Many boards of guardians are ready to treat their officials fairly, but they are ignorant of the requirements entailed by the Vaccination Orders.

I am, Sirs, yours faithfully,
July 3rd, 1907. HERCULES TO THE WAGGONER.

## NISBET'S MEDICAL DIRECTORY.

*To the Editors of* THE LANCET.

SIRS,—May I through your valuable journal ask those medical men who have not returned the circulars issued for this directory to do so, as it will be a matter of regret for all concerned if the information desired arrives too late for insertion. I am, Sirs, yours faithfully,

THE EDITOR OF NISBET'S MEDICAL DIRECTORY.
21, Berners-street, W., July 3rd, 1907.

---

**MISSIONARY HOSPITAL IN PERSIA.**—Major C. Ducat, H.M. Consul at Kerman, states in his annual report that the hospital of the Church Missionary Society continues to do good work and is outgrowing its present quarters. The late Governor made a grant of land as a site for a new hospital, but the grant is subject to the confirmation of the Persian Government, which has been applied for. Major Ducat adds: "What proper medical advice means in this country is shown by the fact that the news of the coming of Europeans, all of whom are taken to be doctors, spreads from village to village, and one's camp is besieged almost before it is pitched by people some of whom have come from ten to 20 miles and must have started in the middle of the night. The small European colony remains much the same as last year. The Kermanis are much less fanatical than any of the other Persians and there is no feeling of animosity to Europeans. The Khans and upper class of Persians are most friendly and a large number of the lower class either bow or wish one a respectful salaam."

# SOME TURKISH LAZARETS

## AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(*With Reproductions of Photographs taken by the Author.*)

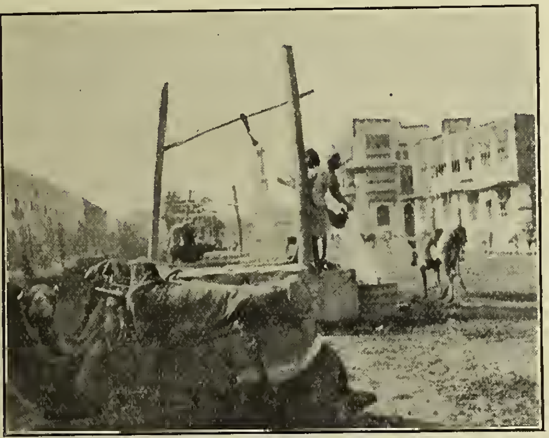
### IX.[1]

### THE WATER-SUPPLY OF JEDDAH (*continued*).

*Well Waters; Wells in the Town and in the Desert.—Tube Wells.—Mode of Distribution of the Water.—General Inadequacy of the Supply both in Quantity and Quality; Threatened Water Famine.—Decision to put up Condensers.*

*Well waters.*—There are a considerable number of wells in Jeddah, in the courtyards of the houses or "hoches." They are mostly "shallow" wells, and are often situated dangerously close to cesspools in the same yard. There are a few public wells in the streets; they are rarely properly protected from surface impurities. Near the Mecca Gate, however, there is a row of five large, deep wells with good parapets round and the masonry lining in fairly good condition. They may be seen in Fig. 31. Well water in Jeddah is always brackish; it is said to be employed solely for washing or other external purposes. Anyone can come and take the water, but it appears to be distributed mostly by the "saggas," or men who carry the water in skins or petroleum tins and sell it at about a penny the large skin, or a halfpenny the petroleum tin.

FIG. 31.

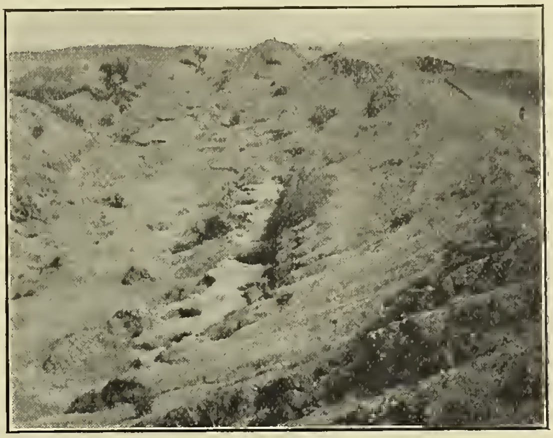


Wells near the Mecca Gate.

Outside the walls of Jeddah an infinite number of wells have been dug in the desert. If one goes along the Mecca road for a few hundred yards it can be seen that on either side of the road the desert is literally honeycombed with old wells. The curious aspect this produces is seen in Fig. 32. The depth of these wells varies greatly; some were only ten or 12, others 30 or 40, feet deep. When such a well is dug in the desert the water produced is at first drinkable though rather brackish; at the end of ten or 15 days it becomes still salter and a little later it is absolutely undrinkable. The well is then abandoned and a new one dug. In this way the sinking of wells is a process that never ceases. There are said to be four districts where the wells are most abundant; they are called Kharij-el-Hanesh, Sururia, Gholel (all three to the south of the town), and Nisyan (to the north). The water obtained from these wells seems to putrefy with exceptional rapidity; it is said to be impossible to keep it in a house longer than 24 hours. Some of the wells near Jeddah that I looked into contained only a small quantity of stagnant water at the bottom covered with a green scum.

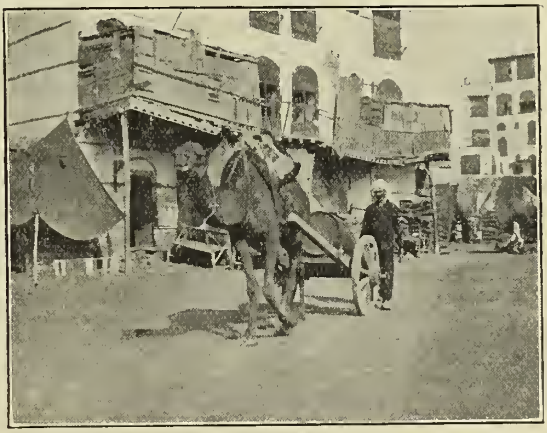
In 1900 two specialists, one of whom was said to have done successful work at Hodeidah, arrived at Jeddah with the object of making some experimental borings for tube-wells. The first borings were made near the sea, close to the building occupied by the municipality. At a depth of 80 feet they met with salt water. A second attempt, in the northern part of the town, led to no result, as a rocky stratum was met with which their instruments were unable to pierce. Then four wells were bored near the Municipal Hospital. At first each of these borings yielded three tons of water daily; the water is said to have been a little brackish but drinkable. But the yield gradually diminished and the quality of the water deteriorated. The tubes became more or less blocked with sand, the pumps were too weak, and all were abandoned save one. The tube of this well has a diameter of about one and a half inches. The pump, over which a small shed has been built, is at the free disposal of the public. The depth of the well is only some 12 metres (40 feet), as instruments for a deeper boring were not at hand. The water yielded is slightly brackish. Another well of the same kind was bored in the garden of the Kaimakam (Governor) of Jeddah and still remains; it is only used for watering the garden.

FIG. 32.



Wells in the desert near Jeddah: the road to Mecca on the right between sandhills.

FIG. 33.



Water-barrel drawn by camel.

It will be seen from the foregoing that both as regards source and quantity the water-supply of Jeddah is in a very unsatisfactory state. The method of distribution of the water is not less unsatisfactory. The water is distributed either in goat- or sheep-skins or in empty petroleum tins; these are carried by camels or donkeys, or (less often) by men called "saggas." The skins retain the complete form of the animal during life, except for the absence of the head; they have generally been long in use and they give to the water a smell and a taste that are simply disgusting to those unaccustomed to them. Recently, however, the Jeddah municipality has acquired a certain number of barrels mounted on wheels and drawn by camels. One of these is seen in Fig. 33. They are a vast improvement on the old skins and petroleum tins. Similar barrels are in use at Aden for the distribution of distilled water.

---

[1] Nos. I., II., III., IV., V., VI., VII., and VIII. were published in THE LANCET of April 27th (p. 1188), May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), and June 1st (p. 1518), 8th (p. 1607), 22nd (p. 1741), and 29th (p. 1810), 1907, respectively.

In endeavouring to find a permanent remedy for the present unsatisfactory state of the water question in Jeddah it was necessary to bear in mind the following considerations. Springs, cisterns, and wells could not be regarded as offering a sure and permanent solution of the difficulty. As regards spring water, it might perhaps be possible to repair the conduits and to clean the reservoirs; but the sources themselves are dependent on that most uncertain factor—the rainfall. Moreover, the conduits, if repaired, would soon be damaged again by the Bedouins or others unless (an impossible alternative) they were guarded day and night by troops for the whole of their length. The tanks or cisterns are also entirely dependent on the rainfall; they collect surface waters which necessarily contain many impurities. Some of the grosser impurities, it is true, are deposited in the small outer reservoirs, or at the bottom of the tanks themselves; but after long drought, when the water is getting low in the tanks, it becomes quite undrinkable, and even at the best it could scarcely be regarded as a safe water without being boiled, or at least filtered.

The well-water is equally objectionable. Whether artesian wells would give good results at Jeddah is a question that can scarcely be regarded as settled. The tube-wells hitherto sunk never went lower than about 80 feet; the one remaining in use is only 40 feet deep and therefore is still probably only yielding surface waters. Possibly true artesian wells, going, as many of them do, to depths of 500 or 600 yards or more, would give satisfactory results, but the cost of getting the expert labour required and the uncertainty of the result were factors to be considered.

Finally, the best solution of the difficulty appeared to be the provision of distilled water, prepared in large condensers, and my recommendation to this effect has been adopted. The putting up of condensers of necessity involves a considerable initial outlay, but fortunately a way of overcoming this difficulty was at hand. During the past year a public subscription was raised, under the auspices of the Sultan, for the repair of the conduits bringing water to Mecca. Such repair was, I believe, very necessary, but according to local information the situation at Jeddah was a far more urgent one than at Mecca. At the latter the quantity of water had somewhat diminished, while its quality was said to be excellent. But at Jeddah there was neither quantity nor quality; the town was threatened with an actual water famine and was reduced to drinking water of the most unpleasant and dangerous character. So bad, indeed, had it become that the few foreign residents were reduced to the highly precarious resource of obtaining their water from ships calling at the port. The further recommendation to extend the object of the public subscription so as to include the water-supply of Jeddah with that of Mecca has been acted on, and it is hoped that the sum realised will suffice to cover both.

Though costly in the first instance, the putting up of condensers should in the long run prove a very remunerative measure. A large condenser costs some £4000. That at Camaran (mentioned in an earlier article) cost 98,582 francs, including mounting and accessories; two of the Aden distillers cost just under £4000 each. Each of the latter produces about 55 tons of water daily, the former about 60. The Camaran machine burns about 45 kilogrammes of Cardiff coal per ton of water produced; those at Aden about 42 kilogrammes. The staff required need consist only of one European engineer at about £30 a month, and a certain number of native stokers and labourers. At Aden the pay of the staff for running two machines is about £65 a month. If two machines were put up at Jeddah it is probable that they would not work night and day; their total output would, perhaps, be about 80 tons a day, of which (say) 20 tons would be given to officials and 60 tons sold. The total expense, including the cost of coal, pay of staff, repairs, &c., should not exceed some £250 (P.30,000) a month. If the water were sold at the exceedingly low figure of 5*s.* (P.30) a ton it would suffice to sell 1000 tons a month, or 33 tons a day, to cover the cost. The sale of 60 tons a day would produce a clear profit of 27 tons, or, at 5*s.* the ton, £6 15*s.* a day. The total annual profit would be nearly £2500 a year. In practice, however, it is to be feared that this rosy prospect will not be fully realised, from the beginning at any rate. Vested interests are extremely strong; the owners of tanks will do all they can to prevent the sale of distilled water, if they do not actually attack the machines. The people themselves, strongly conservative by nature, will take time to get accustomed to distilled water in place of the other waters they have been used to drinking. In time, however, there should be no question of the distiller or distillers, under proper management, yielding a handsome annual profit. This aspect of the question is, however, in truth, one of secondary importance in comparison with the real necessity, on sanitary and humanitarian grounds, of providing Jeddah with a certain, abundant, and safe water-supply.

*(To be continued.)*

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Degree Day at the University.*

SATURDAY last, June 29th, which marked the end of the academic year, was also marked by the conferring of degrees at the University of Manchester. It was a remarkable fact, for this summer and for Manchester, that the day was fine, and as it was very much a ladies' day the scene in Whitworth Hall was a brilliant one. There was among the recipients of degrees a large proportion of lady Masters of Arts and Bachelors of Arts. Of 44 Bachelors of Arts taking the ordinary degree 30 were women and of the ordinary Bachelors of Science one-third were women. Illness, unhappily, did not allow of the presence of the Chancellor, the Duke of Devonshire. The degrees of Doctor of Laws and Doctor of Science respectively were conferred on Baron Kikuchi, late Minister of Education in Japan, and Dr. Hales, the eminent American astronomer and professor of astrophysics in the University of Chicago. The other degrees were then conferred. It is somewhat interesting to note that the D.Sc. and M.D. degrees, four and five in number respectively, were bestowed on men only, while the other degrees were bestowed on both men and women. In zoology the one candidate was a lady and in botany the five candidates were ladies. In the annual statement circulated by Dr. Hopkinson, the Vice-Chancellor, the number of students in the various faculties of the University was stated as follows: All faculties except medicine and technology (including 262 women students), 906; faculty of medicine (including 14 women students), 325; and faculty of technology (including three women students), 167; 50 students entered both for science and medicine. In addition to these there were 226 persons attending evening classes, 115 attending lectures on railway economics, and about 200 attending courses of lectures on law and economics at the Bankers' Institute. This very insufficient statement is enough to show the activity prevailing in the University and the influence which it is destined to exercise over the wide area from which its alumni are drawn.

### *Unsound Meat.*

As long as there are rogues it may be taken for granted that attempts will be made to sell bad meat for good and to induce people to eat all kinds of abominable and unwholesome stuff. It is well, therefore, that the markets committee of the Manchester corporation affords some protection to the public against the slink butchers and others of like mind. The need for this protection is shown by the following facts. During the four weeks ending on May 25th last, 17,820 pounds of meat were condemned in the abattoir and carcass market, 399 pounds in private slaughter-houses, 32 pounds in the Rusholme abattoir, 20 pounds in the triperies, and 14,153 pounds in the fish markets. Rabbits, black game, ducks, hares, and vegetables were also condemned in some few cases. During the month the inspectors made 1212 visits to the meat, fish, fruit, and provision shops in the poorer parts of the city.

### *Rotten Grain and the Chickens.*

The law, it appears, allows of spoiled or rotten grain being used for feeding our domestic fowls, if not for our own feeding. The Manchester port sanitary authority has from time to time condemned a small percentage of the grain cargoes at the docks, and this damaged grain heats and forms a fine soil for the growth of moulds and bacteria. To prevent its use for human food the medical officer and inspector see it to its destination, and it appears that this rotten grain, "which contains considerable colonies" of dangerous bacilli, is used for making some kind of poultry food. It is not a pleasant idea that the chickens which one buys may have been fed on revolting and unwholesome refuse and that eggs are eaten which come from fowls fed on the same undesirable kind of stuff.

### *St. Mary's Hospitals.*

The annual meeting of the friends and supporters of the St. Mary's Hospitals was held on June 19th. The work which had been done during the last year was extremely heavy but, as usual, while the work presses forwards the means for carrying it on lag behind. The expenditure last year was £10,908, while the total income was only £6956, leaving a net deficit on the year's working of £3952. At the end of 1905 the deficit balance was £8763. There is a further deficit balance of £12,400 remaining on the building account of the hospital in Whitworth-street West which has been transferred to the general account, so that the total adverse balance at the end of 1906 amounted to £25,000. Towards meeting this, £12,000 out of capital funds have been drawn on, which, of course, means a smaller income from investments. Expenses are being curtailed; the Clifford-street Hospital—i.e., the old Southern Hospital—is to be closed and the gynæcological and children's beds transferred to Whitworth-street West till the new hospital in Oxford-street and High-street is ready for their reception. An earnest appeal was made for generous help, the chairman reminding the public that if the work of St. Mary's Hospitals was not done there was no other existing institution to take it up. These hospitals have always done an unostentatious but most valuable work for the poor mothers and children of Manchester, and if more of the well-to-do people of Manchester thought about it and tried to realise it there would be no difficulty in getting the help required.

### *Medical Man and the Midnight Visitor.*

Dr. G. E. Orme of Clitheroe had an exciting adventure on the night of June 27th. He went to his bedroom about midnight, when a man without his shoes dashed past him towards the stairs. Dr. Orme followed, threw his suspicious visitor, and held him till a policeman, telephoned for by Mrs. Orme, arrived and took the man into custody.

July 3rd.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

### *Treatment of Tuberculosis at Merthyr Tydvil.*

THE Poor-law inspectors of the Local Government Board have upon several occasions reported upon the excellent administration of the infirmary which is attached to the workhouse at Merthyr Tydvil. The medical officer to this institution, Mr. J. L. W. Ward, opened a discussion upon the best methods of treating tuberculous patients by Poor-law authorities at a conference of members of boards of guardians held at Merthyr on June 26th. While recognising the necessity for improving the houses and the surroundings of the working classes Mr. Ward considered that the evidence in favour of sanatorium treatment of the disease was undeniable. He advocated the establishment of inexpensive buildings in connexion with workhouse infirmaries where selected cases could be properly treated. In the Merthyr Infirmary, where there does not appear to be any special provision made for these patients, there were treated during the past three years 128 cases of pulmonary tuberculosis, of which number 47, or 36 per cent., terminated fatally.

### *Sanitation of Aberdare.*

Notwithstanding the high death-rates which have been recorded in Aberdare in recent years, together with the prevalence of infectious disease and an unusually high rate of infantile mortality, the urban district council has shown little or no desire to improve the sanitary condition of the town which has a population approaching 50,000. The recently issued report of Dr. J. Spencer Low, a medical inspector of the Local Government Board, appears to have stimulated the council to activity in some directions. At a special meeting of the authority held to consider the recommendations contained in the report it was decided to take steps to provide a proper isolation hospital. This decision was apparently come to with reluctance, for one member of the council remarked that he "did not like to waste the ratepayers' money, but in this case it could not be avoided." Other recommendations of Dr. Low were either referred to the health committee or their consideration was deferred.

### *Vaccination Fees at Warminster.*

At the meeting of the Warminster (Wiltshire) board of guardians, held on June 24th, it was resolved not to reduce the fees of the public vaccinators in October next. This course was adopted owing to the fact that the public vaccinators of the Warminster union were the only ones in Wiltshire who, in 1898, accepted the minimum fees allowed under the Act.

### *The Pharmaceutical Society and the Sale of Poisons.*

At the Plymouth county court on June 26th a druggist's assistant was summoned for having sold poison contrary to Section 15 of the Pharmaceutical Act of 1868. Evidence showed that the defendant had sold cough medicine containing morphine and he was fined £5 and costs. The prosecution was instituted by the Pharmaceutical Society.

### *Paignton Waterworks.*

The works at Holne Moor, Dartmoor, constructed at a cost of £111,000 for the Paignton urban district council to supplement the water-supply of Paignton, and also to afford supplies to Teignmouth and Brixham, were formally opened on June 26th by Mr. Layland Barratt, M.P., in the presence of a large gathering.

July 1st.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Work and Objects of a Nurses' Training Home.*

CONSIDERABLE dissatisfaction is being expressed by the medical practitioners in Govan in connexion with the methods adopted at the Nurses' Training Home and the questions involved are of wide general interest. The home provides nursing in their own cottages for the working classes and poor in the district of Govan and elsewhere and trains women as cottage nurses and certificated midwives for work in rural and other districts. In the home lectures are given to the nurses by medical men and instruction in nursing is given by the matron. The practical experience is gained by the pupil nurses going out to nurse patients in their own homes, either with or without the supervision of a medical man. In some cases the nurse resides in the patient's house but in most cases the nursing is done by visits to the patient once or twice daily. The midwifery training is by lectures in the home from a medical man and by practice on patients in the neighbourhood under the supervision of the midwife of the home. This period of training extends in all to six months and is supposed to be sufficient to enable the students to be sent to country districts as cottage nurses and rural midwives. It is contended for the system that a body of nurses is being trained who can undertake in the houses of the working class and poor duties such as cooking, washing, and the care of children in addition to the nursing of the patient. The minimum fee for the midwife is 7*s*. 6*d*., and this is supposed to be restricted to houses where the householder's average weekly wage does not exceed 30*s*. The contention of the medical men of the district is that the home enters into unfair competition with the medical men, seeing that cases other than maternity ones are being treated by the nurses without a medical man in attendance, whilst in deciding what houses are eligible to be attended by the nurses no account is taken of the income of the family. It is also suggested that the real aim of the home is not so much the benefit of the poorer inhabitants of Govan as the turning out into country districts of women imperfectly trained as nurses and midwives. The executive committee of the home was approached by the Govan Medical Association in connexion with the matter, but although some concessions were made as regards the rules regulating the relations of the nurses to their patients, the medical practitioners of the district think that they still have grounds for dissatisfaction.

### *St. Andrew's Ambulance Association.*

The annual report of this association shows that during the past year 7874 calls have been made on the wagons of the association, the total number of patients conveyed since its formation being now 85,150. In Glasgow alone the number of calls was 5195, representing an average of 14·23 turns out daily. Of these, 3155 were to accidents and 2040 to cases of illness. Lord Blythswood has accepted the honorary presidentship of the association in place of the Marquis of Breadalbane, recently resigned.

### *Death by Lightning.*

During the thunderstorm last Saturday a distressing fatality by lightning occurred on Lethamhill golf links in the neighbourhood of Glasgow. At the time of the occurrence the weather was dry, and though the sky was lowering there was nothing to indicate the near approach of thunder. The unfortunate player was in the act of playing a mashie shot when there was a vivid flash of lightning which struck him. The lightning passed through his body, making a hole as if caused by a bullet in his head. The hair of the right side of the head and moustache was burned, and blue marks, by which the course of the current could be traced, were noticeable on the inside of the left thigh, the left knee, and both feet. The clothing was reduced to longitudinal shreds, buttons were detached from some of the garments, the soles were torn from the boots, and the works of a watch which he carried were shattered, although the gun-metal case was not affected. The lightning made a hole in the ground about six feet square and one foot deep. The club along which presumably the current travelled was undamaged. The unfortunate man's partner, who was standing some yards away, was thrown heavily to the ground but escaped with the shock.

### *Bacteriological Investigations in Cerebro-spinal Fever.*

An interesting report has just been issued by Dr. R. M. Buchanan, bacteriologist to the city of Glasgow, in connexion with cerebro-spinal meningitis. For some time past cerebro-spinal fever "contacts" have been subjected to a systematic examination for evidence of the meningococcus, and for this purpose swabs have been taken of the secretion of the naso-pharynx. The principal difficulty has hitherto been that in the throat there exist several organisms closely resembling the meningococcus, but Dr. Buchanan believes that he has now obtained a nutrient medium which serves to demonstrate the organism in the throats of a certain proportion of patients and "contacts" within two to three days. During the month of May eight cases of cerebro-spinal meningitis came under bacteriological investigation for verification of the diagnosis, and in seven of these the meningococcus was demonstrated. The "contacts" examined during the month numbered 81, representing 20 families. In 12 of these families an organism was found in the throat, which had all the microscopical and cultural characters of the meningococcus. In five of the families it was found in one individual, in six of the families in two individuals, and in one family in three individuals—giving 20 positive results in the 81 "contacts." These results have principally been got in adults. In addition, the naso-pharyngeal secretion of seven patients and four convalescents—all verified cases—was examined. The meningococcus was found in three of the patients on the twenty-third, twenty-sixth, and sixty-first days of illness respectively, and in all the convalescents on the seventeenth, thirty-fifth, fifty-sixth, and seventy-fifth day from the onset of their respective illnesses. These results serve to indicate that the disease may be carried and spread by individuals who offer no evidence of its presence and that it may remain for a long time in the throats of individuals who are recovering from the disease.

### *Medical Appointments in Glasgow.*

Dr. W. R. Jack has been appointed an assistant physician to the Western Infirmary. Dr. Ivy McKenzie has been appointed lecturer on medicine in the Western Medical School in place of Dr. John M. Cowan who has gone to Anderson's Medical College as professor of medicine.

### *Legacies to Blairgowrie Institutions.*

By the death of Mr. John Scott of Blairgowrie the Blairgowrie and Rattray Districts Cottage Hospitals have benefited to the extent of £1000.

### *The late Dr. George Yeaman.*

Glasgow has lost one of its oldest and most highly respected practitioners in the person of Dr. George Yeaman, who died at his son's residence in Hanley on June 19th. Dr. Yeaman took his M.D. at the University of Glasgow in 1854 and had a long and honourable professional career, having at one time held the posts of assistant physician to the lying-in hospital and physician to the Dispensary for Diseases of Women and Children.

### *Forfarshire Medical Association.*

At the annual meeting of this association, Dr. W. J. Dewar, the President, being in the chair, the following were elected office-bearers for the ensuing year:—President: Dr. A. Key (Montrose). Vice-Presidents: Dr. D. Paton (Carnoustie), Dr. J. Rorie (Dundee), Dr. J. A. Dewar (Arbroath), and Mr. P. Steven (Dundee). Secretary: Dr. J. W. Miller (Dundee). Treasurer: Dr. W. E. Foggie (Dundee). The retiring President gave a lecture on Midwifery and General Practice. Next year will be the jubilee of the association and the meeting will be held in Dundee.

### *Resignation of the Medical Officer of Health of Stornoway.*

At a meeting of the Lewis district committee the resignation of Dr. Charles M. Macrae, medical officer of health of the parishes of Stornoway, Lochs, and Uig, was considered and accepted with regret. Dr. Macrae has been connected with public health matters in Lewis for a period of almost half a century. A committee was appointed to draw up a minute expressing the appreciation of his long and valuable services and the clerk was instructed to forward a copy to Dr. Macrae. Dr. W. Bruce, county medical officer of health, Dingwall, was appointed to the vacancies.

### *Aberdeen Deaf and Dumb Institution: Annual Report.*

The annual report for the above institution for the year 1906 shows that at Nov. 30th, 1905, the beginning of the financial year, there were 25 scholars and at the end 20. Eight children left during the year, their education having been finished, and three were admitted. The principal mode of instruction was by the sign and manual method, but each child was taught lip-speaking and reading and some of the children became very proficient in both. Kindergarten was also taught together with hand and eye training. Five boys were taught carpentry work, bench work, fretwork, and clay modelling with cast, and all the girls were taught drawing and painting. The Government grant for the year was £133 16*s.* 3*d.*

July 2nd.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Health Questions in Belfast.*

ONE of the questions specially raised before the Belfast Health Commission was the want of knowledge on the part of the health authorities of the *locale* of disease. It appears now that the public health committee of the city has had a communication from the Local Government Board of Ireland to this effect. The Local Government Board will be prepared to receive an application from the committee that an order should be made (under Section 11 of the Public Health Act, 1878) amending the duties of the registrars who are medical officers of health, so as to include the duty of making returns to the superintendent officer of health of the deaths occurring in their respective districts. As a result on June 25th a deputation from the public health committee conferred with the Local Government Board in Dublin, other topics coming up for discussion being the proposed substitution of ashbins for ashpits and the reservation of beds for the use of the corporation in the Forster Green Consumption Hospital. The deputation, which was sympathetically received, was advised to approach the Registrar-General of Ireland, as the Local Government Board considered it was the Registrar-General's duty to demand from the local registrars a copy of all deaths registered by them. The Local Government Board said that a communication had been received from a member of the corporation objecting to the arrangement entered into with the Forster Green Hospital, which would be sent to the public health committee to consider; and as to the introduction of ashbins, while the Board was greatly in favour of more frequent removal of house refuse it recommended that a case should be submitted to counsel for his opinion and then forwarded to the Board for its consideration.—At a meeting of the public health committee held on June 27th it was reported that for the week ended June 22nd 16 cases of cerebro-spinal meningitis had been notified, as compared with 17 in the previous week. Since the last meeting of the committee (June 20th) 14 cases of cerebro-spinal meningitis were notified, as against 17 during the previous week, and during the week ended June 22nd 20 deaths were registered as being caused by the disease. Of 84 patients in Purdysburn Fever Hospital 39 were suffering from the disease, 15 from scarlet fever, and 19 from typhoid fever.—Cerebro-spinal fever has broken out among the militiamen in Ballykinlear camp, near Newcastle, two cases having been removed to Purdysburn. Typhoid fever has also broken out amongst the troops in the barracks at Holywood, near Belfast.—At a meeting of the city corporation of Belfast, held on July 1st, the report of the medical superintendent officer of health for the period from May 19th to June 15th was read and from it it appears that the number of cases of infectious diseases notified during the four weeks was 192, as compared with 305 in the preceding five weeks, the most marked decrease being in the number of cases of cerebro-spinal meningitis, which numbers 74, as compared with 139. There is a slight increase in the number of cases of erysipelas, whilst the number of cases of typhoid fever and membranous croup is about the same. The average annual death-rate from all causes was 21·9. Attention was drawn to the fact—by the chairman of the baths and lodging house committee—that while a few weeks ago they proposed to admit school children to the baths free of charge on one day of the week, up to the present the Commissioners of National Education had not agreed to the proposal.

### *Down District Asylum.*

From the report of this asylum for 1906 it appears that during the year 468 men and 389 women were under treatment. Mr. M. J. Nolan, the resident medical superintendent, does not think there has been any actual increase in insanity in the district. His views on the causes of insanity in Ireland are interesting and I give them in full:—

> In a country on which the scourge of insanity has fallen with such an unusually heavy hand the local circumstances of this county are such as to enable it to resist, with some degree of success, the inroads of this terrible evil; and so we may, perhaps, learn the lesson that the prevention of insanity is to be achieved, if achieved at all, by an all-round improvement in the social life of the people. Freedom from the worst miseries associated with dire poverty, from the wearing strain of agrarian agitation, and, above all, from the mental unrest associated with rapidly declining prosperity (evident in the less fortunate districts), all combined with a marriage- and birth-rate higher than the average, a decline in the emigration rate, and a generally fairly prosperous condition of things, due in a great degree to the characteristics of the people themselves, the county of Down stands in the satisfactory position of having but one registered lunatic in 216 of its population, at a time when the average in the country is one in 178.

The average cost of each patient for the year was £22 15*s*. 4*d*., while the net average cost, deducting repayment of loans, receipts from paying patients, and other miscellaneous receipts from the gross expenditure, was £20 9*s*. 1*d*, as against £22 2*s*. 4*d*. in the previous financial year—a reduction of £1 13*s*. 3*d*. per head. In every respect this report of Mr. Nolan is a most interesting and satisfactory one.

July 2nd.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *The Treatment of Fractures of the Clavicle.*

THE papers read at the meeting of the Surgical Society on June 12th included one by Dr. Couteaud of the Naval Medical Service on the treatment of fractures of the clavicle. For several years he has treated these fractures by rest in bed, the shoulder of the side affected being at the same time placed in a certain position. This method was not only in accordance with physiological principles but was efficacious and capable of being put in practice by anyone. Complaints have been made that it was uncomfortable but this was a trivial objection to a surgical procedure which aimed at the avoidance of deformity (*chirurgie esthétique*). Allowing the arm to hang vertically over the edge of the bed caused relaxation of the contraction and stiffness of the muscles of the shoulder, a condition which was advantageous for coaptation. Swelling of the upper limb was therefore to be desired rather than feared, but it seemed to be unnecessary to maintain this attitude for more than two or three days, and it was better at the end of this period to bend the elbow and allow the forearm to rest on a pillow; this position was certain to bring about the automatic juxtaposition of the fractured ends. The œdema which this method of treatment caused was of no serious importance, being of brief duration and easily relieved. Dr. Couteaud recommended that rings which the patient might be wearing should be removed. The duration of the treatment varied from 15 to 21 days.

### *Blackening of the Tongue caused by Peroxide of Hydrogen.*

At a meeting of the Paris Society of Medicine held on June 8th M. Bizard read a paper on blackening of the tongue. The remarkable condition, to which Walerand has given the name of *langue noire pileuse* (hairy black tongue), seemed to be produced by very different causes, about most of which there was little definite knowledge. Many of the cases proceeded simply from foreign substances accidentally colouring the extremities of hypertrophied papillæ. Of this kind was the instance observed by Chatin, in which there was a decided black tint of the dorsal aspect of the tongue in several syphilitic patients who were taking mercury and making use of a gargle containing diluted peroxide of hydrogen. In the course of a week M. Bizard saw blackening of the tongue in two syphilitic patients under his care who were treated with injections of grey oil and mouthwashes of a solution of peroxide of hydrogen. It might have been supposed that the peroxide of hydrogen on coming into contact with the saliva of the mercurialised patients gave rise to a reaction which produced a brown colouration of the extremities of the lingual papillæ, but the fact was that peroxide of hydrogen might by itself cause blackening of the tongue. In a man habitually enjoying good health, not syphilitic, and free from constitutional defects, but a smoker and the subject of hypertrophy of the lingual papillæ, the daily use of a gargle of peroxide of hydrogen in half a tumblerful of warm water produced in eight days a very pronounced blackening of the dorsal aspect of the tongue. This disappeared in a few days when the peroxide of hydrogen was stopped and the surface of the tongue soon afterwards desquamated in large flakes.

### *Suggested Employment of Radioscopy and Radiography in Meat Inspection.*

Calcareous deposits are readily formed in the tuberculous lesions of the ox and the pig, and at a meeting of the Academy of Sciences held on June 12th M. Martel suggested that the recognition of such deposits by means of the Roentgen rays might be useful as an indication of deep-seated isolated tuberculous centres, especially in the interior of the superficial or deep glands which were always more or less imbedded in fat. When the meat could be conveniently spread out for examination radioscopy clearly showed the tuberculous portions. Healthy glandular tissue cast little shadow with the rays as it was almost transparent to them, but tuberculous glands cast a shadow of granular appearance varying in intensity according to the amount of calcareous infiltration. Isolated lesions were recognised by their shadows having the granular aspect which indicated the presence of salts of lime. Meat which gave a negative result on examination with the Roentgen rays might, however, be tuberculous. Proper allowance being made for its limitations, the method had the advantages that the meat did not require to be cut and that the examination took very little time.

### *The Medical Profession in Narbonne.*

I do not propose to refer to the political unrest and agitation in the south of France except in so far as it has affected the medical profession. The military authorities having refused to supply the medical men of Narbonne with the passes necessary to enable them to visit patients in the disturbed districts these practitioners have published a letter informing the townspeople that they cannot promise to attend patients regularly in the area occupied by the troops. They have also published the letter in which their request for passes was refused. It has been the practice for three practitioners to be selected by the military authorities each month for the purpose of giving advice with respect to the discharge of soldiers unfit for service (*réforme*), but a meeting has now been held at which it was resolved to discontinue this work. The practitioners also refuse to attend the gendarmes of the district.

### *Officinal Preparations of Mistletoe.*

M. R Gaultier, in presenting to the Therapeutical Society a work sent by M. Delassus, said that he had himself observed a distinct and long-continued reduction of the arterial pressure when pills containing aqueous extract of mistletoe were administered. Some fresh clinical facts induced him to consider this substance as hypotensive

July 1st.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*The Practitioners' Association.*

THE German Medical Practitioners' Association held its annual meeting of delegates on June 21st and 22nd at Münster in Westphalia, under the presidency of Professor Löbker of Bochum. The President, in his introductory address, pointed out that the question of sick clubs, and especially the introduction of the free-choice system, continued to be an important subject of interest for the medical profession in Germany. Although this system was making marked progress (it has recently been introduced by certain railway authorities for their employees) it still had many active adversaries. Medical men engaged at fixed salaries by sick clubs feared that they might lose a portion of their income under the free-choice system. The extension of the compulsory membership of clubs, as contemplated by the Government, would still more restrain free practice. At the present time more than one-third of the population of the German Empire belonged to sick clubs. It was said that the Government would propose to include domestic servants, agricultural labourers, and other persons earning less than 3000 marks (£150) per annum under the workmen's insurance law. Should this intention be realised, then in the Prussian province of Saxony the whole population except 4·7 per cent. would be compelled to become members of sick clubs. It was obvious that the carrying into effect of such a law was impossible without the collaboration of the medical profession. Dr. Pfalz of Düsseldorf gave an account of the existing relations between the clubs and the medical profession and refuted the arguments of the adversaries of the free-choice system, especially their assertion that the expenses were too high for the clubs. A principal point of the discussion concerned the question whether the medical men appointed at fixed salaries as medical officers to clubs should be entitled to compensation in the event of losing their present positions in consequence of the introduction of the free-choice system. A motion was finally adopted to the effect that the free-choice system ought to be introduced by law and not (as has been hitherto the case) optionally and by agreement with the clubs; that the law should contain a provision to the effect that the rights and duties of the medical men engaged in club practice must be determined by the local representatives of the profession, together with the representatives of the clubs, excluding in this way any preponderance of the club committee; that a club should not have power to dismiss a medical man but that complaints or cases of alleged misconduct must be brought before a court of arbitration; and that the medical men acting hitherto as officers of the clubs should have the income of the previous year guaranteed in the event of the introduction of the free-choice system provided that they continued their club practice under the new system. Another subject of discussion concerned the fees for certificates for private insurance companies. It was agreed that the minimum fee should be 10 marks (10*s.*). With regard to medical practice by unqualified persons, a motion was adopted to the effect that it ought to be prohibited by law.—The Leipziger Verband, an association of medical men modelled in some respects on the lines of a trade union and possessing a large strike fund, held its annual meeting the day before the meeting of the Practitioners' Association. Both organisations, which in the beginning were rather hostile to each other, have now joined in mutual coöperation. The members at the present time number 20,000, including thus nearly every medical man engaged in practice. The Verband has 124 sections and 1113 local delegates. It was reported that 3374 appointments and vacant practices were obtained for members by the instrumentality of the Verband. The shipping companies' union has undertaken to appoint medical officers to passenger vessels only under the conditions laid down by the Verband. Since its existence the Verband has dealt with 594 disputes between clubs and the medical profession, of which the result was favourable to the profession in 464 cases and favourable to the clubs in 16 cases, whilst in 114 the matter is not yet decided. The Verband has petitioned the War Office to prohibit army medical officers undertaking the work of civilian practitioners. The general staff-surgeon, as head of the Army Medical Corps, has replied that civil practice could not be closed to the army medical officers but that the War Office has issued an order prohibiting army medical officers from applying for civil appointments under other conditions than those approved by the local profession.

*Deaths of Medical Men.*

Dr. Theodor von Jürgensen, ordinary professor of medicine at Tübingen, died in that city on May 8th. He is known as one of the early promoters of hydrotherapy in Germany. As early as 1866 he recommended the treatment of enteric fever by cold baths and at a subsequent period the treatment of pneumonia by the same method. He has published many works and essays, of which the principal are an essay on the temperature of the healthy individual; on pneumonia, which as early as 1874 was regarded by him as an infectious disease; on septicæmia of obscure origin; on acute exanthemata, &c. He was born in 1840 at Flensburg in Schleswig, being the son of a medical practitioner. He received his professional education at the universities of Kiel, Breslau, and Tübingen, and after becoming qualified was appointed an assistant at the medical clinic at Kiel, where he was recognised *privat-docent* in 1864. In 1869 he became extraordinary professor at the University of Kiel and in 1873 ordinary professor at Tübingen, where he passed the remainder of his life.—The death is also reported of Dr. Litten, extraordinary professor of medicine in Berlin and chief physician to the municipal branch hospital. Professor Litten was born in 1845 and became qualified in 1870. He served in the war with France and then went for study to Vienna, Prague, London, and Edinburgh. He afterwards became an assistant to the celebrated Professor Cohnheim at Leipsic and Professor Fredrichs at Berlin. In 1897 he became chief physician to a municipal hospital. His principal work concerned the relations between accidents and internal diseases, especially pneumonia as a sequel to contusion of the thorax and traumatic endocarditis.

July 1st.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*The International Congress of Physical Therapeutics.*

AN exceptionally strong organising committee is at work on the preparations for this Congress, the second of its kind, which will be held in Rome from the middle of October to the close of the third week of that month. Its president is the Senator Guido Baccelli, professor of clinical medicine in the Roman School, and among his assessors are Dr. Leon Bianchi (medical psychology), Naples; Dr. Camillo Bozzolo (institutes of medicine), Turin; Dr. Antonio Cardarelli (clinical medicine), Naples; Dr. Achille De Giovanni (clinical medicine), Padua; Dr. Enrico de Renzi (clinical medicine), Naples; Dr. Francesco Durante (clinical surgery), Rome; Dr. Pietro Grocco (theoretical and practical medicine), Florence; Dr. Eduardo Maragliano (medical pathology), Genoa; Dr. Augusto Murri (clinical medicine), Bologna; Dr. Enrico Morselli (medical psychology and therapeutics), Genoa; Dr. Gianbattista Queirolo (clinical medicine), Pisa; Dr. Eugenio Rossoni (medical pathology), Rome; Dr. Augusto Tamburini (psychiatry, systematic and clinical), Rome; and many others, among whom I may mention the professor of medical hydrology in the Roman School, Dr. Paolo Casciani. All those of the profession who give in their names to the general secretary of the Congress, Professor Carlo Colombo, No. 1, Via Plinio, Rome, inclosing an order for 20 francs as titular members (lady associates being admitted on the same conditions for 15 francs), will be entitled to a "libretto di scontrini" (book of railway tickets) enabling them to travel from one end of the Peninsula to the other at fares reduced from 40 to 60 per cent., available from Oct. 1st to Nov. 15th. This provision was devised in concert with the Minister of Public Works by the organising committee with a view of facilitating the visits of foreign members of the Congress to the various health resorts of Italy by way of enabling them to realise the resources of the kingdom in climatic stations, in "sun-traps" on the seaboard, and in balneary institutions, thermo-mineral and other. Annexed to the Congress in Rome there will be open to all members an "Esposizione Speciale di Apparecchi per Cure Fisiche, Acque Minerali, &c.," at which there will be on view all the latest appliances and apparatus in electro-therapy, phototherapy, medical gymnastics, orthopædics, and so forth. Add to this a complete assortment of specimens of the various mineral waters known to science, "prodotti termali," and other products, alimentary and hygienic, relating to physical therapeutics, dietetics, balneology, and climatology, and together with these a collection of plans, designs, photographs, descriptions, coloured and printed, and monographs illustrative of the various health resorts, climatic stations, and balneary "cures," and some notion will be formed of the attractions offered to those of the profession who are interested in this department of medicine. Among the exhibitors at this exposition many leading houses in France, Germany, the British Isles, and America will be represented alongside those of Italy in the *locales* specially provided *ad hoc*, namely, the suite of rooms attached to the Clinica Medica of the Policlinico, with the addition of others should these prove insufficient. For all exhibits intended for this Exposition the Minister of Public Works has conceded a reduction of 50 per cent. on the charge of transport over all the railway lines of Italy, a reduction which will include not only the journey in but the return journey out, should the said exhibits not be disposed of at the Exposition. Finally, a special jury is being organised to appraise the competing exhibits and to award the prizes and marks of distinction among the competitors.

### *The Alpine "Accident" Season.*

I learn from Bellinzona, the capital of Italian Switzerland, that this "season" has made its normal commencement in the "playground of Europe." All the favourite peaks are being "stormed" by adventurous climbers, many of these latter hailing from Italy, where the "furore" for Alpine exploration has reached the point of an "obsession." Two parties have successfully scaled the Matterhorn, one party Mont Blanc, and another the Jungfrau. There are, however, three "casualties" to be registered. A young lady (aged 22 years) has been killed by a fall of 80 metres on the mountains of Andey; a gentleman has lost his life similarly by a fall on the rocks of Chez-Marqueret; and a boy, aged 18 years, from Göschenen, while gathering flowers in the mountain valley of Ossemburg also lost his footing with fatal consequences.

### *The Civic Honours to Lord Lister.*

No foreign name is more honoured among Italians than that of the "Inventore della Medicazione Antisettica," except it be that of Pasteur. Thanks to these two "heroes of science" the surgeon's art in Italy, always conspicuous for its "assured touch" and its "artistic dexterity," is no longer shadowed by the high death-rate that used to compromise it. As I write, all the leading journals of the evening report the conferring of the Freedom of the City of London on Lord Lister in terms of cordial approbation—some of them, the "Corriere della Sera" of Milan, for instance, adding a brief biographical note on the career of the "venerando scienziato."

June 29th.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

### *The Tropics as the Future Centre of Civilisation.*

Colonel W. C. Gorgas, chief sanitary officer of the Isthmian Canal Commission, in an address before the graduating class of the Cornell Medical College, predicts that within the next two or three centuries the tropics will be the centres of wealth, civilisation, and population, as they were in the dawn of human history. This prediction is based on his experience in sanitation in the Panama Zone. He stated that through the efforts of the sanitary branch of the commission malaria and yellow fever have been brought under control. There has been no yellow fever on the Isthmus of Panama for over a year and malarial fevers have been reduced to a minimum. So completely has the stegomyia been reduced in numbers that yellow fever would not spread if it were introduced. He says that among the 6000 Americans connected with the canal work, which number includes 1200 American women and children, the families of these employees, there is very little sickness of any kind and their general appearance is fully as vigorous and robust as that of the same number of people in the United States. He concludes that the sanitarian can now show that any population coming into the tropics can protect itself against these two diseases by measures that are both simple and inexpensive; that these two diseases eliminated, life in the tropics for the Anglo-Saxon will be more healthful than in the temperate zones; and that gradually within the next two or three centuries tropical countries, which offer a much greater return for man's labour than do the temperate zones, will be peopled by the white races and become the centres of wealth, population, and civilisation.

### *Membership of the American Medical Association.*

The recent report of the secretary of the American Medical Association shows that its membership on May 1st, 1907, was 27,515. The changes in the membership during the preceding year show the condition of the association. The discontinuances were 2135, of which 258 were by death, 1005 by resignation, 424 were dropped for non-payment of dues, 419 were found to be ineligible, and 29 were not traced. The comparatively large number of non-eligible members dropped was due to a systematic revision of the membership list. There have been added to the list during the year 6014 names, giving a total membership of 27,515, as already stated.

### *A Law Authorising the Sterilisation of Defectives.*

An Act has passed the Legislature of the State of Indiana entitled "An Act to Prevent Procreation of Confirmed Criminals, Idiots, Imbeciles, and Rapists." The preamble states that "heredity plays a most important part in the transmission of crime, idiocy, and imbecility." The law provides that it shall be compulsory for each and every institution in the State entrusted with the care of confirmed criminals, idiots, rapists, and imbeciles to appoint upon its staff, in addition to the regular institutional physician, two skilled surgeons of recognised ability whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If in the judgment of this committee of experts and the board of managers procreation is inadvisable and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced unimprovable.

### *Pasteurisation of City Milk.*

The board of aldermen of New York has decided that the pasteurisation of the milk sold in New York is neither necessary nor desirable, notwithstanding the vast array of facts that were brought forward to prove the contrary. The result of the discussion, however, has been very useful, not only in the city but throughout the country, in creating a public sentiment in favour of measures to secure a pure milk-supply. The first measure which attracts the public is that of securing a pure quality of milk directly from the dairy by the sanitation of the entire dairy establishment. Over the entire country public attention is being directed to the condition of the local dairies supplying the communities and greater and greater pressure is being brought to bear upon the milk producers in regard to the necessity of having their dairies in perfect sanitary condition. Health authorities, while insisting upon the improvement of the dairies, affirm that this will be a very gradual reform, but meantime pasteurisation of the milk for the public must be adopted as the only available method of sterilising the milk. The milk commission of Washington represents the position of the health authorities throughout the country in a recent report. It states as follows: "It must be apparent that it will require time and education to secure compliance with even reasonable safeguards and it is equally evident that the number of dairy farms now in a position to live up to sanitary requirements will supply but a small percentage of the population, although it is hoped they will be stimulated into existence by trade competition and the refusal of the public to buy dirty milk at any price. Until this is accomplished the committee, in the interests of public health, strongly advocates clarification and pasteurisation of all milk."

### *Industrial Settlement for Tuberculosis.*

The Saranac Lake Industrial Settlement has been formed to give employment to persons who have reached the arrested stage in pulmonary tuberculosis and can no longer remain in institutions for incipient cases. This improvement in the treatment of the subjects of tuberculosis has been inaugurated under the direction of Dr. E. L. Trudeau, to whom this country owes so much for his pioneer work in the care of the victims of tuberculosis. It is held that this class of persons should not return to city conditions in order to support themselves, and to this end light employment along the lines of gardening, poultry raising, &c., is to be undertaken.

June 24th.

# Obituary.

## SIR WILLIAM TENNANT GAIRDNER, K.C.B., M.D. EDIN. & DUB., LL.D. EDIN., F.R.S., F.R.C.P. EDIN. & IREL.

HONORARY PHYSICIAN-IN-ORDINARY TO H.M. THE KING IN SCOTLAND; HONORARY CONSULTING PHYSICIAN TO THE WESTERN INFIRMARY, GLASGOW; LATE PROFESSOR OF MEDICINE IN THE UNIVERSITY OF GLASGOW, ETC.

BY the death of Sir William Gairdner, which occurred somewhat suddenly on June 28th at Bracondale, Colinton, Midlothian, Scotland has lost one of the most learned and cultured exponents of medicine who taught in her schools during the past century. He had reached the ripe age of 82 years but he never ceased to take an active interest in the affairs of his profession. Thus as recently as 1902 he wrote in the *Glasgow Medical Journal* on the danger of the growing practice of prescribing opium in pneumonia, and two years later he made an interesting communication to our own columns describing a simple device by which he was able to make the most of his eyesight for reading, in spite of the fact that he had totally lost the use of one eye by a detachment of the retina ten years before and that there was a commencing cataract in the remaining eye.

William Tennant Gairdner was the son of an Edinburgh physician, Dr. John Gairdner, and was born in Edinburgh on Nov. 8th, 1824. As he was destined for the medical profession he naturally entered the university of his native town, in which he graduated M.D. in 1845, and the following year he held the post of resident medical officer at the Edinburgh Royal Infirmary; it soon became evident that he was marked out for distinction and in 1848 he was appointed pathologist to that institution. In 1850, at the early age of 26 years, he was elected a Fellow of the Royal College of Physicians of Edinburgh, which prepared the way, three years later, for his appointment as physician to the Royal Infirmary. At this time he began his teaching career, becoming the extra-mural lecturer in Edinburgh on the practice of medicine and clinical medicine. He held this post until 1862, by which time he had acquired such a reputation, both as physician and teacher, that he was invited by the University of Glasgow to accept the chair of medicine that had fallen vacant in that school owing to the resignation of Dr. John Macfarlane. He accepted the offer and remained professor of physic in Glasgow until the year 1900 and *ex-officio* physician to the Glasgow Royal Infirmary, with the result that not only the University but also the city derived the greatest benefit from his presence in their midst. He had already shown his interest in the then elementary science of public health, as was evinced by his publishing, in the year of his appointment to Glasgow, a valuable book entitled "Public Health in Relation to Air and Water," which epitomised what was then known on the subject, and he was consequently asked to undertake the onerous task of chief medical officer of health of the city of Glasgow at a time when that city was crying out for sanitary reform. He considered it his duty to accept this post, although it considerably hampered his clinical opportunities, and for ten years carried out his duties with such public-spirited zeal and efficiency that his name deserves remembrance as that of a true pioneer of sanitary reform. He had to face conditions of dirt and overcrowding such as do not exist in Great Britain to-day, and which are best exemplified by the fact that perhaps his most important contribution to clinical medicine was based on the opportunities which Glasgow gave him to study the treatment of typhus fever. He did most valuable work also in combating a severe epidemic of small-pox and, as we have indicated, his general sanitary work effected a complete change for the good in the unhealthy quarters of the city. His labours brought recognition of their merit, both within and without his University, for he was appointed an honorary physician-in-ordinary in Scotland to Queen Victoria, the present King conferring a similar honour upon him at his accession. He was also elected a Fellow of the Royal Society and, moreover, received the honorary degrees of LL.D. at Edinburgh in 1883 and of M.D. at Dublin in 1887; in the same year he also received the honorary Fellowship of the Royal College of Physicians in the latter city. Other distinctions that fell to him were the Presidency of the British Medical Association in 1888 and the important task of representing the University of Glasgow in the General Medical Council from 1893 to 1903. He relinquished his chair in this University in 1900 and retired to his birthplace, Edinburgh, to spend the evening of his days. In 1889 he had received an official recognition of his public services in his creation as a K.C.B. He married in 1870 Helen Bridget Wright of Norwich, who survives him, as do his four sons and three daughters.

Sir William Gairdner will be remembered in his universities as an original thinker and as a teacher with a marked personal attraction. He appealed more especially to the thoughtful student, although he must have inspired all who knew him with an admiration for his genuine love of truth. His disregard for accepted authority until he had proved the matter for himself more than once brought on him the reproaches of his generation and his sharp conflicts with the opinions of other people when he was convinced of their error made some think that he was influenced by a personal animus against them. Nothing could be further from the case, his sole motive was an almost painfully exact sense of duty which doubtless had its origin in the deeply religious cast of mind that dominated his whole life and to which he did not fear to give public expression in the thoughtful and scholarly presidential address that he delivered before the British Medical Association in 1888, in which he was greatly concerned to demonstrate that there was no true incompatibility between a genuine personal religion and a keen appreciation of natural science; indeed, in this same address he urged the necessity of a deeper preliminary training of medical men in this subject than was at that time required. The address was published with others under the title of "The Physician as Naturalist" in the year after its delivery. Other works that he published were, "Lectures to Practitioners" (jointly with Dr. J. Coats) in 1888, in which he dealt with tabes mesenterica and urged that the disease was not necessarily so hopeless as was then believed; he also drew attention to the method of treating it by simple laparotomy and irrigation. In the same year appeared his work "On Some Modern Aspects of Insanity," and his last publication was in 1903, when his kindly philosophy crystallised out into a non-medical work entitled "The Three Things that Abide," to wit, the three great Christian virtues which he had conspicuously shown. Of his occasional contributions to the medical press we may note certain studies in heart disease, especially those dealing with angina pectoris, aortic aneurysm, and sudden death. An introductory lecture on clinical medicine delivered to his Edinburgh students at the beginning of his last course there, which was reproduced in THE LANCET of Jan. 25th, 1862, well reveals the man's mind. The utmost endeavour is apparent to combine his duty towards his students with his duty towards his patients, and he insists that a hospital ward is a sick-room before it is a class-room. He insisted always on the *vis medicatrix naturæ* and his expectant method of treatment earned him in some quarters an undeserved reputation for an intolerance of drugs. He was far too much on the side of truth to take up any such bigoted standpoint; the principle that he did oppose was that of mediævalism, of blind and unreasoning submission to academic authority. We may quote from a leading article that was written about his methods in our columns in 1864.

> Before attaining to his high position, and equally since, it has been his delight to teach others and himself not to dogmatise, but to observe, to reason, to get rid of errors, and to establish practice on sound basis such as could be defended before men of science. ...... A feature of Dr. Gairdner's writings, which must always command respect, is his great moderation and care, both of statement and inference; the anxious way in which he qualifies conclusions which may seem favourable to his own views, or against the views and practises of others. ...... His sense of responsibility as physician to a great hospital, giving the cue to hundreds of pupils, appears in every line, as does also the sense of evidence and what constitutes proof of the virtue of medicine or any given line of treatment.

This was written *apropos* of an article contributed to THE LANCET of March 12th, 1864, which was probably the most important of Gairdner's contributions to clinical medicine, and has a somewhat apposite significance at the present day. At that time typhus fever was prevalent both in Glasgow and in London, and in accordance with a fashion that had recently been introduced to medical practice, especially in dealing with the exanthemata, it was being almost universally treated with enormous doses of alcoholic stimulants. The great apostle of this method was Dr. Todd who was running up a wine and spirit bill on behalf of his patients at King's College Hospital that was only possible in an age that knew no official inspection of hospital accounts.

SIR WILLIAM TENNANT GAIRDNER, K.C.B., M.D.
*(From a photograph by Messrs. Elliott and Fry.)*

Gairdner adopted the plan of withholding alcoholic stimulants from his younger patients suffering from typhus fever and giving it in very moderate doses to only a small percentage of the adult cases that were under his care at Glasgow. The result was that his total mortality was for all cases 11·93 per cent., whilst amongst the King's College Hospital patients it was, according to Murchison, 25 per cent.; the latter institution lost 17 per cent. of the youngest patients, and for the same age Gairdner's percentage mortality was less than 1. He insisted on the utility of milk in the treatment of the disease and there is no doubt that his conclusive demonstration that the rôle of alcoholic stimulants was not that of a specific remedy but rather that of an occasional therapeutic aid did much to convert the profession from the exaggerated view that was then held about its value. We have said enough of his scientific writings to show that he was a man who has left his mark on the thought of his age and materially contributed to the progress of medicine.

We have received the following appreciation of Sir William Gairdner from Dr. J. G. Glover, a friend of the distinguished physician:—

"It has been my privilege to enjoy the friendship of Sir William Gairdner for 40 years. I have known him longer even than that. My earliest recollection of him was in the Edinburgh University days of the 'fifties,' in which his familiar figure and energy were much in evidence as pathologist, succeeding Dr. Bennett. In the year 1866, in Glasgow, I had occasion to consult him, then professor of medicine in the University of Glasgow, in regard to a disease in the knowledge and treatment of which he was a master—typhus fever. The patient was a relative and I found Gairdner not only a master but a sympathetic friend who gave me the most valued help and saw me safely through my anxiety. This was a historical time in the sanitation of Glasgow. Its sickness, and especially its perpetual harbouring of typhus fever, had become a scandal and a discredit. Fortunately, Gairdner had become its medical officer of health and under his great lead there was well begun the work of clearing large areas of the city by razing to the ground the hopelessly infected and insanitary property which served as a centre and focus of disease extending far beyond its own immediate neighbourhood. Dr. Gairdner kindly took me round the city and showed me the work both of destruction and construction in process with obvious pride, enunciating the large principles upon which such work has to be done by municipalities to make cities wholesome and worthy of Christian civilisation. The work was most congenial to him and it may be doubted whether any other was ever more so, although he took it up originally with some demur, as being likely to sever him from clinical pursuits. He persevered with it for ten years and only abandoned it when the duties of the University and his consulting practice compelled him to do so. But his interest in its continuance never flagged and almost the latest letter I had from him was an enthusiastic eulogy of the 'Memorial Volume of the Writings'[1] of his great successor, Dr. J. B. Russell, which he described as 'a monument to a very admirable man for whom I have the greatest possible affection.' If there was any other work which Gairdner loved more than the transformation of a sickly and infected city into a comparatively healthy one it was the work of medical education. As theorist and in practice, as professor or as clinician, he was enthusiastic to the last as a teacher of medicine. Whether in the post-mortem theatre or in the hospital ward, or at a medical society, or in the chair of the British Association, his zeal and his cheerful optimism raised all his work to a kind of worship—'ever as in the Great Taskmaster's eye.' His interest in getting to know all that was knowable amounted to a passion and kept him a student to the last everywhere. He only relinquished his chair of medicine when blindness in part had overtaken him and physical power to keep pace with the leaps and bounds of medicine failed him. It would not surprise me to learn that the study of his own grave disease and the attempt to get medical lessons from its behaviour served partly to entertain his last years. Perhaps therapeutical medicine was not his strongest point, though he always resented being supposed to have a narrow prejudice against the employment of all drugs. But he did one masterpiece of negative work in this field: he destroyed the pernicious doctrine of Todd, which would add alcoholic intoxication to the intoxication of typhus and of pneumonia. And one of the best things that any student of medicine can do is to buy his book, 'The Physician and Naturalist,' and read it through and read twice the chapter on 'Facts and Conclusions as to the Use of Alcoholic Stimulants in Typhus Fever' and the three subsequent chapters. I have spoken of Sir William Gairdner as a friend. But Sir William Gairdner had no enemies. He was as much at home in Glasgow as in Edinburgh, and in London, Paris, or Rome as in Scotland. By his death the profession loses one of its greatest, cheerfullest, devoutest members."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Buliguinski, professor of medical chemistry in the University of Moscow.—Dr. Giuseppe Corradi, formerly professor of surgery in the Florence Medical School.—Dr. Cannieu, professor of anatomy in the University of Bordeaux.

# Medical News.

TRINITY COLLEGE, DUBLIN.—At examinations held in Trinity term the following candidates were successful:—

### FINAL MEDICAL EXAMINATION.

*Part II., Surgery.*—William Pearson, Robert E. Wright, Richard G. S. Gregg, and Allman J. Powell (passed on high marks), William E. M. Armstrong, Frederick Stevenson, Henry de C. Dillon, Oliver St. J. Gogarty, Thomas B. W. MacQuaide, Reginald Holmes, Wallace D. Mitchell, James C. C. Hogan, Madeleine S. Baker, Charles H. O'Rorke, James E. M'Farlane, Joseph C. Ridgway, and William A. R. Spong.

*Part II., Midwifery.*—Frank R. Seymour, Henry de C. Dillon, William A. R. Spong, William E. M. Armstrong, Robert de C. Wheeler, Arthur E. Knapp, Thomas P. Dowley, John H. Waterhouse, and Alfred H. Smith.

### PRELIMINARY SCIENTIFIC EXAMINATION.

*Physics and Chemistry.*—Bernard G. Quinlan, Ronald G. M'Entire, Henry L. W. Woodroffe, Patrick Murphy, James M. Elliott, Thomas G. Harpur, Arthur Chance, Edgar Ll. F. Nash, Thomas L. Bookey, Francis C. Crosslé, Arthur F. Shaw, Leonard Shiel, Oswald C. Tandy, Edward H. H. Lloyd-Dodd, Francis Breen, Albert E. Malone, George M. Maybury, Robert W. Murphy, Hugh E. Williams, Hugh M'C. Fleming, Matthew M'Knight, James C. Kelly, Andreas A. Louw, Robert C. M'Kelly, and Humphry L. Blackley.

*Botany and Zoology.*—Henry L. W. Woodroffe, Arthur F. Shaw, Francis C. Crosslé, Thomas G. Harpur, Georgina Revington, Hubert T. Bates, Eileen M. Hewitt, Frederick B. M'Carter, Gerald G. P. Beckett, Dorothy K. Milne, Francis Usher, Percy D. Long, Robert W. Murphy, John T. Higgins, Thomas King-Edwards, Henry S. Campion, Arthur Chance, Marjory Chapman, Francis T. G. Corscadden, Richard Grandy, Richard P. Pollard, James N. G. Nolan, Cecil Rutherford, Brian D. Crichton, Bernard G. Quinlan, and Robert G. Ball.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Felix Klemperer, *privat-docent* of Medicine and Laryngology, and Dr. Johann Ziemann, an eminent naval surgeon, have been granted the title of Professor.—*Bordeaux:* Dr. Mandoul has been appointed Professor *agrégé* of Natural History.—*Freiburg:* Dr. Karl Hirsch of Leipsic has been appointed Professor of Medicine in succession to the late Dr. Louis Thomas.—*Lille:* Dr. Ch. Dubois has been appointed Professor *agrégé* of Physiology.—*Montpellier:* Dr. Cabanes has been appointed Professor *agrégé* of Natural History.—*Nancy:* Dr. Collin has been appointed Professor *agrégé* of Anatomy.—*Paris:* Dr. Déjerine has been appointed Professor of Medical Pathology in succession to Dr. Hutinel, who has been appointed to the chair of Children's Diseases. Dr. Mulon has been appointed Professor *agrégé* of Anatomy and Dr. Brumpt Professor *agrégé* of Natural History.—*Prague (German University):* Dr. Oskar Fischer has been recognised as *privat-docent* of Psychiatry.—*Strasburg:* Dr. Otto Schirmer has been appointed Professor of Ophthalmology in succession to Dr. Laqueur, who retires. Dr. Heubner of Leipsic has been recognised as *privat-docent* of Pharmacology.—*Vienna:* Dr. Otto Chiari, Extraordinary Professor of Laryngology, has been promoted to an ordinary professorship.—*Würzburg:* Dr. Oskar Schultz, who has charge of the Chemico-Physiological Department, Dr. August Gürber, *privat-docent* of Physiology, Dr. Otto Rostoski, *privat-docent* of Medicine, and Dr. Ludwig Burkhardt, *privat-docent* of

---

[1] Maclehose, Glasgow.

Surgery, have been promoted to Extraordinary Professorships.

**Central Midwives Board.**—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 27th, Dr. F. H. Champneys being in the chair. On the motion of Sir William Sinclair, seconded by Mr. Parker Young, the following motion was passed :—

> That inasmuch as changes in the pulse and temperature are the earliest and surest indication of the onset of puerperal fever when the disease is still amenable to treatment this Board resolves to call the attention of local supervising authorities to the importance of instructing and encouraging midwives practising within their areas in taking and recording the pulse and temperature in every case under their care.

Letters were read from the town clerk of Southampton asking the Board to rescind its resolution of censure for having given a false certificate of still-birth, passed on Jan. 31st, 1907, on Adeline Letitia Bellis, on her own admission. The Board decided that the town clerk of Southampton should be informed that the Board declined to re-open a case which had already been reconsidered at the request of the local supervising authority together with the whole of the facts as presented by it and as to which no fresh facts were suggested. The following midwives were censured: Ellen Greenwood for not having advised that medical assistance should be sent for in a case of breech presentation in a primipara; Mary Lixton for not having advised that medical assistance should be sent for in a case of ophthalmia neonatornm ; and Annie Duncalf, for not having advised that medical assistance should be sent for in a case of rigor and for not having taken the temperature of the patient after the occurrence of a second rigor. The following midwives were cautioned ; Jane Jones, as to the strict observance of the rules of the Board, and in particular as to those requiring her to notify to the local supervising authority in cases of still-birth, and when medical assistance has been sent for ; and Mary Chalk, as to the strict observance of the rules of the Board, and in particular as to that requiring her to send for medical assistance in a case of inflammation about the navel of a child.

**Society of Arts.**—The annual general meeting of the Society of Arts, the 153rd since the foundation of the society, was held on June 26th, Sir Steuart Colvin Bayley, K.C.S.I., C.I.E., chairman of the council of the society, being in the chair. The principal business of the meeting was the election of the council for the year and the reception of the annual report of the council. H.R.H. the Prince of Wales was re-elected President of the society, an office which His Royal Highness has filled since 1901. The report reviewed the proceedings of the society during the past session ; it referred to the award of the Albert medal to Lord Cromer, and gave a list of the other medals awarded during the session. Amongst the prizes announced for next year is a gold medal under the Benjamin Shaw Trust for Industrial Hygiene, similar medals under the Stock and Mulready Trusts to students of schools of art, and one under the Fothergill Trust for the best portable apparatus for use in mines and other places where the air is noxious, enabling men to undertake rescue work. It was noted that there had been a slight increase in the number of candidates at the society's examinations, the total number of papers worked being 24,568. It was announced that a committee had been appointed to make further investigation into the subject of the deterioration of paper, on which subject a committee had reported in 1898. The election of their Majesties the King of Denmark and the King of Norway as honorary Royal members of the society on the occasion of their visit to this country was mentioned. The report concluded with a reference to the members of the society who had died during the past year, the most noticeable of whom was Sir Benjamin Baker.

**The Eleventh Annual Report of the National Association for the Feeble-minded.**—The excellent work which this very useful association continues to do is shown in its latest report. We learn that the "after-care" work—i.e., the placing in suitable situations and the permanent supervision of children incapable of further improvement—has been especially engaging the attention of the association during the past year, and resolutions passed at the London Conference urging the importance of this system were forwarded to the Royal Commission on the Care and Control of the Feeble-minded. The movement is obtaining the support of an increasing number of medical men whose names include many that are authoritative in this connexion. The report includes an interesting discussion on the connexion of alcoholism and feeble-mindedness which recently took place at a meeting of the association. There was a variance of opinion as to the extent of the effect that alcoholism in the parents can have in producing feeble-mindedness in the offspring, but there was a general concurrence as to the fact that parental intemperance was so frequently associated with degeneracy of offspring that it must be reckoned as a factor in producing congenital mental defect. The meeting was agreed as to the advisability of asking for legislation to prevent young children from entering public-houses. A colony and children's home is to be shortly opened but curiously its location is not mentioned in the report. Anyone desiring to give their support to the association can obtain information about it from the secretary at Denison House, 296, Vauxhall Bridge-road, London, S.W.

**Westminster Hospital Medical School.**—The annual prize-giving to the successful students of the hospital took place on July 2nd in the board room of the hospital; Mr. Yool, in the absence of Sir John Wolfe-Barry, was in the chair, and the Right Honourable Alfred Lyttelton, K.C., M.P., distributed the prizes. Mr. Lyttelton, having first congratulated the prize-winners on their success in a few humorous words, deprecated his own personal qualifications for officiating on the interesting occasion. He suggested that it would have been more appropriate that a medical man should have addressed a gathering of distinguished men of science rather than a Member of the House of Commons and a lawyer. In a more serious vein Mr. Lyttelton pointed out how manifold were the gifts required by medical men outside intellectual attainments and that in forming an opinion on a medical case in which all the circumstances were not known and sometimes the truth was wilfully perverted genius was required. He advised his hearers to develop the feminine quality of intuition. In dealing with a patient also they must distinguish between philosophic methods of thought and the methods of action which in this instance were called for. No doubt, even though it crossed their mind, must be apparent to the patient but they must give their advice with authority and confidence. Two very necessary qualities in the medical man were patience and a cheerful tenacity. Though he was of opinion that athletics were at present overdone it was unwise to neglect them altogether in this age of stress when variety was required for recuperation of nerve powers. He also drew attention to the importance of discussion of medical topics among medical students and pointed out how by this means half trnths were found out, ignorance was exposed, and true knowledge was gained.

**Durham County Consumption Sanatorium: A Second Sanatorium to be Provided.**—The annual meeting of the Society for the Prevention and Cure of Consumption in the County of Dnrham took place at the sanatorium, Stanhope, on June 29th. Mr. J. A. Hildyard presided. Dr. W. Robinson (Sunderland) moved and Councillor Elliott (Gateshead) seconded the adoption of the annual report, of which the following is a summary. The measures taken by the society and by the various sanitary authorities in the year which would tend to stop the spread of the disease were mentioned. The Lanchester rural district council is using the empty wards of its isolation hospital for consumptives with satisfactory results and Sunderland is obtaining powers to insure a tubercle-free milk-supply. Special homes for advanced cases were strongly advocated. The death-rate from tnberculosis in the county is steadily declining. The sanatorium contained 45 beds and the average daily number of patients was 43·4, each patient staying on an average 13·2 weeks and costing 17*s.* 10*d.* per week. Applications for admission numbered 257 and 176 patients were admitted and the results of treatment were considered eminently satisfactory. In seven years the applications had been about 1400 and the admissions 800. An after-care association and a working out-door colony are much needed. The income for the year was £3362 and the expenditure £1995. Local authorities subscribed £1223 and sent 79 patients, and working men subscribed (at 1*s.* per annum by each man and collected at the works) £761 and sent 38 patients. Payment by patients at various rates up to 2 guineas per week amounted to £1071 and £196 were received from private subscribers. Dr. J. Gray read his annual report and Mr. C. E. Thompson moved a proposition "that the committee be empowered to provide a second sanatorium at a cost not exceeding £6000," which was carried. Mr. Thompson promised £100 to the fund for the purpose and thought that a second sanatorium was greatly needed and would enable the men to be treated in one and the women and children in the other. The election of officers for the year and a vote of thanks to the chairman concluded the meeting.

LITERARY INTELLIGENCE.—Messrs. Hutchinson and Co., Paternoster-row, London, E.C., will shortly publish, at the price of 2*s.* 6*d.* a new book by the author of the "Soul Market," entitled "Baby Toilers," the objects of which are to enlist public sympathy in the question of sweated labour and to help towards the introduction of a minimum wages Bill for home workers.

MEDICAL AFFAIRS IN ASHANTI.—It appears from the annual report of the Colonial Office, just presented to Parliament, that during 1906 the medical staff of Ashanti consisted of a senior medical officer and five medical officers. The department was successively in charge of Mr. G. J. Rutherford, Mr. T. E. Rice, and Dr. J. C. Montgomery. The average European population during 1906 was 383; of these 48 were officials and 335 non-officials. During the year six deaths occurred—all among non-officials—representing a European death-rate of 15 per 1000. Five officials and 24 non-officials were invalided, an invaliding rate of 75 per 1000. A death-rate of 15 per 1000 is not excessive for West Africa, and on the whole the health of the Europeans in Ashanti may be described as fair. There are no statistics available to calculate the health of the native population, but there were no epidemics and therefore it would appear to have been normal. At the Native Hospital 755 in-patients were admitted, of whom 20 died. In the out-patient department 8485 new cases were treated. During the year vaccination was systematically practised. A European hospital, containing four wards, is in course of construction. Permanent latrine houses, constructed of corrugated iron and concrete, have now been erected in the town of Kumasi. The water-supply is good and plentiful. A number of new wells have been constructed and alterations have been made in some of the old ones.

THE BRITISH ANTARCTIC EXPEDITION.—An exhibition of medical and scientific interest was opened at 5, Regent-street (close to Waterloo-place), London, S.W., on July 1st, in connexion with the expedition which, under Lieutenant Shackleton, will shortly leave this country for southern seas. The exhibition is divided into two sections, the one dealing with food and the other with equipment. Among the firms in the first section who have exhibits are Messrs. Coleman (Norwich) who, in addition to other gifts, have supplied five tons of flour for use in the expedition, and Messrs. Rowntree (York) who have given a large quantity of chocolate and cocoa. This firm has added to the interest of the exhibit by showing botanical specimens of the cocoa plant and the cocoa in different stages of manufacture. Messrs. Bird (4B, Upper Thames-street, London, E.C.) have presented the expedition with custard powder; the Imperial Dry Milk Company (agents, Messrs. Joseph Nathan and Co.) with dried milk; the Oxo Company (4, Lloyd's-avenue, London, E.C.) with Oxo; and the Montserrat Company with 17 cases of lime-juice. All these firms have exhibits of interest. Other firms supplying the expedition with food are the International Plasmon Company, Limited (66A, Farringdon-street, London, E.C.); the McDoddie Viands Company (155A, King's-street, Hammersmith, London, W.); Messrs. Brand and Co. (74–84, South Lambeth-road, London, S.E.); Bovril, Limited (152, Old-street, London, E.C.), who send their emergency food and rations, including Pemican and Virol; and Messrs. Griffiths McAlister (Manesty's-lane, Liverpool) who supply hams, bacon, tinned fish, and jams. The Remington Typewriter Company (Gracechurch-street, London, E.C.) supply a typewriter and Messrs. Guttman and Co. (8, Long-lane, London, E.C.) Thermos flasks. Messrs. Burroughs, Wellcome and Co. (Snow-hill, London, E.C.) furnish the medical supplies and photographic outfits. A noticeable feature in the equipment section is the absence of any large display of furs. It has been found that Jaeger and waterproof clothing are more suitable material for body coverings in Polar regions and consequently fur is practically only used for boots (Finskoo) and mittens. The Jaeger Company are supplying the wool clothing and Messrs. Burberry (30 and 31, Haymarket, London, W.) the waterproof clothing The hut for use by the expedition party (a sketch of which is shown) has been made by Messrs. Humphrey. It is constructed of wood, with double walls packed with granulated cork, and measures 19 feet by 33 feet. It will be lighted with acetylene gas. The generator has been supplied by Messrs. J. and J. Drummond (Aberdeen). The cooking apparatus to be carried on the sledges is the one invented by Dr. Nansen, the heat being generated by a Primus oil-stove. In addition to examples of the furniture for use on the expedition and tool outfits there is a tableau representing an exploring party with a completely equipped sledge and tent. The exhibition will close at the end of next week.

THE CANCER HOSPITAL.—In the grounds of this hospital a conversazione was held on July 2nd, when the president of the hospital, Lord Ludlow, who was accompanied by Lady Ludlow, received the guests. In the course of the evening an inspection of the wards took place. The hospital, which was founded in 1851 by the late Dr. William Marsden, received during the past year 817 in-patients and treated 17,376 out-patients. The institution is solely dependent on voluntary support and funds are urgently needed to meet an increasing expenditure. Every year it is found necessary to draw more and more on capital. Last year the ordinary income amounted to £9013 and the expenditure to £16,699, making a deficit of £7686.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—The annual general meeting of this association was held at the Trocadéro, Piccadilly-circus, London, W., on June 27th, Surgeon-General G. J. H. Evatt, C.B., President of the association, being in the chair. The report of the council and balance sheet for the last year were duly presented and unanimously adopted. The financial condition was considered very satisfactory, and it was decided to invest another £100 in Consols. The officers and council for the last year were re-elected with the exception of the treasurer, Dr. W. Gayton, who desired to retire from that office. Mr. A. A. Napper was unanimously elected treasurer in his place, and the thanks of the association were given to Dr. Gayton for his long and able services in the past. Afterwards the members and their friends dined together. A musical entertainment was given by Mr. T. F. Noakes and a very pleasant evening was spent.

MILK CONTAMINATION AND DISTRIBUTION.—A conference on this subject was held at the Incorporated Institute of Hygiene, 34, Devonshire-street, London, W., on July 1st. Mr. A. W. Mayo Robson, who presided, said that milk was a necessary food not only for the child but for the adult. Infected milk was the cause of a large infantile mortality and of many physical disabilities in children. Those who escaped death often became degenerate and drifted into our hospitals, asylums, and prisons. Dr. J. C. Thresh proposed a motion, which was subsequently carried, to the effect that the periodical veterinary inspection of all cows kept for the purpose of giving milk for human consumption should be made compulsory throughout the United Kingdom. Veterinary inspectors should give their whole time to the matter, he said, and be free from local influence. Such inspection should take place periodically four times a year and power should be given to the inspectors to visit places where cows are kept at any time. Power ought to be given to inspectors to see that cowsheds were properly constructed and they should also have power to authorise the analysis of the water-supply. It was of little use providing facilities for cleanliness among the cowmen unless the men were properly educated. He had known cases where cowmen, after washing their hands, had entered the cowshed and taken up a milking-stool bespattered with manure. The only remedy was to bring the men into a police court occasionally. Many medical officers of health were now of opinion that another source of milk contamination was the way in which milk was stored by the consumer. He was of the opinion, however, that if the public could depend upon the purity of milk the demand for it would greatly increase. Dr. George Carpenter put forward a long series of proposals dealing amongst other things with annual licences and microscopical and bacteriological examination of milk, most of which did not meet with the approval of the meeting. He believed that the best interests of the community would be served in the matter of a pure milk-supply if the Local Government Board were made the chief authority to deal with the matter. He drew a harrowing picture of some of the milk-sheds which he had visited and said that in some cases where a sterilising apparatus was used it was not milk that was being sterilised but filth. Dr. P. C. Smith thought that too much was being said on the question of milk-supply and too little done. What was wanted was an Act of Parliament which would deal with the whole question in England, Scotland, and Ireland.

DEATH OF A CENTENARIAN.—Mr. Henry D. Hewson died at South Draynes Farm, St. Neot, on June 20th. He celebrated the 100th anniversary of his birthday on March 25th last.

MEDICAL MATTERS IN CHINA.—Dr. Lehmann, who has been for many years medical officer to the German and Dutch residents in Peking, has been appointed by the Chinese Government chief medical and sanitary officer of the province of Mukden for two years. Hitherto this appointment has been in the hands of the Japanese. A German preparatory medical school has just been opened in Shanghai at which 20 Chinese students have already entered. The professors are Dr. C. Dubois Reymond and Dr. Schindler.

THE BARKER ANATOMICAL PRIZE.—This prize is open to any student whose name is on the anatomical class-list of any school in the United Kingdom. The prize is offered this year for dissections to illustrate the muscular and ligamentous anatomy of the shoulder-joint. The prize is of £21 and is awarded by the curator and President of the Royal College of Surgeons in Ireland and the professor of anatomy in the University of Dublin. The preparations entered must be placed in charge of the curator on or before April 30th, 1908. Each must be marked with a fictitious signature and accompanied by an envelope bearing outside the same signature and containing the name of the competitor. Further information can be obtained on application to the curator.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At a meeting of the Honiton board of guardians held on June 1st Mr. Thomas Henry Stocker Pullin, M.D. St. And., F.R.C.S. Edin., M.R.C.S. Eng., L.S.A., was presented by the chairman (Mr. H. Force), on behalf of the guardians, with a silver salver and illuminated address in recognition of his services, extending over a period of 50 years, as medical officer of the Sidmouth, Sidbury, and Salcombe Regis districts of the Honiton union. The chairman alluded to the kindness of Dr. Pullin to the paupers committed to his care, and Dr. Pullin, in returning thanks, said that he had been informed that the length of his service was a record in the Poor-law medical serviec.—On June 22nd Mr. Murray Babington Steuart, M.B., C.M. Edin., was presented with a silver coffee pot, suitably inscribed, and a cheque for 100 guineas, as a mark of respect and esteem from the residents of Bovey Tracey, Devonshire, on the occasion of his departure from the town.

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS: THE COLONY CHALFONT ST. PETER.—The fourteenth annual meeting of the governors of this society was held on July 1st at the London offices, Denison House, Westminster. The chair was taken by Mr. E. Montefiore Michells, and the reports of the honorary medical staff and the executive committee for the year 1906 were received and adopted. From the medical report it appears that during the past year there have been on the average 197 epileptic "colonists" in residence at the society's colony, besides nine convalescent patients. There was only one death during the year. There was entire freedom throughout the year from any epidemic or infectious disease, and the honorary medical staff again testify to the continued usefulness of the colony and generally to the benefits which accrue to the health of confirmed epileptics by the care and management bestowed upon them in the institution, and they add, "It is now universally admitted that a real necessity exists for special institutions in the treatment of epilepsy, and preferably in the form generally adopted in this and other countries—viz., colonies for epileptics." The report of the executive committee states that in response to the appeal recently issued under the auspices of the Prince of Wales as president of the society, besides other contributions, two most generous offers have been received from intending benefactors, one of whom volunteers to provide the entire cost of building an additional home at the Chalfont colony for 24 women, while the other undertakes to provide the cost, estimated at £3500, of building and furnishing a home for the same number of children. To complete the purposes of the appeal, however, funds are still needed for the erection and equipment of two more homes and for other purposes, and an urgent appeal is made by the committee for further funds in aid of this exceedingly philanthropic and much-needed society. The offices are at Denison House, Vauxhall Bridge-road, Westminster, London, S.W.

DONATIONS AND BEQUESTS.—By the will of Dr. Thomas Jarvis Bennett of Tunbridge Wells, subject to his widow's life interest, the whole of his property, valued at over £30,000, is left to the Royal United Hospital, Bath.—Mrs. Godfrey Walker of Conisborough Priory, Yorkshire, the residuary legatee of the late Mrs. Percy Sladen, has sent to the council of the London School of Medicine for Women £20,000 in aid of the endowment of the school.—Mr. John Hughes of Rhyl has by will left about £5000 to be divided between the General Hospital, the Queen's Hospital, the Children's Hospital, and the Eye Hospital at Birmingham.—By the will of Mrs. Henry Moore of Slough, Bucks, King's College Hospital, the Children's Hospital, Paddington, and St. Mary's Hospital will each receive £2000. After certain other disbursements the residue of the estate, valued at £32,000, is left to King's College Hospital.—Mrs. M. E. Bolger has bequeathed by will £1000 each to the Cancer Hospital, Brompton, and the Chelsea Hospital for Women. The proceeds of the sale of her furniture, plate, and jewelry are to be given to the Hospital for Consumption, Brompton.

THE HAMPSTEAD GENERAL HOSPITAL.—A special meeting of the medical profession of Hampstead and the neighbourhood was held, under the auspices of the Hampstead division of the British Medical Association, on July 3rd in the lecture room of the Hampstead Conservatoire. The chair was taken by Dr. G. D. Pidcock. The following resolution was put to the meeting and carried *nem. con.*:—

> That this meeting considers that the Hampstead Hospital should always have a visiting staff of local practitioners, and in consideration of this opinion calls upon the members of the medical profession to refuse to accept any office on the staff on terms which are not considered satisfactory by the local profession.

In consequence of the decision of the council of the hospital that in future local practitioners shall not be appointed on the medical staff, a special meeting of governors and subscribers has been requisitioned for July 16th at the hospital at 6 P.M. to consider and, if deemed desirable, to adopt the following motions:—

> 1. That the practice, hitherto followed, of appointing acting medical officers from among the members of the medical profession practising in Hampstead be continued.
> 2. That the number of physicians and surgeons on the consulting staff be augmented.

This requisition is signed by, amongst others, the Mayor of Hampstead, Sir George Barham, Colonel G. Grant Gordon, C.B., and Mr. J. S. Fletcher, M.P., vice-presidents of the hospital; Sir Samuel Wilks, Bart., consulting physician to the hospital; Mr. James Gough, chairman of the house committee; Dr. E. Collingwood Andrews, chairman of the medical committee, on behalf of the staff; Mrs. King and Mrs. Swinburne-Hanham, representatives on the council of the Ladies' Association; Mr. H. W. Birks and Dr. F. P. Weaver, members of council; and Mr. Alderman McMillan, deputy mayor.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Plague in India.*

THE memorandum which the Royal College of Physicians of London drew up in July, 1905, on the subject of plague in India, has now been printed as a Parliamentary return. It was moved for by Dr. RUTHERFORD. In this memorandum the Royal College of Physicians drew attention to the grave danger not only to India but to all parts of the Empire which arose from an epidemic of such vast proportions and prolonged duration. Suggestions were made in it for coping with the plague. The memorandum was signed by Sir R. DOUGLAS POWELL, the President, Dr. J. F. PAYNE, Dr. NORMAN MOORE, Sir PATRICK MANSON, Dr. JOHN ANDERSON, Dr. W. J. R. SIMPSON, and Dr. E. LIVEING, the registrar.

### *Ventilation of Factories and Workshops.*

The second report of the Departmental Committee appointed to inquire into the ventilation of factories and workshops has been presented to Parliament. In its first report the committee dealt with the removal by general ventilation of the more ordinary impurities arising from the presence of persons and lights. The second report deals with the application of fans to factory ventilation in connexion more particularly with the removal of dust, fumes, steam, and other impurities associated with special manufacturing processes.

#### *Sight Tests in the Mercantile Marine.*

The Board of Trade's annual report on sight tests in the Mercantile Marine states that of the 61 candidates for certificates who failed in form vision during 1906 one was re-examined and passed, while of the 57 who failed in colour vision 15 were re-examined on appeal and of these nine passed and six were rejected.

## HOUSE OF LORDS.

### WEDNESDAY, JULY 3RD.

#### *Medical Companies.*

Lord HYLTON moved the third reading of the Prohibition of Medical Practice by Companies Bill, and his motion was agreed to without discussion.

His LORDSHIP then formally moved that the Bill should be passed.

The Earl of CREWE (President of the Council) said that at this stage he desired to move one or two amendments to the Bill. He had suggested to Lord Hylton, who had taken charge of the Bill in its progress through their lordships' House, that he should confer with his department on the subject of what amendments should be introduced into the Bill. The noble lord had been good enough to carry out that suggestion, and he understood he would agree to the amendments now about to be proposed. He (Lord Crewe) now proposed that whilst offending companies should still be liable to penalties for contravention of the provisions of the Bill, the directors, managers, and officers should only be liable if they knowingly and willingly authorised or permitted such contravention. He moved an amendment to make it plain that this was the intention of the Bill.

The amendment was agreed to without further discussion.

The Earl of CREWE then moved a further amendment to the effect that a "company" should be defined for the purposes of the Bill as "any body corporate wherever established which carries on business in the United Kingdom."

This important amendment was agreed to.

The Bill was then passed. As it originated n the House of Lords it has still to pass through all its stages in the House of Commons.

## HOUSE OF COMMONS.

### WEDNESDAY, JUNE 26th.

#### *The Report of a Medical Officer of Health.*

Mr. WEIR asked the President of the Local Government Board whether he was aware that Dr. J. Lloyd Roberts of Colwyn Bay, county medical officer of health, when recently submitting his annual report at a meeting of the district council of St. Asaph, North Wales, was requested to amend it; and whether he would state if a local authority had the right to insist on a medical officer of health withdrawing statements which he had thought proper to make in his annual report in regard to the sanitary condition of a district under his supervision.—Mr. JOHN BURNS replied: I am informed that, in the opinion of the district council, the report was inaccurate and incomplete, and that the medical officer of health has been asked further to consider it and to submit it at the next meeting of the council. I am not fully acquainted with the circumstances of the present case but, speaking generally, it does not appear to me that a district council can insist on the withdrawal by the medical officer of health of statements in his annual report in regard to the sanitary condition of the district under his supervision.

#### *The Boyle Sanitary Authority.*

Mr. JAMES O'KELLY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that the Local Government Board for Ireland had given notice that one of its inspectors would hold an inquiry on July 2nd, 1907, on a petition forwarded by certain ratepayers in Boyle to constitute that township an urban sanitary authority; whether he was aware that the notice was only received on June 19th, and that there was no meeting, either of the Roscommon county council or the Boyle district council, to be held between the date of notice being received and that on which the inquiry was to be held; whether, seeing that both these bodies were interested in the matter to be inquired into, he would see that the inquiry be adjourned to a date that would give these bodies an opportunity of considering the course they should adopt in the interests of the ratepayers they represented, and whether he would take steps to secure that the Local Government Board should consult these bodies as to a convenient date for the inquiry.—Mr. BIRRELL answered: The Local Government Board gave the usual statutory notice of this inquiry. The Board has since received from the county and rural district councils a request that the inquiry may be postponed and in reply has informed these bodies that the inspector will attend and open the inquiry on the date fixed and then adjourn it to any date which may be arranged to suit the convenience of the parties concerned.

#### *The Chief District Medical Officer of Lewis.*

Mr. WEIR asked the Secretary for Scotland, having regard to the fact that the Local Government Board for Scotland in its report last year expressed the opinion that it was not possible for the duties attaching to the office of chief district medical officer in the Island of Lewis to be discharged by anyone resident in Dingwall, whether he would state what steps had been taken by the Board to ensure the appointment, vacated some time since by Dr. C. M. Macrae, of Stornoway, being filled by a medical officer resident in the island.—Mr. SINCLAIR said in reply: I have no official information but I understand the district committee is to meet shortly in order to appoint a successor to Dr. Macrae.

#### *Still-births in 1906.*

Mr. WILLIAM PEARCE asked the President of the Local Government Board to give the number of still-births which were notified to the local supervising authorities by certified midwives under the Midwives Act, 1902, during the year 1906.—Mr. BURNS sent the following written answer: I have made inquiry but I have not been able to obtain this information for which the honourable gentleman asks.

#### *The Qualifications of Irish Medical Officers of Health.*

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland what special training, if any, medical officers of health had got in veterinary matters and whether, seeing that by the Public Health Act they were expected to diagnose diseases in animals used for food of man, he would give instructions to all sanitary authorities that only veterinary surgeons should be employed in the inspection of meat and milch cows in all cases where the medical officer of health had no special training.—Mr. BIRRELL (in a written answer) replied: In the case of county boroughs any person who may be appointed as medical superintendent officer of health is required to possess a diploma in sanitary science, public health, or State medicine. This requirement ensures that the person appointed possesses the requisite training to enable him to discharge the duties which devolve upon him in the inspection of meat intended for human food. In other districts in which a superintendent medical officer of health is appointed the officer is required to possess a similar diploma. Any sanitary authority may appoint a veterinary surgeon for the purpose of the inspection of meat to be used for human food, and such appointments have been made in the case of Dublin and Belfast.

### THURSDAY, JUNE 27TH.

#### *The Investigation of Cancer.*

Captain FABER asked the Prime Minister whether he could now state if he was able to appoint a Royal Commission to examine into the causes of the national scourge, cancer.—Sir HENRY CAMPBELL-BANNERMAN replied: Since the honourable and gallant Member gave notice of this question some little time ago I have made inquiries of the authorities who are best qualified to express an opinion on a matter which we must all feel to be of the utmost importance and I am advised that it would not be expedient at present to recommend the appointment of a Royal Commission to inquire into the causes of cancer. Though much research work is being systematically carried on in this country in connexion with the Imperial Cancer Research Fund and otherwise, and also abroad, I am advised that much remains to be done before any facts can be brought before a Royal Commission with any likelihood of their making such an inquiry fruitful for the public advantage.

Mr. A. LEE asked as a supplementary question whether the right honourable gentleman would consider the advisability of making a grant to the Imperial Cancer Research Fund.—Sir HENRY CAMPBELL-BANNERMAN replied that the question did not arise out of his answer.

#### *Medical Officers of Dublin Unions.*

Mr. CHARLES CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that prior to the Local Government Act, 1893, the medical appointments in the North and South Dublin unions were held by an equal number of Protestants and Roman Catholics and that since the passing of that Act every vacancy occurring in the medical offices had been filled by a Roman Catholic, and whether the Government would take steps to secure fair treatment for Protestants.—Mr. BIRRELL replied: I am not aware whether the facts are as stated in the question. The Local Government Board has no information as to the religious belief of medical officers of unions whether appointed before or since the passing of the Local Government Act of 1898. In any event, the matter is not one in which the Government has power to interfere.

#### *The Sanitary Condition of Piershill Barracks.*

Mr. CHARLES PRICE asked the Secretary of State for War what were the dates upon which the first report was made as to the sanitary condition of Piershill barracks, and the report of the medical officer of health and the chief sanitary inspector for the city of Edinburgh; whether, subsequent to the latter report, another inquiry was made by the War Office; and, if so, whether such inquiry had been concluded, a report issued, and when.—Mr. HALDANE furnished the following written answer: The first report on the sanitary condition of Piershill barracks was made by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board in April, 1906. A second report was made by the Director-General, Army Medical Service, in May, 1906. A conjoint inspection was made by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board, on the one hand, and the medical officer of health of the borough of Edinburgh and the chief sanitary inspector, Dr. A. M. Williamson, on the other, in December, 1906, and a third report submitted by the two first-named officials. The report of the Director-General, Army Medical Service, and the report dated December, 1906, by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board, were laid before Parliament in 1906. There has been no subsequent inquiry later than that mentioned—viz., December, 1906.

#### *An Accident at Perth Station.*

Mr. JAMES O'CONNOR asked the Postmaster-General whether he was aware that an auxiliary postman met with an accident at Perth station on June 15th and that he was kept in the mail porters' office for over an hour before being taken to the hospital, owing to the fact that an ambulance could not be got and no one would take the responsibility of incurring an expense for cab fare, and whether he would issue instructions to see that such delay in cases of accident did not recur.—Mr. BUXTON replied (by written answer): I find that an auxiliary postman met with an accident to his foot at Perth station on June 15th and I am informed that he was assisted to the mail porters' room, where first aid was rendered by a member of the railway ambulance corps. I regret to learn that some little delay occurred in getting the postman home. Instructions have been issued on the subject.

### Friday, June 28th.

#### *Australian Health Legislation.*

Mr. Vincent Kennedy asked the Under Secretary of State for the Colonies to say what method was used to prevent the landing of persons affected with pulmonary consumption in the Commonwealth of Australia; and whether he would supply fully the details of any legislation existing on this subject.—Mr. Churchill replied: Under the Commonwealth Immigration Restriction Act, 1901, any person suffering from an infectious or contagious disease of a dangerous character is a prohibited immigrant and may be detained for the purpose of medical examination by any officer entrusted with the administration of the Act for a period not exceeding 24 hours in such place and in such custody as he thinks fit. The Secretary of State has no information as to the exact method in which the examination is conducted but will ask the Governor-General of the Commonwealth for a report if the honourable Member desires.

### Monday, July 1st.

#### *Public Health in Lewis.*

Mr. Weir asked the Secretary for Scotland whether he was aware that, although the local authority in the Island of Lewis had for some years imposed the maximum assessment of 1*s.* per pound for public health purposes, it was quite unable, owing to lack of funds, to give effect to the recommendation of the report by Dr. F. Dittmar, medical inspector for the Local Government Board for Scotland; and would he state why the Board had taken no steps to see that the Public Health (Scotland) Acts were not ignored in this part of the United Kingdom.—Mr. Sinclair replied: I am aware, and I am convinced, that in these circumstances it is impossible at present to exercise further pressure upon the local authority.

#### *The Report of a Medical Officer of Health.*

Mr. Morton asked the President of the Local Government Board whether, in view of the recommendations made by the medical officer of health for St. Asaph (Flint), he would ascertain from the local authorities whether they would consider the expediency of dealing with the sewage of the villages of Meliden and Dyserth.

Mr. Weir also asked the President of the Local Government Board whether he was aware that the medical officer of health for the St. Asaph (Flint) district had expressed the opinion that the sanitation both of St. Asaph and Rhuddlan was unsatisfactory; and would he communicate with the local authority with a view to ascertain to what extent effect could be given to the recommendations of their medical officer of health.—Mr. John Burns (answering both questions) said: I have just received the report for last year of the medical officer of health and I find that he refers in it to the matters mentioned in the questions. I understand that the rural district committee regards the report as inaccurate and incomplete and has asked the medical officer further to consider it and submit it at the next meeting when the various matters dealt with will be fully considered.

#### *The Bacteriologist to the Local Government Board.*

Mr. Morton asked the President of the Local Government Board, having regard to the fact that the bacteriologist employed by the Local Government Board at the National Vaccine Establishment received a salary of £600 per annum, would he explain why he was allowed to make a profit on vaccine lymph sold to the Local Government Board for Scotland.—Mr. John Burns replied: The bacteriologist referred to has not hitherto been required to devote his whole time to the duties of his office and he has received an extra payment in respect of his services in connexion with the supply of lymph by the English to the Scottish Local Government Board, such payment consisting of the sum received from the Scottish Board, less the cost of producing the lymph supplied to them. The arrangement has, however, now been altered. The bacteriologist is required to devote his whole time to his duties. He receives an inclusive salary and no extra allowance is payable to him in connexion with the lymph supplied to Scotland.

### Tuesday, July 2nd.

#### *Tuberculosis in Ireland.*

Mr. Vincent Kennedy asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state how many persons had landed in Ireland from the United States and other countries within the last year to remain in the country and who were suffering from pulmonary consumption; would he say whether this serious disease was still on the increase in Ireland; and would he acquaint himself with the legislation at present in force in Australia and other British colonies which dealt with preventing the spread of this scourge, with a view to introducing similar legislation at once in Ireland and thus dealing effectively with this drain on Ireland's dwindling population.—Mr. Birrell furnished the following written answer: The Irish Government has no information as to the number of immigrants into Ireland who are affected with pulmonary consumption. The proportion of deaths from this disease in Ireland has been practically constant for a good many years past, and in this respect Ireland shows a regrettable difference from the rest of the United Kingdom, in which the death-rate from consumption has been steadily diminishing. The question of undertaking legislation for Ireland in regard to this important matter has already engaged the attention of the Government. I regret that I cannot hold out any hope of immediate legislation, but the matter will not be lost sight of.

#### *Veterinary Surgeons and Public Health.*

Mr. Sloan asked the Secretary for Scotland what were the duties of veterinary surgeons under the Public Health Acts in diseases transmissible from animals to man by milk or meat; what use did the medical officer of health make of the advice given in matters purely veterinary; and whether the veterinary adviser reported through the medical officer of health or direct to the sanitary authority.—Mr. Sinclair replied: The duties of veterinary surgeons are contained in Sections 43 and 60 of the Public Health Act, 1897. The use that a medical officer of health will make of any information or advice obtained from the veterinary surgeon will depend on the nature and circumstances of the individual case. With regard to the last part of the question, when proceedings are taken under Section 60, the veterinary surgeon's report, if any, is, in terms of the statute, submitted to the local authority by the medical officer of health. In proceedings under Section 43 there is no statutory rule as to the reports and it is for each local authority to determine whether any report under that section shall be submitted direct or through the medical officer of health. But in all cases it is the duty of the medical officer of health to advise his local authority as to the measures necessary to prevent the direct or indirect transmission of the disease to human beings and, so far as authorised by statute or otherwise, to execute or superintend the execution of those measures.

## KING EDWARD'S HOSPITAL FUND FOR LONDON BILL.

On the order for the consideration of this Bill as amended,

Dr. Rutherford moved the recommittal of the Bill with an instruction to the Committee to insert clauses to provide thst the control and management should be vested in the President and council, and that the council should be constituted on representative lines. He said that the proposed constitution of the Bill gave the President full and complete power unlimited, uncontrolled, and unchecked. All that he asked was that the council in so far as it was a representative council should be included in the Bill. The public requirements would be met if elected members had seats on it—one from the City of London, one from the London County Council, one from the University of London, one from the Royal College of Physicians of London, one from the Royal College of Surgeons of England, two from the British Medical Association, together with one representative each from the Hospital Sunday Fund, the Hospital Saturday Fund, and the Central Hospital Council. That the whole power should lie in the hands of the President was not fair to him or to the public. It placed him in a position of great responsibility, and no one could enjoy great responsibility without at the same time being open to severe criticism.

Mr. Trevelyan pointed out that in creating a permanent constitution the House was dealing with an unknown future and personalities of whom they could have no knowledge. He saw no reason why there should not be some representation of public bodies, and he supported the suggestion that the Bill should be recommitted in order that it might be strengthened by a representative element.

Mr. Jowett supported the amendment. He objected to the suggestion that there should be an overpowering representation of the medical profession controlling the hospitals. Between the yesrs 1897 and 1903 £40,000 subscribed by the public for the conduct of hospitals in reality went to support medical schools. If public support was needed for medical schools let the support be directly applied for. Under the present system all kinds of subsidiary interests connected with the medical profession were sought to be served. The Fund was largely controlled by the medical profession without any real representation of the people. It had also been suggested that the medical profession utilised these hospitals unfairly for their training of future members of the profession and that surgical operations were conducted by men who would not be allowed to carry out such operations upon richer patients outside. All this pointed to the necessity for representative control over the Fund.

The Attorney-General for England (Sir John Lawson Walton) said that it was the wish of the highest persons interested in the proposals of the Bill that the matter should be left to the consideration of Parliament, and any provision Parliament would think wise would be cordially accepted by those intrusted with the administration of the Fund. No one had cavilled at the powers of the present President during the time he had been graciously disposed to discharge the duties of the office, but it was contemplated that on the resignation of the Prince of Wales of the position of President there might be a question in reference to his successor and the qualifications his successor might possess for the discharge of duties and responsibilities which legislation might thrust upon him. The suggestion was put before the House of Lords Committee and a provision was introduced that on the termination of the tenure of office by the present President the office should pass to his successor to be chosen by the unanimous recommendation of the very prominent individuals who were named in the Bill. When the Prince of Wales resigned his place as President it would be necessary for the Lord Chancellor, the Prime Minister, and the Governor of the Bank of England for the time being to concur in the recommendation of some member of the Royal Family whom they considered qualified to accept the post now occupied by the Prince of Wales. Therefore there was assurance that three persons holding high and responsible public positions would unite in recommending a qualified person. But if they did not concur then the duties of President would devolve into the hands of three persons. There would be no longer a President but three Governors. It was said that the council ought to be elected, but the difficulty was to give the council an elective character, seeing that it was impossible to specify a constituency to carry out the election. It had further been suggested that this constituency should largely consist of the members of the medical profession; and, again, it had been suggested that subscribers to the Fund should be the electorate, and if that was adopted he believed that the majority and those who contributed the largest amounts had no wish to interfere with the discretion of the Royal Family. It was clear, however, that there would be a large representative element in the council.

Dr. Rutherford: What we ask is that this should be inserted in the Bill.

The Attorney-General replied that he was trying to satisfy honourable Members that that was not necessary. If public confidence was to be secured it was obvious that the constitution of the council must be maintained and possibly a larger representative element would be required in the future, but he suggested it was undesirable to stereotype this representation. In any scheme for hospital management there must be a large representation of the medical element. There had been proposed a clause limiting the individual power of the President, so that on his own part and on his own authority he could deal with neither the distribution, nor the investment, nor the application of the property, and that covered nearly the whole of the objects of the Fund. The President was thus controlled by the majority of his council in all matters relating to the investment, expenditure, application, and distribution of money. His power of his own motion was limited to the mere collection of money. He (the Attorney-General) was strongly of opinion that it was of importance that the name of the Royal family should be connected with the appeal to the public for funds.

Mr. G. GREENWOOD welcomed the concessions that were being introduced into the Bill.

Sir WILLIAM COLLINS expressed satisfaction at the modifications giving the President and the General Council the direction, control, and management of the Fund, and at the changes that had been introduced in regard to the power of nomination of any future president and to the summary removal of members of the council. He saw great difficulty in the way of securing representation of the various London hospitals upon the body which would distribute this money annually.

Mr. MORTON urged that it was desirable to have a public audit of the accounts of the Fund.

Sir HENRY CAMPBELL-BANNERMAN said that honourable Members must not forget that this Fund was really created by the first President, the present King. The money could not have been obtained but for his influence, and therefore he and those associated with him were not in the least unreasonable in desiring to have at least something to say in the expenditure of money. He was glad to say that the Fund had been a conspicuous success. It had done a great deal of good in the improvements of matters and also in promoting economy. Its expenses had been at the rate of 1·35 per cent., which he thought was a model for hospitals throughout the country. Hitherto, the members of the council had been selected so as to include a large number of public interests. Many members of the House might not be aware that the following were members of the council: the Lords Lieutenant of London and Middlesex, the Bishops of London and Southwark, the Roman Catholic Archbishop of Westminster, the President of the National Council of Evangelical Free Churches, the Chief Rabbi, the Lord Mayor of London, the Chairman of the London County Council, the Governor of the Bank of England, the President of the Royal College of Physicians, and the President of the Royal College of Surgeons. These gentlemen had no doubt rendered good service and they were an ample proof of the desire of the President and his august predecessor to take advantage on the council of persons so well qualified to give advice as these were. There was no reason whatever to doubt that the same practice would continue in the future. It was urged that those names ought to be inserted in the Bill. If that were done it would be difficult to recognise any new body which might come into existence. A further step had been announced that day. The whole of the financial control of the Fund was left practically, as the Bill stood, in the hands of the President; but that was now put an end to and the council had an equal voice with the President in all that concerned the finance of the Fund. As to the suggestion for a public audit, the council was satisfied with the audit at present, but to satisfy the not unreasonable feeling which Mr. Morton had expressed an amendment would be moved to the following effect:—"The accounts of the Fund shall be annually audited by an auditor nominated by the President of the Local Government Board. the remuneration of such auditor to be fixed by the President of the Local Government Board and paid out of the Fund." He thought the concessions which had been made to meet very reasonable criticisms were of extreme importance and deserved to conciliate and attract the support of those who had regarded some of the provisions of the Bill with some suspicion. He hoped that the result of the discussion would be to add to the popularity and success of the Fund and to increase the confidence of the public in its management.

Mr. BALFOUR expressed the hope that the speech of the Prime Minister and the two amendments which had been announced might enable the House to give a unanimous vote. He would appeal to the House not to interfere with a Constitution which had proved so invaluable in obtaining the confidence of many subscribers in the past. He hoped the House might come to a unanimous decision and proceed to the consideration of the detailed measure on report, without going through the form of a division, which he was sure would be ungracious and inexpedient.

Dr. RUTHERFORD then withdrew his amendment and the Bill was considered. Amendments were introduced into the Bill to give effect to the concessions which members of the Government had adumbrated. This concluded the report stage and the Bill was ordered for third reading.

## THE PUBLIC HEALTH BILL.

The Public Health Bill, which was introduced into the House of Commons by Mr. J. W. Wilson, came before one of the Standing Committees of the House on Monday, July 1st. Sir WILLIAM HOLLAND was in the chair. The object of this Bill is to enable urban authorities to adopt many of the clauses which having been introduced into private Bills of recent years, have been accepted by Parliament, and, further, to confer upon the Local Government Board the power to extend the measure to rural districts. The clauses selected for embodiment in the Bill relate to streets, buildings, and sewers, sanitary provisions, infectious diseases, milk-supply, common lodging-houses, recreation grounds, fire brigades, slaughter-houses, &c.

Mr. J. W. WILSON, in moving a formal amendment at the commencement of the proceedings, said that for 17 years the local authorities had been dependent upon private Bill legislation for any increase in their powers with regard to sanitary arrangements. He further thought that the House of Commons, having allowed this Bill to go through its second reading by consent, recognised its urgent need, not only in the interests of health and sanitation, but for the purpose of saving local authorities an enormous expense. He had received 105 letters from urban authorities heartily approving of this Bill. He recognised the friendly attitude of the President of the Local Government Board towards the Bill. He had acceded to the suggestions of the right honourable gentleman in the hope that he would promise public legislation of a more advanced and comprehensive form than that embraced in the Bill before the Committee.

Mr. BURNS said that the unanimity with which the House of Commons had received the Bill had induced the Government to give it its blessing. The Government considered that pending a consolidation of the whole of the Public Health Acts—the responsibility for which he hoped he would be able to bear in his present office—it was advisable even this year to pass a Bill of this kind. They had behind this Bill not only the support of the Members who were backing it, but also the unanimous consent of the House of Commons and the approval of the Chairman of Committees and other authorities of the House of Lords.

Most of the 142 clauses in the Bill were passed without comment, but on a few of them there was some debate. For example, there was some discussion on the clause dealing with children attending school, and a provision was agreed to to the effect that any parent or guardian who sent a child to a school if it had been suffering from an infectious disease, or had been exposed to infection, without receiving a permit from a medical officer should be liable to a fine not exceeding 40*s.* for each offence.

Clause 82 of the Bill sets forth that the medical officer might enter any public elementary school within the district of a local authority at all reasonable times and examine the scholars. He would further have the power to exclude from attendance any scholar who, in his opinion, was suffering from any infectious disease or was likely to spread infection.

Mr. COOPER raised objections to this power being given, as it might be exercised unreasonably. He was opposed to the child of the poor man being subjected to this inquisitorial action, while the child of the rich man would escape.

An HONOURABLE MEMBER: Will the medical officer be able to take action in the case of a child who has not been vaccinated?

Mr. J. W. WILSON: No. This refers only to infectious disease.

Several members of the Committee were afraid of giving this power to the medical officer even with the consent of the local authority. Eventually the following amendment was accepted in place of the clause:—

"The local authority may authorise a medical officer to enter any public elementary school within the district of the local authority at all reasonable times and to examine the scholars attending the same. He may exclude from attendance therein any scholar who in his opinion is suffering from an infectious disease."

Mr. BURNS moved to leave out the clauses dealing with the sale of milk, ice-cream, and the failure to notify diseased cows. He said that the Local Government Board had a Bill before the House dealing with ice-cream, milk, &c.

Mr. COOPER failed to see why the matter should not be dealt with in the Bill before the Committee, as the Bill of Mr. Burns might not succeed in passing through the House of Commons. The need of safeguarding the community from the dangers of ice-cream was not confined to the poor alone. He had ascertained that the dirtiest, filthiest, and most contaminated ice-cream had been sold in the West End of London.

On the promise of Mr. BURNS that the whole question would be dealt with in his Bill it was agreed to omit the clauses.

The Bill having passed through Committee was ordered to be reported to the House.

## BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, 156, Charing Cross-road, London, W.C.

The Destruction of Daylight: A Study in the Smoke Problem. By John W. Graham, M.A., Principal of Dalton Hall, University of Manchester. Price 2*s.* 6*d.* net.

AMERICAN MEDICAL ASSOCIATION PRESS, 103, Dearborn-avenue, Chicago. (W. B. SAUNDERS COMPANY, London.)

American Medical Directory. Volume I. A Register of Legally Qualified Physicians of the United States and Canada. Price 35*s.* net.

APPLETON, SIDNEY, 25, Bedford-street, Covent Garden, London, W.C.

The Principles and Practice of Dermatology. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois; Dermatologist to St. Luke's and Cook County Hospital, Chicago; Member of the American Dermatological Association. Price not stated.

Physical Diagnosis. With Case Examples of the Inductive Method. By Howard S. Anders, A.M., M.D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia, Physician to the Philadelphia General Hospital, Tuberculosis Department. Price 12*s.* 6*d.* net.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Traité d'Hygiène. Publié en Fascicules sous la Direction de MM. A. Chantemesse et E. Mosny. XI. Hygiène Coloniale. Par les Docteurs Alliot, Clarac, Fontoynont, Kermorgant, Marchoux, F. Noc, Ed. et Et. Sergent, Simond et R. Wurtz. Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

The Office of Midwife (in England and Wales) under the Midwives Act, 1902. (2 Edw. VII., Ch. 17). Concerning her Relation to the Central Midwives Board, to the Local Supervising Authority and its Inspectors, to the Medical Practitioner, to the Coroner, and to her Patients. By Stanley B. Atkinson, M.A., LL.M. Cant., M.B., B.Sc. Lond., of the Inner Temple, Barrister-at-Law, a Justice of the Peace for the County of London, Hon. Secretary of the Medico-Legal Society (London), Guardian and Borough Councillor. Price 3*s.* 6*d.* net.

BELL, GEORGE, AND SONS, York House, Portugal-street, Lincoln's Inn, London, W.C.

Our Slaughter-house System. A Plea for Reform. By C. Cash, B.A., Translator of "Humane Slaughtering," by Hugo Heiss, and The German Abattoir. By Hugo Heiss. Price not stated.

Bradbury, Agnew, and Co., Limited, Printers, London and Tonbridge.

A Descriptive Catalogue of the Pathological Museum of the Hospital for Sick Children, Great Ormond-street. (To be obtained from the Secretary of the Hospital, Great Ormond-street, London, W.C.) Price 5*s.* net.

Cassell and Company, Limited, London, Paris, New York, and Melbourne.

Gout: Its Pathology, Forms, Diagnosis, and Treatment. Originally founded on the Goulstonian Lectures on "The Chemistry and Pathology of Gout," delivered by the author before the Royal College of Physicians of London in 1897. By Arthur P. Luff, M.D., B Sc., F.R.C.P. Lond., Physician to St. Mary's Hospital. Third edition. Price 10*s.* 6*d.* net.

Chapman and Hall, Limited, London.

Population and Progress. By Montague Crackanthorpe, K.C. Price 2*s.* 6*d.* net.

Churchill, J. and A., 7, Great Marlborough-street, London, W.

The Labyrinth of Animals, including Mammals, Birds, Reptiles, and Amphibians. By Albert A. Gray, M.D. Glasg., F.R.S.E., Surgeon for Diseases of the Ear to the Victoria Infirmary, Glasgow. Vol. I. Price 21*s.* net.

Elements of Human Physiology. By Ernest H. Starling, M.D. Lond., F.R.C.P., F.R.S., Jodrell Professor of Physiology, University College, London. Eighth edition. Price 12*s.* 6*d.* net.

Practical Physiological Chemistry. A Book designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D., Demonstrator of Physiological Chemistry in the Department of Medicine of the University of Pennsylvania. Price 16*s.* net.

Foods and their Adulteration. Origin, Manufacture, and Composition of Food Products; Description of Common Adulterations, Food Standards, and National Food Laws and Regulations. By Harvey W. Wiley, M.D., Ph.D. Price 21*s.* net.

Cohen, Friedrich, Bonn.

Beiträge zur Entstehung der Geschwülste. Zweite Ergänzung zur "Geschwulstlehre für Aerzte und Studierende." Von Dr. Hugo Ribbert, ordentlicher Professor der allgemeinen Pathologie und pathologischen Anatomie, Direktor des pathologischen Institutes in Bonn. Die Entstehung des Karzinomes. Price M.4.80.

Curwen, J., and Sons, Limited, 24, Berners-street, London, W.

Voice Production in Singing and Speaking, based on Scientific Principles. By Wesley Mills, M.A., M.D., F.R.S.C., Professor of Physiology in McGill University, and Lecturer on Vocal Physiology and Hygiene in the McGill University Conservatorium of Music, Montreal, Canada. Price 7*s.* 6*d.* net.

Doin, Octave, 8, Place de l'Odéon, Paris.

Séméiologie des Maladies du Système Nerveux (Neurologie-Psychiatrie). Par le Dr. Henri Dufour, Médecin des Hôpitaux de Paris Price Fr.5.

Fischer, Gustav, Jena.

Die Melancholie. Ein Zustandsbild des manisch-depressiven Irreseins. Eine klinische Studie. Von Dr. Georges L. Dreyfus, vorm. Assistenzarzt an der Psychiatrischen Klinik der Universität Heidelberg. Mit einem Vorwort von Hofrat Professor Dr. Emil Kraepelin. Price M.7.

Chirurgische Operationslehre. Von Dr. Th. Kocher, Professor an der Universität und Direktor der Chirurgischen Klinik der Universität Bern. Fünfte vielfach umgearbeitete Auflage. Price M.20; geb., M.22.50.

Green, William, and Sons, Edinburgh and London.

A Course of Lectures to Midwives and Maternity Nurses. By W. F. Fothergill, M.A., B.Sc., M.D., Lecturer in Obstetrics, Victoria University of Manchester, Hon. Assistant Gynæcologist, the St. Mary's Hospitals and the Northern Hospital, Manchester, Examiner to the Central Midwives Board. Price 4*s.* 6*d.* net.

Heinemann, William, 21, Bedford-street, London, W.C.

The Nutrition of Man. By Russell H. Chittenden, Ph.D., LL.D., Sc.D., author of "Physiological Economy in Nutrition," &c., Professor of Physiological Chemistry and Director of the Sheffield Scientific School of Yale University. Price 14*s.* net.

Hirschwald, August, Unter den Linden, 68, Berlin, N.W.

Bibliothek v. Coler. Herausgegeben von O. Schjerning. Band 22. Die Verwundungen durch die modernen Kriegsfeuerwaffen, ihre Prognose und Therapie im Felde. Von Stabsarzt Dr. Graf in Düsseldorf und Dr. Hildebrandt in Berlin. II. Band. Spezieller Teil. Price M.12.

John Bale, Sons, and Danielsson, Limited, 83-91, Great Titchfield-street, Oxford-street, London, W. (Griffiths, Francis, 34, Maiden-lane, Strand, London, W.C.).

The Construction and Reconstruction of the Human Body. A Manual of the Therapeutics of Exercise. By Eugen Sandow. With a Foreword by Sir Arthur Conan Doyle. Price 12*s.* 6*d.* net.

John Bale, Sons, and Danielsson, Limited, 83–91, Great Titchfield-street, London, W.

Air, Light, and Sun Baths in the Treatment of Chronic Complaints. By Dr. A. Monteuuis. Translated from the French by Fred. Rothwell. Price 2*s.* net.

J. B. Lippincott Company, Philadelphia and London.

A Text book of the Science and Art of Obstetrics. By Henry J. Garrigues, A.M., M D., Professor of Obstetrics in the Post-Graduate School and Hospital (resigned), Professor of Obstetrics and Gynæcology in the School for Clinical Medicine (resigned). Second edition, thoroughly revised. Price 25*s.* net.

Kimpton, Henry, 13, Furnival-street, Holborn, London, E.C.

The American Text-book of Prosthetic Dentistry. In Contributions by Eminent Authorities. Edited by Charles R. Turner, D.D.S., M.D., Professor of Mechanical Dentistry and Metallurgy, Department of Dentistry, University of Pennsylvania, Philadelphia. Third edition, revised and enlarged. Price 26*s.* net.

Lewis, H. K., 136, Gower-street, London, W.C.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. Aberd., Professor of Surgery, Kansas State University, Kansas City. Third edition, revised and enlarged. Price 12*s.* 6*d.* net.

Macmillan and Co., Limited, London.

A Health Reader. By C. E. Shelly, M.A., M.D., M.R.C.P., Consulting Medical Officer, Haileybury College, and E. Stenhouse-B.Sc., Associate of the Royal College of Science, London. Book II. Price 1*s.* 4*d.*

Mittler, Ernst Siegfried, und Sohn, Kochstrasse 68–71, Berlin.

Medizinal-Berichte über die Deutschen Schutzgebiete, Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen-, Marianen-, Marshall-Inseln und Samoa, für das Jahr 1904–05. Herausgegeben von der Kolonial-Abteilung des Auswärtigen Amts. Price M.7.50

Pentland, Young J., Edinburgh and London.

Manual of Surgery. By Alexis Thomson, F.R.C.S. Ed., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to the Deaconess Hospital, Edinburgh, and Alexander Miles, F.R.C.S. Ed., Assistant Surgeon, Edinburgh Royal Infirmary, Surgeon to Leith Hospital. Volume second. Regional Surgery. Second edition, revised and enlarged. Price not stated.

Rebman, Limited, 129, Shaftesbury-avenue, London, W.C.

The Treatment of Disease. A Manual of Practical Medicine. By Reynolds Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital, Consulting Physician to the Nassau Hospital. Price 24*s.* net.

Surgical Diseases of the Chest. By Carl Beck, M.D., Professor of Surgery in the New York Post-Graduate Medical School and Hospital. Price 20*s.* net.

Hygiene of the Lung in Health and Disease. By Professor Dr. Leopold von Schrötter, Director of the Third Medical Clinic of the Vienna University. Translated by H. W. Armit, M.R.C.S., L.R.C.P. Price 2*s.* net.

Springer, Julius, Monbijouplatz, 3, Berlin, N.

Die chronische progressive Schwerhörigkeit. Ihre Erkenntniss und Behandlung. Von Dr. August Lucae, Geh. Med.-Rat und Professor an der Königl. Friedrich Wilhelms-Universität zu Berlin. Price M.18.

Swan Sonnenschein and Co., Limited, 25, High-street, Bloomsbury, London, W.C.

Labour and Childhood. By Margaret McMillan, Author of "Early Childhood" and "Education through the Imagination," &c. Price 3*s.* 6*d.*

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

Best, W. J., M.R.C.S., L.S.A., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Louth District of the county of Lincoln.

Chiles-Evans, David Brynmor, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer at the Swansea Workhouse.

Colyer, Stanley, M.B., B.S. Lond., D.P.H., has been appointed House Physician at the General Lying-in Hospital, York-road, Lambeth.

Coombs, Carey, M.D. Lond., has been appointed Assistant Physician to the Bristol General Hospital.

Crosbie, R. P., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cork District of the county of Cork.

David, John, M.B., C.M. Glasg., has been appointed a District Medical Officer by the Neath (Glamorganshire) Board of Guardians.

Ewing, J. Millar G., L.R.C.P. & S. Edin., has been appointed House Surgeon to the Wallasey Dispensary and Victoria Central Hospital, Liscard.

GUNNING, CHARLES JOHN HOPE, M.R.C.S., L R.C.P. Lond., has been appointed Anæsthetist to the Victoria Hospital for Children, Tite-street, Chelsea, S.W.

LOGAN, FREDERICK THOMAS BISHOP, L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Medical Officer for the Bishopsworth District of the Long Ashton (Somerset) Union.

MACPHAIL, ALEXANDER, M.B., M.S. Glasg., has been appointed Lecturer on Anatomy at the Charing Cross Hospital Medical School.

ROBBS, C. H. D., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Grantham District of the county of Lincoln.

RYNNE, M. A., M.D. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cheltenham District of the county of Gloucester.

ST. JOHNSTON, THOMAS REGINALD, M.R.C.S., L.R.C.P. Lond., M.S.A., has been appointed Government Medical Officer in Fiji.

SYMES J. ODERY, M.D. Lond., has been appointed Physician to the Bristol General Hospital.

WILLIAMSON, HERBERT, M.B., M.R.C.P. Lond., has been appointed Assistant Physician-Accoucheur to St. Bartholomew's Hospital.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Senior Assistant Medical Officer. Salary £250 per annum, with board, apartments, washing, and attendance.

AYR COUNTY HOSPITAL.—Resident House Surgeon. Salary £70 per annum, with board and residence.

AYR DISTRICT ASYLUM.—Junior Assistant Physician, unmarried. Salary £120 with board, apartments, and laundry.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRISTOL ROYAL INFIRMARY.—Casualty House Surgeon for six weeks.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

CANCER HOSPITAL, Fulham-road, S.W.—Medical Officer in Charge of the Electrical Department. Salary £26 5s. per annum.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £90, rising to £100, with board, apartments, coals, gas, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, subject to re-appointment. Salary £60 per annum, with rooms, board, washing, and attendance.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

EGYPT.—Sub-Inspector of Ophthalmic Hospitals, unmarried. Salary £500 a year.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100, with board, residence, and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Physician.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Physician for the Diseases of Women.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

LIVERPOOL INFIRMARY FOR CHILDREN.—House Surgeon. Salary £100 per annum, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Assistant Honorary Ophthalmic Surgeon.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon, non-resident, for six months. Salary at rate of £75 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 a year, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary £80 per annum.

MIDDLESEX HOSPITAL, W.—Medical Officer and Registrar to the Cancer Department. Salary £100 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, increasing to £100, with apartments, board, washing, and attendance.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £80 per annum, with board, residence, and washing.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Honorary Assistant Surgeon.

POPLAR HOSPITAL FOR ACCIDENTS.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board and residence.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon, Salary £110 per annum, with rooms, commons, and washing. Also Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

ROYAL EYE HOSPITAL, ST. George's-circus, S.E.—Refraction Assistant. Salary £40 per annum. Also Clinical Assistants.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Demonstrator of Comparative Pathology and Bacteriology.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

ST. LUKE'S HOSPITAL, Old-street, London.—Clinical Assistant, unmarried, for six months, board, apartments, and washing provided.

SEAMEN'S HOSPITAL SOCIETY.—Assistant Physician. Also ssistant Surgeon.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

STOCKTON-ON-TEES, STOCKTON AND THORNABY HOSPITAL.—House Surgeon. Salary £180 per annum, with residence, board, and washing.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TEIGNMOUTH HOSPITAL, SOUTH DEVON.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with board residence, and laundry. Also Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence. and laundry.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—Honorary Physician-in-Ordinary.

## Births, Marriages, and Deaths.

### BIRTHS.

BROWN.—On June 30th, at Carlton House, Gloucester, the wife of Walter Brown, M.B., of a daughter.

DICKIE.—On June 29th, at Ryedale-terrace, Middlesbrough, the wife of W. S. Dickie, F.R.C.S., of a daughter.

EDGE.—On the 1st inst., at Granville House, Tettenhall-road, Wolverhampton, the wife of Frederick Edge, M.D., F.R.C.S., M.R.C.P., of a son.

HOWDEN.—On June 30th, at Cambridge-terrace, Dover, the wife of Ian Howden, M.D., J.P., of a son.

### MARRIAGES.

BIRT—KIDD.—On June 29th, at St. Michael's, Blackheath, S.E., A. Cyril Birt, M.R.C.S., L.R.C.P., D.P.H., to Gertrude Isabelle Kidd, daughter of Joseph Kidd, M.D.

DICKINS—TAUNTON.—On June 26th, at St. Nicholas, Worcester, Sidney John Oldacres Dickins, M.D., to Cicely Margaret, elder daughter of William Whitchurch Taunton, B.Sc., M R.C P.

MACWATTERS—RICHARDS.—On May 1st, at St. John's Church, Peshawar, by the Rev. H. W. F. Fagan, chaplain, R. C. MacWatters, M.B., I.M.S., to Nona, youngest daughter of the late Dr. Geo. Richards of Ross-on-Wye.

TRIST—OWEN.—On June 26th, at St. Luke's Parish Church, Chelsea, by the Venerable the Archdeacon of Middlesex, assisted by the Rev. W. B. Trevelyan, vicar of St. Matthew's, Westminster, and the Rev. Owen Slacke, curate-in-charge Coles Hill, Bucks (cousin of the bride), John Ronald Rigden Trist, M R.C.S., L.R.C.P., Crest House, Putney, elder son of Herbert H. Trist of 22, Vernon-terrace, Brighton, to Louisa Harriet, eldest daughter of E. Annesley Owen, Esq., Barrister-at-Law, of 94, Oakley-street, Chelsea, and of the Inner Temple.

### DEATHS.

BENSON.—On June 22nd, 1907, at Chatham, New Brunswick, Canada, John Stafford Benson, M.R.C.S.E., aged 69 years, son of the late Stafford Benson, M.R.C.S.E., formerly of Appledore, Devonshire, England.

FLEURY.—On June 28th, at Lower Baggot-street, Dublin, Charles Robert Fleury, M.D., in his 72nd year.

GAIRDNER.—At Bracondale, Colinton, Midlothian, on Friday, June 28th, very suddenly, Sir William Tennant Gairdner, K.C.B., LL.D., M.D., aged 82.

THORP.—On July 2nd, at Elgin-crescent, Bayswater, Sidney Thorp, M.R.C.S., aged 63.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## CHARGE AGAINST A MEDICAL MAN FOR OBSTRUCTING THE HIGHWAY WITH HIS MOTOR-CAR.

A VERY curious charge was recently brought against Dr. R. H. Spencer, a practitioner of Alcester, by the Inkberrow police for obstructing the Worcester-road in that place. The car had stood outside a house in which Dr. Spencer was paying a professional visit and a police-constable stated that whilst it was standing there he had seen two horses shy at it and refuse to pass it. On cross-examination by Dr. Spencer's solicitor he admitted that the road was 19½ feet wide and that the car was only 4 feet 9 inches across at its widest part. The car was silent. The witness had made no attempt to draw its owner's attention to the matter until he came out of the house. He considered that the road was obstructed by the car and that the people of Inkberrow were entitled to the whole of the road just as much as Dr. Spencer, which, seeing that his car was not occupying a quarter of it, appears a singular argument. The defence was that there had been no wilful obstruction and that there was no case to answer, and the bench concurred in this view and dismissed the case. The police superintendent intimated that he should ask the bench to state a case. We congratulate Dr. Spencer on the result, but it is annoying to be put to the trouble and expense of answering such an unlooked-for charge. We record the case as one of some importance to medical men, for had it succeeded it would have afforded a precedent that would have brought all medical men who perform their rounds in motor-cars within daily peril of the law. We do not, of course, know whether the matter may be taken to a higher court.

## SPEED VERSUS COMFORT ON RAILWAYS.

*To the Editors of* THE LANCET.

SIRS,—It is difficult to see the precise object of Mr. Edge's recent wonderful feat of endurance, and I would undertake to make a motor-car travel a greater distance in 24 hours by mounting it so that it could travel on a circular railway track and eliminating the driver altogether. But seriously, is not this craze for excessive speed rather overdone? What the ordinary traveller wants is not to be banged along at 60 miles an hour but to go at a good moderate speed *under comfortable conditions*. This is a requirement not much studied by our railway companies, who even for quite long journeys provide nothing better than suburban carriages in defiance of all reasonable requirements of our physical economy. Every long-distance train ought by law to consist of corridor coaches only, fitted with lavatory accommodation; and the provision of a buffet where light refreshments could be obtained would be a welcome, though not so necessary, addition. I wish that some distinguished medical man could be induced to take this question up in the interests of the travelling public, who are quite at the mercy of the railway companies in this matter.

I am, Sirs, yours faithfully,

July 1st, 1907. AN OCCASIONAL TRAVELLER.

◆

*G. S. A.*—Fibrolysin is described as a modification of thio-sinamin, and we believe that capsules of it can be obtained through the medium of any first-class manufacturing chemists.

*Soberness.*—We do not think that any purpose will be served by continuing the correspondence. Both sides have sufficiently explained their position.

*Charles Brown.*—Red.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, July 4th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| June 28 | 29·97 | W. | 0·04 | 117 | 67 | 53 | 54 | 56 | Cloudy |
| ,, 29 | 29 95 | E. | ... | 93 | 65 | 51 | 53 | 56 | Fine |
| ,, 30 | 29 88 | N.E. | 0·36 | 87 | 59 | 48 | 49 | 52 | Cloudy |
| July 1 | 29·89 | N.E. | ... | 109 | 61 | 49 | 50 | 54 | Cloudy |
| ,, 2 | 29·98 | N.E. | ... | 106 | 63 | 51 | 51 | 54 | Cloudy |
| ,, 3 | 29·83 | S.W. | ... | 94 | 59 | 49 | 51 | 57 | Fine |
| ,, 4 | 29·63 | S.W. | 0·17 | 119 | 62 | 52 | 54 | 55 | Cloudy |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (8th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY (9th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY (10th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY (11th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY (12th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY (13th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**TUESDAY (9th).**—ROYAL SOCIETY OF MEDICINE (LARYNGOLOGICAL SECTION) (20, Hanover-square, W.).—5 P.M.: Election of Chairman, President, and Officers and Council.

SOCIETY FOR THE STUDY OF INEBRIETY (11, Chandos-street, Cavendish-square, W.).—3.30 P.M.: Council Meeting. 4 P.M.: Discussion on Alcohol and the Children of the Nation (opened by Mrs. Scharlieb. M.D., M.S.).

**WEDNESDAY (10th).**—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M.: Meeting.

**THURSDAY (11th).**—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M.: Exhibition of Specimens.

**SATURDAY (13th).**—INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (Town Hall, Colchester).—11.15 A.M.: Paper:—Dr. W. G. Savage (President of the Eastern Counties Branch): Recent Work upon the Bacteriology of Typhoid Fever in its Relationship to Preventive Measures.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (8th).**—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12 noon: Pathological Demonstration:—Dr. Low. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Clinical Lecture:—Mr. Armour.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. W. Fox: Clinique. (Skin.) 5.15 P.M.: Lecture:—Dr. J. Morrison: Lingering Labour, its Causes and Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipham); Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. StClair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

**TUESDAY (9th).**—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Mr. Dunn.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. W. Carr: Clinique. (Medical.) 5.15 P.M.: Lecture:—Dr. G. F. Still: Infantile Diarrhœa.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynæcological Out-patient (Dr. Giles). Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. A. Wylie: Pharynx.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. J. Collier: Amyotonie Congenita.

**WEDNESDAY** (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Beddard: Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. H. L. Barnard: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. W. Langdon Brown: Sudden Death.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipham).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

**THURSDAY** (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappel).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Dr. Thursfield: The Diagnosis, Prognosis, and Treatment of Pleural Effusions in Children.

ST. MARY'S HOSPITAL MEDICAL SCHOOL (Paddington, W.).—3.30 P.M.: Presentation of Prizes and Awards by Prof. Osler.

**FRIDAY** (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. W. Dodd: Clinique. (Eye.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—9.30 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. Ballance: Surgery of the Nervous System.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration: Dr. A. Wylie: Pharynx.

**SATURDAY** (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1907, which was completed with the issue of June 29th, are given in this number of THE LANCET.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | | | TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 | One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 16 | 3 | Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 2 | Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

**During the week marked copies of the following newspapers have been received:**—*Redditch Indicator, Alcester Chronicle, Hertfordshire Mercury, Westminster Gazette, Westminster and Pimlico News, Tottenham and Edmonton Weekly Herald, West Sussex Gazette, Daily Dispatch (Manchester), Montreal Gazette (Canada), Dublin Daily Express, Huddersfield Weekly Examiner, Canterbury Times, Dublin Evening Telegraph, Dundee Advertiser, Science Siftings, Liverpool Daily Post and Mercury, Oxford Review, Daily News, Bath Herald, Yorkshire Observer, Statesman of India, Wimbledon Gazette, Broad Arrow, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Mr. R. J. Albery, Lond.; Mr. A. J. Allen, Lond.; Dr. H. E. Armstong, Newcastle-on-Tyne; Messrs. Claudius Ash, Sons, and Co., Lond.; Ayr County Asylum, Secretary of; American Medical Association, Chicago, General Secretary of.

**B.**—Dr. C. Hubert Bond, Epsom; Dr. R. M. Buchanan, Glasgow; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. John Bale, Sons, and Danielsson, Lond.; Mr. F. D. Byrne, Lond.; Mr. F. Burgis, Buenos Aires; Messrs. Blanzy, Poure, et Cie., Paris; Mr. Basil Brown, Lond.; Mr. Berte, Liége; Messrs. H. N. Bathgate and Co., Bristol; B. H.; Mr. W. P. Blumer, Sunderland; Messrs. C. Birchall, Liverpool; Messrs. Baker Bros. Lond.; Mr. H. Butterfield, Northampton; Bailbrook House, Bath, Medical Superintendent of; Dr. T. C. Beeler, Checotah, U.S.A.; Bristol Royal Infirmary, Secretary of; Birmingham General Hospital, House Governor of; Mr. J. Bell, Liverpool; Miss Bennetts, Llandudno; Mr. Harold Barwell, Lond.; Board of Agriculture and Fisheries, Lond.

**C.**—Dr. H. H. Clark, Liverpool; Calyx Manufacturing Co., Lond., Manager of; Messrs. A. Constable and Co., Lond.; Mr. T. Crampton, Lond.; Chesterfield Hospital, Secretary of; Cheltenham General Hospital, Secretary of; Coventry and Warwickshire Hospital, Secretary of; Messrs. Crossley and Co., Lond.; Mr. F. W. Clarke, Chorlton-cum-Hardy; Mr. E. M. Corner, Lond.; Dr. Esther Carling, Peppard; Chelsea, Parish of, Clerk to the Guardians; Comité pour élever un Monument au Professeur Brouardel, Paris, President of; Dr. F. J. Charteris, Glasgow.

**D.**—Mr. R. W. Doyne, Lond.; Dr. Henry Davy, Exeter; Mr. F. C. Doble, Lond.; Dumfries and Galloway Royal Infirmary, Treasurer of; Dr. H. Drinkwater, Wrexham; Dr. J. F. Halls Dally, Lond.

**E.**—Messrs. Else and Co., Liverpool; Dr. J. Eyre, Lond.

**F.**—Dr. Herschel Fisher, Lebanon, Ohio; Mr. J. Flach, Lond.; Dr. R. Hingston Fox, Lond.; Falkland Manufacturing Co., Lond., Manager of; Messrs. Franke and Scheibe, Hamburg; Dr. F.

**G.**—Dr. M. Greenwood, Lond.; Mr. C. F. Gross, Wickham Market; Dr. T. Wardrop Griffith, Leeds; Gloucester General Infirmary, Secretary of; Messrs. Glasier and Sons, Lond.; Great Eastern Railway Co., Lond., Continental Traffic Manager of; Mr. W. J. Greer, Newport, Monmouthshire.

**H.**—Dr. W. Jobson Horne, Lond.; Dr. Walter K. Hunter, Glasgow; Hastings, &c., Hospital, Secretary of; Dr. A. L. Hauer, Annville, U.S.A.; H. S.; Messrs. Haar and Steinert, Paris; Dr. E. Harrison, St. Neots.

**I.**—Mr. W. Illingworth, East Liss; Incorporated Institute of Hygiene, Lond., Secretary of.

**J.**—Dr. Robert Jones, Claybury; Messrs. Jacob and Johnson, Winchester; J. F. M.

**K.**—Messrs. Kutnow and Co., Lond.; Messrs. Krupka and Jacoby, Lond., Mr. William Key, Lond.; Mr. C. R. B. Keetley, Lond.; Dr. R. F. Kennedy, Lond.; Mr. Charles I. Kiralfy, Lond.; Messrs. J. Keele and Co., Lond.; Mr. Edmond Knight, Lond.

**L.**—Mr. H. K. Lewis, Lond.; Mr. H. H. Lacy, Warwick; London Hospital and Medical College, House Committee and College Board of; Colonel F. J. Lambkin, R.A.M.C., Lond.; Dr. R. Cranston Low, Edinburgh; Liverpool Stanley Hospital, Secretary of; Loughborough General Hospital, Secretary of; Leeds Union, Clerk of; Messrs. Lec and Nightingale, Liverpool;

**M.**—Dr. L. W. Darra Mair, Lond.; Medico-Legal Society, Lond., Hon. Secretary of; M.D. (Brux.); Mr. C. Mansell Moullin, Lond.; Mr. Rudolf Mosse, Berlin; Messrs. Macmillan and Co., Lond.; Ministry of Interior, Cairo, Director-General of Sanitary Department; Messrs. Mather and Crowther, Lond.; Manchester Royal Infirmary, Secretary of; Dr. R. C. MacWatters, Peshawar; Dr. D. M. Molloy, Caledonia, U.S.A.; Mr. J. Murray, Lond.; Dr. F. S. Mackenzie, Lond.; Monmouthshire Asylum, Abergavenny, Clerk to the; Messrs. F. Mundy, Gilbert, and Co., Birmingham; Messrs. Morny frères, Lond.; Mr. A. H. Milne, Liverpool; Mr. A. T. Marshall, Bideford; Mr. T. E. B. Meyler, Lond.; Dr. K. A. Moody-Stuart, Errol; Surgeon A. B. Marsh, R.N., Grimsby.

**N.**—Mr. E. E. Norton, Lond.; Newport, &c, Hospital, Hon. Secretary of; Nottingham Children's Hospital, Secretary of; National Society for Employment of Epileptics, Lond., Secretary of; Mr. D. Nutt, Lond.; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.

**O.**—Dr. James Oliver, Lond.; Mr. J. Offord, Lond.

**P.**—Mr. Y. J. Pentland, Edinburgh; Mr. Seton Pringle, Dublin; Dr. J. K. Patrick, Glasgow; Mr. J. M. Pearson, Vancouver, British Columbia; Prudential Assurance Co., Lond., Secretary of; Plumbers, Worshipful Company of, Lond., Clerk to; Dr. Owen H. Peters, Nottingham; Prohibition National Committee, Chicago, Illinois; Pacific Drug Co., Portland, U.S.A., Messrs. Peacock and Hadley, Lond.

**R.**—Mr. R. Redpath, Newcastle-on-Tyne; Royal Waterloo Hospital for Children and Women, Lond., Secretary of; Registered Nurses' Society, Lond., Secretary of; Royal Institution, Lond.; Messrs. E. J. Reid and Co.; Lond.; Royal Institute of Public Health, Lond., Secretary of; Rotherham Hospital, Secretary of; Radcliffe Infirmary, Oxford, Secretary of; Messrs. Reynolds and Branson, Leeds.

**S.**—Mr. H. S. Southam, Ottawa; Messrs. G. Street and Co., Lond.; Messrs. Spottiswoode, Dixon, and Hunting, Lond.; Dr. D. K. Stenton, St. Thomas, Canada; St. Andrew's Hospital, Northampton, Secretary of; Salford Royal Hospital, Secretary of; Messrs. Savory and Moore, Lond.; Stockton and Thornaby Hospital, Secretary of; Messrs. Sykes, Josephine, and Co., Lond.; Dr. Robert Saundby, Birmingham; Mr. J. E. R. Stephens, Lond.; Dr. A. Rendle Short, Bristol; South-West London Medical Society, Hon. Secretary of; Lady Esther Smith, Lond.; Messrs. W. B. Saunders Co., Lond.; Seamen's Hospital, Lond., Medical Superintendent of; Messrs. Schluter and Co., Lond.; Messrs. Smith, Elder, and Co., Lond.; Messrs. T. G. Scott and Son, Lond.; Scholastic, Clerical, &c., Association. Lond.; Dr. G. C. Simmons, Sacramento, U.S.A.; Dr. H. F. Shorney, Lond.: Mr. R. Schulze, Chemnitz; Star Engineering Co.

**T.**—Dr. J. Raglan Thomas, Exeter; Dr. E. F. Trevelyan, Leeds; Dr. J. H. Tonking, Camborne; Miss Alice Taylor, Lond.; Taunton and Somerset Hospital, Taunton, Secretary of.

**V.**—Dr. Dennis Vinrace, Lond.

**W.**—Dr. H. J. Warner, Lond.; Dr. Arthur Waddell, Potters Bar; Dr. David Walsh, Lond.; Mr. J. Hopkins Walters, Reading; Messrs. W. Wood and Co., New York; Messrs. Wilkins, Campbell, and Co., Lond.; Messrs. H D. Wells and Co., Hull; Messrs. Wyleys, Ltd., Coventry; Messrs. A. J. Wilson and Co., Lond.; Dr. Eric M. Wilkins, Newton Heath; Dr. Thomas Wilson, Birmingham; Messrs. J. Willing, jun., Lond.; Dr. R. B. Wild, Manchester.

**X.**—X. Y. Z.

**Y.**—Dr. R. A. Young, Lond.; Mr. Walter A. Yearsley, Accrington.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Messrs. Allen and Hanburys, Lond.; "Avranches," Croydon; Dr. A. Anderson, Wadsley; Apollinaris Co., Lond., Secretary of; A. R.; Addenbrooke's Hospital, Cambridge, Secretary of; Dr. B. Anningson, Cambridge; Messrs. S. Austin and Sons, Hertford; A. C. J.; A. J. R; Messrs. S. J. Aldridge and Co., Lond.; A. E. G., Lond.

**B.**—Mr. W. R. Bates, Ilkley; Messrs. W. Bottomley and Son, Ashton-under-Lyne; Messrs J. H. Booty and Sons, Lond.; Dr. W. H. Bishop, Wylam-on-Tyne; Mrs. Brawn, Lichfield; Dr. M. Blieden, Rosettenville, South Africa; Bishopstone House, Bedford, Secretary of; Dr. C. Ballahene, Lond.; Dr. P. Best, Edinburgh; Dr. W. Bryce, Edinburgh; Brighton, Hove, and Preston Dispensary, Secretary of; Buntingford House Retreat, Secretary of; B. M., Beckenham; Mr. T. B. Browne, Lond.; Messrs. G. Back and Co., Lond.; Messrs. Bedford and Co., Lond.; Benger's Food, Manchester, Secretary of.

**C.**—Mr. M. Cheale, Bournemouth; Dr. R. Cook, Leiston; Messrs. Clarke, Son, and Platt, Lond.; Mr. W. Callaway, Bournemouth; Dr. M. G. S. Crutchfield, Boulia, Queensland; C. P.; C. S. H.; Messrs. T. Christy and Co., Lond.; Messrs. J. W. Cooke and Co., Lond.

**D.**—Mr. C. C. Duncan, Worcester; Dr. W. T. Dougal, Pittenweem.

**E.**—Mr. E. O. N. Evans, Penrhiwceiber; Egyptian School of Medicine, Cairo, Director-General of Public Health Department; Dr. E. Elsmere, Leominster; E. R. B.

**F.**—Dr. J. C. Fisher, Lytham; Dr. C. Fraser, Alnwick; Miss Finckenstadt, Crockham Hill; Dr. C. E. Fish, Ruthin; Dr. F.; Dr. T. C. Fisher, Torquay.

**G.**—Mr. C. A. Geen, Lond.; Dr. R. A. Glegg, Ayr; Messrs. Gaymer and Son, Attleborough; Grove House Asylum, Church Stretton; Mrs. Greenwood, Enfield.

**H.**—Dr. B. Hollander, Lond.; Dr. J. T. Harvey, Broken Hill; Dr. N. H. Ho, Hong Kong; Dr. P. W. Hampton, Douglas, Isle of Man; H. A. D.; Messrs. C. J. Hewlett and Son, Lond.; Mr. P. E. Hoyland, Rotherham; Messrs. Hanna and Neale, Dublin; Messrs. Hooper and Co., Lond.; Messrs. T. H. Hewitt, Lond.; Mr. B. Hood, Fletching; H. M.; Mr. J. J. Hicks, Lond.; H. S.; Dr. W. H. Hamer, Lond.; Mr. R. R. Hatherell, Kingston Bagpuize.

**I.**—International Plasmon, Lond., Secretary of; Ingham Infirmary, South Shields.

**J.**—Dr. K. Jivanji, Secunderabad; Mr. Y. M. Jones-Humphreys, Cemmaes; J. B. C.; J. W. L.

**K.**—Mr. J. King, Edinburgh; Dr. C. Kidd, Bromsgrove.

**L.**—Dr. M. E. Leicester, Penryn; Dr. S. C. Lawrence, Edmonton; Dr. W. G. Lloyd, Liverpool; Mr. E. Lachowski, Worthing; L. W. H.; Locum, Bethesda; Dr. R. J. Lytle, Southsea; Mr. C. Lund, Newcastle-on-Tyne; London Association of Nurses, Matron of; L. C.; Messrs. A. C. Loveys and Son, Moretonhampstead; Locum, South Tottenham.

**M.**—Dr. P. J. Moran, Liverpool; Dr. G. Metcalfe, Skelmersdale; Dr. D. R. Mitchell, Blaenavon; Mr. J. H. Marsh, Macclesfield; Mr. O. C. Mitra, Calcutta; Mr. K. V. G. Menon, Tellicherry, India; M. H.; M. G. B.

**O.**—Dr. A. B. Olsen, Caterham; Dr. A. W. Oxford, Lond.

**P.**—Messrs. Pratt and Co., Lond.; Messrs. Prochaska and Mustad, Birmingham; Messrs. C. Pool and Co., Lond.

**Q.**—Q. S.

**R.**—Messrs. Robins, Gore, and Mercer, Lond.; R. A.; R. J. P.; Messrs. Robinson and Son, Chesterfield.

**S.**—Dr. A. L. Sheppard, Bristol; Mr. R. F. Stephens, St. Austell; Miss Slater, Crowborough; Dr. L. E. Stevenson, Temple Sowerby; Storthes Hall Asylum, Kirkburton, Secretary of; Messrs. Saward, Baker, and Co., Lond.; Messrs. Spiers and Pond, Lond.; Dr. T. E. Sandall, Alford; Mr. W. H. Soady, Wolverhampton; Mr. F. H. Sturdee, Walsingham; Smith's Advertising Agency, Lond.

**T.**—Mr. P. Templeton, Swanage, Mr. E. J. Toye, Bideford; T. S; Messrs. Turner and McCandlish, Lond.; Rev. G. Taylor, Norwich; Mr. C. L. Traylen, Lond.; Teignmouth Hospital, Hon. Secretary of; Mr. J. Thin, Edinburgh; Miss A. Taylor, Edinburgh.

**V.**—Virchow-Quelle, Kiedrich; Mr. G. Vogt, Kendal; Virol, Ltd, Lond., Secretary of; Mr. E. D. Vinrace, Lond.; Mrs. Verini, Beckenham; Messrs. Ventom, Bull, and Cooper, Lond.

**W.**—Dr. H. W. Wise, Poynton; Mr. E. C. Wills, Rockstone; Dr. A. E. Wells, Cuckfield; Mr. T. F. Wyse, New Brighton; Mr. L. Wood, Lond.; W. V. L.; W. A. M.; W., Hollington; Dr. J. H. F. Wilgress, Folkestone; Dr. W. H. O. Woods, Charing; Dr. J. K. Welsh, Cumnock; Dr. J. R. Woodcock, Bacton; Messrs. F. Williams and Co., Lond.

---

**Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnieres, Paris.**

# The Croonian Lectures
ON
# PLAGUE.

*Delivered before the Royal College of Physicians of London on June 18th, 20th, 25th, and 27th, 1907,*

BY W. J. R. SIMPSON, M.D. ABERD., F.R.C.P. LOND.,
PROFESSOR OF HYGIENE AT KING'S COLLEGE, LONDON; GOVERNMENT COMMISSIONER TO INQUIRE INTO CAUSES AND CONTINUANCE OF PLAGUE IN HONG-KONG, 1902, ETC.

## LECTURE II.[1]

*Delivered on June 20th.*

### THE PRESENT PANDEMIC.

MR. PRESIDENT AND FELLOWS,—The present pandemic has no connexion with the plagues arising in Mesopotamia the chief features of which, as shown by Tholozan, were, during the latter part of the nineteenth century, those of comparative mildness, spontaneous cessation, and self limitation, irrespectively of preventive measures. It would appear that the strain of the Mesopotamian virus has become attenuated both in powers of attack and powers of diffusion and that it required a virus derived from a new source or from another endemic centre to produce a plague endowed with more virulent and diffusive qualities.

The Chinese endemic centre in Yunnan, from which the present pandemic is derived, is, like the endemic centres in Arabia and India, between 5000 and 7000 feet high, and in this respect differs from some of the older endemic centres which are low lying. Yunnan has been known as an endemic centre of plague since 1870 but there are Chinese records which seem to indicate that the disease probably existed there for over 100 years, for mention is made of a strange and fatal rat disease prevailing at the end of the eighteenth century which also infected the inhabitants. There are no records discovered which make the endemic centre older than this and there is no evidence to show that the Black Death of 1348 arose from Yunnan. It is not known exactly when the present pandemic overflowed its boundaries and invaded the adjoining provinces of Kwangtung and Kwangsi. Plague had passed over the boundary several times during the Mahommedan rebellion in Yunnan and in 1867 reached Pahhoi, a small seaport on the southern coast of China, but there appears to have been no very extensive epidemic. As far as can be ascertained it was about the year 1890 that the disease began to show unusual activity. At that time the annual recrudescences in Mentze, one of the principal trading towns in the south-east portion of the province, became more severe and there was an extension of the disease to some of the towns situated on the West or [illegible] River and which have trade relations with Mentze and Canton. Gradually an extended area of the western parts of Kwangsi and Kwantung became affected and in January, 1894, Canton was attacked. Canton is the chief port as well as the largest and most important city in Southern China. It is only 80 miles from Hong-Kong, which, situated at the mouth of the Pearl River, contains a population that is mainly Cantonese, and so great is the intercourse between them that Hong-Kong has been styled the suburb of Canton. Hong-Kong became infected in May, 1894. Recrudescences of plague have occurred more or less in Canton and Hong-Kong since. Canton and Hong-Kong are the great marts and distributing centres for the produce of Southern China and have trade connexions with the southern parts of China, the neighbouring islands of the Pacific, and with India, Australia, Japan, and America. They were accordingly favourably situated as distributors of plague to all those countries adjacent and distant with which they had commercial relations. Their ships carried infection to the seaports of other countries, and these in their turn infected other places. The course of the spread of plague has differed from all previous pandemics in that its distribution has been by sea routes, in contradistinction to former pandemics which spread by land routes and coasting vessels. With the exception of India and one or two places in South Africa and America the infected localities are mostly on the coast, and the history of their infection is importation of the disease from some infected port with which they carry on commercial relations. Any circumstance which increases to an unusual extent the transport of goods from infected ports increases the risk of importation of the disease. Thus, the war in South Africa, with its enormous shipments of grain and fodder from the Argentine and from India, whose ports were infected with plague, introduced the disease into Cape Town and Port Elizabeth, where the rats in the docks were the first to become infected. The Russo-Japanese war was, fortunately for Europe, out of the zone of any badly plague-infected district.

Many places have been infected in different parts of the world, but none outside India have hitherto given rise to any very serious epidemic. Still, notwithstanding its apparent inability to develop into an epidemic, yet the disease has in many instances when imported into a locality shown a remarkable persistence as displayed by the annual recurrence of sporadic cases at the season of the year favourable to epidemic plague. The potentiality of plague becoming epidemic in such localities is there all the same and no country is safe while it retains infection.

### THE EPIDEMIC IN INDIA.

At present, however, the chief interest of this pandemic lies in India. Imported into the city of Bombay in 1896 from Hong-Kong it broke out in epidemic form in September of that year, and by the end of April, 1897, when the first epidemic was over, it had caused 11,000 deaths. Every year there has been a recrudescence and the total number of deaths from plague in Bombay since its appearance till the end of 1906 is 150,000. From Bombay city it spread to the Bombay Presidency, chiefly by coasting boats and by the railways carrying fugitives infected with plague to their native villages. By December, 1897, 50,000 deaths had occurred in the Presidency, and a few deaths in some of the other provinces. It has continued ever since in this Presidency and has, up to the end of April, 1907, caused 1,500,000 deaths. Gradually the disease has spread to the other provinces of India, affecting some severely and some lightly, and the grand total of deaths from plague in India, as shown in the following statement of annual deaths, amounts to over 5,000,000 :—

*Total Recorded Annual Deaths from Plague in India.*

| Years. | British Territory. | Native States. | Total. |
|---|---|---|---|
| Sept., 1896, to end of 1897 | 57,000 | — | 57,000 |
| 1898 | 89,200 | 27,000 | 116,200 |
| 1899 | 102,300 | 36,600 | 138,900 |
| 1900 | 73,500 | 19,200 | 92,700 |
| 1901 | 234,600 | 46,100 | 280,700 |
| 1902 | 445,200 | 126,900 | 572,100 |
| 1903 | 701,800 | 179,000 | 880,800 |
| 1904 | 938,000 | 203,300 | 1,141,300 |
| 1905 | 940,800 | 128,300 | 1,069,100 |
| 1906 | — | — | 332,000 |
| 1907 (first 4 months) | — | — | 641,000 |
| | | | 5,321,800 |

The population of British territory is 232,000,000 and that of the native states 62,000,000. The 5,000,000 deaths represent accordingly one death in every 60 of the inhabitants of India. The mortality during the later years is very much greater than in the earlier, the deaths in the last five years and four months reaching over 4,500,000.

The fact that India is an immense country with nearly 300,000,000 inhabitants has often been considered as minimising the gravity of the situation which 5,000,000 of deaths would otherwise represent, and the argument is employed that in such a large country it is impossible to deal with the disease. 1,000,000 deaths a year in a population of 300,000,000 is viewed only as 1 death in 300 of the inhabitants and from that point appears not to have much influence on the vast population. It is once more the fallacy of averages. There is the old story of the man who, assured that the average depth of a river was four feet, endeavoured to cross it and was drowned. He had not reckoned that it might be shallow in some parts and deep in others. Plague is not epidemic over the whole of India. But, even if it were, and admitting that India, including Burma, is greater by 12,000 square miles than the whole of Europe, excluding

---

[1] Lecture I. was published in THE LANCET of June 29th, 1907, p 1757.

Russia, Poland, and Finland, most people will allow the mortality is serious. 5,000,000 deaths from plague in Europe would be considered on this side of the Red Sea appalling in whatever way it was distributed. And if it happened that many of the countries in Europe were more or less free from plague and that the disease concentrated itself on three or four countries, such as France, Italy, Austria, and Great Britain and Ireland, causing in these nearly 4,500,000 deaths out of the 5,000,000, the mortality would be viewed as a catastrophe of the first magnitude. But if in addition to the loss of the 4,500,000 of inhabitants there were, owing to the recurrence of the disease, a prospect of several more millions being destroyed in those places already attacked, and that there was the further danger as the pandemic developed of the other countries—such as Germany, Holland, Spain, Greece, and Turkey—being attacked in the same way, then the situation of Europe would be similar to that of India to-day. This will serve to give some conception of the tragedy which is going on in India at the present time and of the future perils of that unhappy country. It is a misconception, fraught with the greatest danger, to suppose that in India the plague is only causing a death-rate of 3 per 1000, as was stated in the House of Commons during the debate on the Indian Budget. The figures giving the total number of deaths in the different provinces of India since September, 1896, exhibit a very different degree of incidence and severity in each. The Madras Presidency has escaped with a comparatively small number of deaths; so have most of the other provinces. Four provinces have hitherto borne the brunt of the epidemic in India out of the 15 presidencies, provinces, and States into which India is divided. These are the Bengal Presidency, with a little over 500,000 deaths; the Bombay Presidency, with a little over 1,500,000 deaths; the United Provinces, with nearly 1,000,000 deaths; and the Punjab, with over 1,750,000 deaths.

The annual returns for these provinces are approximately represented in the following figures:—

| Year. | Bombay and Sindh, population 22,000,000. | Bengal, population 74,000,000. | United Provinces, population 47,000,000. | Punjab, population 25,000,000. |
|---|---|---|---|---|
| September, 1896, to end of 1897... ... | 57,000 | — | 80 | 179 |
| 1898 ... ... ... ... | 104,000 | 166 | 116 | 1,800 |
| 1899 ... ... ... ... | 117,000 | 3,000 | 6 | 250 |
| 1900 ... ... ... ... | 38,000 | 37,000 | 116 | 500 |
| 1901 ... ... ... ... | 158,000 | 78,000 | 9,000 | 18,000 |
| 1902 ... ... ... ... | 217,000 | 32,000 | 43,000 | 222,000 |
| 1903 ... ... ... ... | 340,500 | 65,000 | 80,000 | 210,000 |
| 1904 ... ... ... ... | 281,000 | 75,000 | 179,000 | 402,000 |
| 1905 ... ... ... ... | 96,000 | 126,000 | 383,000 | 389,000 |
| 1906 ... ... ... ... | 71,000 | 50,000 | 57,000 | 98,000 |
| To May 11th, 1907... | 52,000 | 50,000 | 223,000 | 432,000 |

### THE EPIDEMIC IN THE PUNJAB.

The province of the Punjab which has lost nearly 1,750,000 of its inhabitants is in size less than one-twelfth the total area of India and it contains less than one-eleventh part of its population. It is slightly larger in area than Great Britain but is smaller than Great Britain and Ireland. Its population, including the Native States, is 25,000,000 without the Native States 20,000,000, against the 43,000,000 of Great Britain and Ireland, so it is not a large province, and the loss of 1,750,000 out of 25,000,000 can only be viewed as an appalling disaster. If plague had destroyed 3,000,000 of the inhabitants of Great Britain and Ireland in ten years it would have represented proportionately what the Punjab has lost during that time with its smaller population. The plague began very slowly in the Punjab and took six years before causing 250,000 deaths. There were 179 deaths in 1897, 1871 in 1898, 253 in 1899, 525 in 1900, then, as reported by the Sanitary Commissioner for the Province, all restrictions were removed and a new policy was introduced; in 1901 there were 18,877 deaths and in 1902, 222,533 deaths. The great mortality has been during the past four and a half years and the greatest during 1907, when over 500,000 deaths occurred during the first five months, which is the epidemic season. 800,000 deaths from plague occurring in Great Britain and Ireland in five months would represent the intensity of the epidemic in the Punjab during the early months of this year. There is no comparison between 800,000 deaths and 54,000, which was the largest epidemic of cholera in England in 1854–55 and which was considered to be appalling in this country. During the week ending May 11th, when the climax of the present year's epidemic in the Punjab was reached, there were 60,000 deaths from plague in that province, which in the British Isles would be represented by 100,000 deaths in one week in an epidemic of the same intensity. The condition of affairs in this country with 100,000 deaths from plague taking place in one week in the British Isles as the climax of an epidemic which in the course of five months had destroyed 800,000 of its people would be similar to that now existing in the Punjab at the present time. The state of mind of the rest of the inhabitants of Great Britain and Ireland under such a catastrophe coming on the top of a devastation which had previously destroyed over 2,000,000 would not be one of calmness and contentment. In the first 12 weeks of the year there were 145,000 deaths from plague in the Punjab; in the next six weeks 286,700 deaths. During these six weeks the plague deaths were as follows:—

| | |
|---|---|
| Week ending April 6th ... ... ... ... | 34,651 deaths. |
| ,, ,, ,, 13th ... ... ... ... | 39,084 ,, |
| ,, ,, ,, 20th ... ... ... ... | 47,047 ,, |
| ,, ,, ,, 27th ... ... ... ... | 54,204 ,, |
| ,, ,, May 4th ... ... ... ... | 51 305 ,, |
| ,, ,, ,, 11th ... ... ... ... | 60,400 ,, |

These facts will dispel the view that the plague is a small thing in India scattered over a vast continent. The effect in the Punjab may be gathered from the following extract from the *Times of India* of June 1st, 1907:—

> A picture of some of the results of the terrible epidemic in the Punjab is given by the "Statesman's" Simla correspondent. To dismiss this epidemic (he writes) with the statement that the people of the Punjab have been dying from it for some time past at the rate of 50,000 a week gives but a faint idea of the deserted villages, the crops rotting upon the ground over wide areas for lack of men to reap them, and the breaking up of homes and family life inseparable from such a calamity. The people have learnt to quit their villages and to camp out in the open when the disease appears and the worst is now over for the year, since the hot winds of May invariably reduce the mortality. But the evil has attained such extraordinary magnitude that it is affecting the whole outlook of the people. In Simla carpenters have become difficult to procure, because the Jullundur district, where most of them lived, has suffered so terribly. The plague is an undoubted factor, though perhaps not the principal one, in connexion with the much-discussed unrest. It is also becoming important in changing the relations between population and sustenance, since the survivors inherit the property of those who succumb and grow less inclined in consequence to work for themselves.

In another extract from the same paper it is stated that "natives of Rawalpindi who have relations in the plague-infected villages will not go to tend their sick; others have left the corpses or belongings of deceased relatives to the mercy of the village rather than risk plague. Firewood is not obtainable to burn the dead, so timber from the houses is being utilised and many Hindus are burying their dead." This last is against the religious views of the Hindus, but their necessity has brought it about.

The concentration in the Punjab does not mean an equal distribution of the disease over the whole province. The mortality falls with unequal intensity on the divisions and districts into which the province is divided.

Table I. gives the deaths registered in the rural circles of the Punjab with the death-rates of each from 1901 to 1905 inclusive. The statistics are not available for the great epidemic of 1907 or for the lesser one of 1906, but those which are available show the great incidence of plague on certain rural areas. In 1902 the district of Ludhiana was worst affected and had a death-rate from plague of over 70 per 1000. More than a fourth of the deaths in the rural circles occurred in this circle. Umballa came next with 30 per 1000 and Sialkot with 26 per 1000; one-third of the circles were not infected. In 1903 Gujranwala was the worst infected circle and had a death-rate from plague of 65 per 1000; Amritsar and Jullundur came next with a mortality of 30 per 1000 each; seven circles still remained unattacked. In 1904 only one circle remained free from the disease. Shahpur had a death-rate from plague of 74 per 1000 of its inhabitants, Sialkot 48 per 1000, Gurdaspur 46 per 1000, Ludhiana 45 per 1000, Gujrat 41 per 1000, and Jullundur 35 per 1000. In 1905 the recurrence in the rural circles was not quite so severe as in 1904, still Rohtak had a death-rate from plague of 52 per 1000, Gurgaon 40 per 1000, and Ludhiana 34 per 1000. Similar rates are to be noted in the towns of the Punjab. For instance, in 1902 Rupar, a

TABLE SHOWING THE DEATHS REGISTERED FROM PLAGUE IN THE DISTRICTS (RURAL CIRCLES) OF THE PUNJAB FROM 1901 TO 1905; RETURN FROM REPORTS OF THE SANITARY COMMISSIONER FOR THE PUNJAB.

| Rural circles. | Population according to census of 1901. | 1901. |  | 1902. |  | 1903. |  | 1904. |  | 1905. |  | Total for five years. No. of deaths. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | No. of deaths. | Death-rate. | No. of deaths. | Death-rate. | No. of deaths. | Death-rate. | No. of deaths. | Death-rate. | No. of deaths. | Death-rate. |  |
| Delhi Division: |  |  |  |  |  |  |  |  |  |  |  |  |
| Hissar ... ... ... | 693,044 | — | — | — | — | 229 | 0·33 | 1,688 | 2·44 | 13,595 | 19·62 | 15,512 |
| Rohtak ... ... ... | 576,415 | — | — | — | — | 187 | 0·32 | 2,859 | 4·96 | 30,336 | 52·63 | 33,382 |
| Gurgaon ... ... ... | 678,503 | — | — | 4 | 0·01 | 2,754 | 4·06 | 5,295 | 7·95 | 27,737 | 40·88 | 35,890 |
| Delhi ... ... ... ... | 457,658 | — | — | — | — | — | — | 590 | 1·29 | 6,116 | 13·36 | 6,706 |
| Kárnal ... ... ... | 799,607 | — | — | 184 | 0·23 | 552 | 0·69 | 1,644 | 2·06 | 8,558 | 10·70 | 10,938 |
| Umballa ... ... ... | 698,479 | 153 | 0·22 | 21,152 | 30·28 | 4,537 | 6·50 | 17,839 | 25·54 | 16,510 | 23·64 | 60,191 |
| Simla ... ... ... ... | 21,449 | — | — | 5 | 0·23 | — | — | 5 | 0·23 | — | — | 10 |
| Total ... ... ... | *3,925,155* |  |  |  |  |  |  |  |  |  |  | *162,629* |
| Jullundur Division: |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangra ... ... ... | 751,945 | — | — | 5 | 0·01 | — | — | 33 | 0·04 | 23 | 0·03 | 61 |
| Hoshiarpur ... ... | 923,773 | 2,308 | 2·50 | 11,684 | 12·65 | 17,349 | 18·78 | 26,894 | 29·11 | 17,506 | 18·95 | 75,741 |
| Jullundur ... ... | 789,950 | 3,415 | 4·32 | 15,765 | 19·96 | 23,745 | 30·06 | 28,298 | 35·82 | 22,383 | 28·33 | 93,606 |
| Ludhiana ... ... ... | 586,569 | 427 | 0·73 | 41,282 | 70·38 | 7,357 | 12·54 | 31,522 | 45·91 | 20,066 | 34·21 | 100,654 |
| Ferozepore ... ... | 881,750 | 8 | 0·01 | 6,126 | 6·95 | 5,584 | 6·33 | 12,581 | 14·27 | 21,070 | 23·90 | 45,369 |
| Total ... ... ... | *3,933,987* |  |  |  |  |  |  |  |  |  |  | *315,431* |
| Lahore Division: |  |  |  |  |  |  |  |  |  |  |  |  |
| Montgomery ... ... | 477,936 | — | — | 1 | 0·02 | 207 | 0·43 | 262 | 0·55 | 989 | 2·1 | 1,459 |
| Lahore ... ... ... | 906,019 | 174 | 0·19 | 11,071 | 12·22 | 21,985 | 24·27 | 22,440 | 24·77 | 26,897 | 29·69 | 82,567 |
| Amritsar ... ... ... | 842,818 | 1 | 0·001 | 3,668 | 4·35 | 25,593 | 30·37 | 20,929 | 24·83 | 28,649 | 33·99 | 78,840 |
| Gurdaspur ... ... | 871,990 | 4,325 | 4·96 | 14,100 | 16·17 | 5,195 | 5·96 | 40,806 | 46·80 | 19,260 | 22·09 | 83,686 |
| Sialkot ... ... ... | 994,914 | 3,478 | 3·50 | 26,707 | 26·84 | 13,678 | 13·75 | 48,347 | 48·59 | 11,497 | 11·56 | 103,707 |
| Gujranwala ... ... | 822,871 | 1 | 0·001 | 3,189 | 3·88 | 52,725 | 65·72 | 26,299 | 32·78 | 19,736 | 24·60 | 101,950 |
| Total ... ... ... | *4,916,548* |  |  |  |  |  |  |  |  |  |  | *452,209* |
| Rawalpindi Division: |  |  |  |  |  |  |  |  |  |  |  |  |
| Gujrat ... ... ... | 709,017 | — | — | 353 | 0·50 | 2,535 | 3·58 | 29,478 | 41·58 | 13,917 | 19·63 | 46,283 |
| Shahpur ... ... ... | 471,938 | — | — | 5 | 0·01 | 731 | 1·55 | 35,381 | 74·97 | 4,196 | 8·90 | 40,313 |
| Jhelum ... ... ... | 565,297 | 1 | 0·001 | — | — | 21 | 0·04 | 10,388 | 21·98 | 134 | 0·28 | 10,544 |
| Rawalpindi ... ... | 819,219 | — | — | — | — | 118 | 0·14 | 613 | 1·31 | 816 | 1·74 | 1,547 |
| Attock ... ... ... | — | — | — | — | — | — | — | 13 | 0·03 | 45 | 0·10 | 58 |
| Total ... ... ... | *2,565,471* |  |  |  |  |  |  |  |  |  |  | *98,745* |
| Mooltan Division: |  |  |  |  |  |  |  |  |  |  |  |  |
| Mianwali ... ... ... | 395,033 | — | — | — | — | — | — | 1 | 0·003 | — | — | 1 |
| Jhang ... ... ... | 954,602 | — | — | 136 | 0·14 | 2,175 | 2·28 | 3,639 | 3·81 | 517 | 1·15 | 6,467 |
| Lyalpur ... ... ... | — | — | — | — | — | — | — | — | — | 731 | 1·43 | 731 |
| Mooltan ... ... ... | 601,975 | — | — | 12 | 0·02 | — | — | 35 | 0·06 | 39 | 0·08 | 86 |
| Muzaffargarh ... | 393,253 | — | — | — | — | — | — | — | — | — | — | — |
| Dera Ghazi Khan... | 428,705 | — | — | — | — | 1 | 0·002 | 1 | 0·002 | 107 | 0·25 | 109 |
| Total ... ... ... | *2,773,568* |  |  |  |  |  |  |  |  |  |  | *7,394* |
| Total rural circles | *18,114,729* | 14,291 | 0·79 | 155,449 | 8·53 | 187,258 | 10·35 | 367,980 | 20·34 | 311,430 | 17·22 | *1,036,408* |

small town in the Umballa district, had a death-rate of 90 per 1000 of its population from plague. In Jamke, a small town in the Sialkot district, a death-rate of 116 per 1000 from plague was registered.

In 1902 the Sanitary Commissioner reports that in the minor towns of the Ludhiana district the ravages committed were fearful. Raikot and Machiwara were almost decimated. Jagraon lost 11 per cent. of its population and Khanna no less than 14 per cent. In 22 villages the death-rate from plague ranged from 20 to 40 per cent. of the population. These death-rates, or depopulation of villages, are similar to those which are recorded as having occurred in some of the villages of the Bombay Presidency. There some of the villages lost 33 per cent. of their inhabitants. As is always the case in plague, some places escape lightly in one year while others are almost depopulated.

Since 1903 special reports on plague in the Punjab have been discontinued and in that year the administration of plague was handed over to the Inspector-General of Civil Hospitals, an officer whose duties in ordinary times are always of an onerous character and who could have no time to devote to this extra work. Owing to these changes the information is henceforth scanty. In 1904, however, there can be gleaned from the few remarks made by the Sanitary Commissioner, when treating of the vital statistics of the province, the havoc which the plague caused in some localities. Thus he says: "As an instance of the fearful increase in the mortality caused by plague, it may be noted that the death-rate of the district of Shahpur in April when plague was most virulent was *twenty-three times* higher than in August, by which time the disease had entirely disappeared. The total number of deaths in April in that district was 17,889, of which no fewer than 17,012 were ascribed to plague, as against only 781 in August, including one death from plague. The death-rate for Shahpur for April was *415 per mille per annum.*" With this rate in the district of Shahpur as a whole, it is safe to say that similar rates of 20 and 40 per cent. occurred in some of the villages as were recorded two years previously in the villages of Ludhiana. There was in 1904 an abnormal increase in the total urban death-rate which the Sanitary Commissioner states was accounted for by plague, and he mentions the high rate of 145 per 1000 in Hodal in the Gurgaon district and of 125 per 1000 in Miani in the Shahpur district, whose death-rate from plague was 100 per 1000 in each case.

If the totals for the five years in the rural circles be taken it will be seen that the Ludhiana district lost 100,000 of its inhabitants out of 586,000, or more than 1 in 6. Sialkot lost 103,000 out of 994,000, or nearly 1 out of every 9. Gujranwala lost 101,000, or nearly 1 in 8 of its population. I have not been able to add to these losses in the rural districts those of 1906, which was a comparatively light year, and those of 1907, which has been worse than any of the previous years, but the figures as they stand demonstrate a devastation on an immense scale, and which with the losses of 1906 and 1907, together with what is to come, means a mortality comparable with even that of the Black Death.

Though not able to give the statistics of the rural circles for 1906 and the earlier months of 1907, I am able to give them for the divisions and districts of the Punjab as a whole from the year 1901 to May 11th, 1907. There are five divisions in the British territory of the Punjab Province. These divisions contain a population of 20,000,000. Since 1901 they have lost 1,500,000 of their inhabitants—i.e., more than one-fourteenth of their total population. The Jullundur and Lahore divisions have suffered the most. Jullundur has lost 441,000 of its inhabitants out of 4,260,000—i.e., more than one-tenth; and Lahore has lost 665,000 out of 5,550,000, or nearly one-eighth. In these two divisions the incidence on some of the districts was very heavy; thus the district of Ludhiana has lost 140,000 out of 673,000 of its inhabitants, which is more than one-fifth of its population; another district of Gujranwala has lost 156,000 of its inhabitants out of 890,000, or slightly less than one-fifth of its population.

There are 29 districts in the Punjab and eight districts have lost less than 1 per cent. of their population, seven districts under 5 per cent. of their population, three districts over 5 and under 10 per cent. of their population, nine districts over 10 and under 15 per cent. of their population, and two districts have lost 17 and 20 per cent. of their population. The map shows the distribution of this mortality and its incidence in percentages of the population. With the districts as a whole giving such figures it is certain, owing to the fact that plague is never evenly distributed, that some of the villages have lost half their population.

## THE PREVENTION OF PLAGUE IN INDIA THE MOST IMPORTANT QUESTION FOR INDIA AND ENGLAND AT THE PRESENT TIME.

The disease attacks the able-bodied and the strong, the bread-winners and protectors of the family. It is the sturdy peasants of the Punjab, the sowers and tillers of the soil, the producers, that are dying in such enormous numbers, and if they continue to die the effect, as has been the case in all epidemics, will be a serious disorganisation of the social and economic conditions of the province. Already in 1903 the Lieutenant-Governor of the province recorded that there had been an increase of crime and although the effects of the plague had not been immediately apparent he anticipated that trade, agriculture, and education, recruiting and other interests were bound to suffer. These anticipations and more have happened and the state of the Punjab has become socially and politically a serious cause of anxiety. It has recently been announced in the *Times* that there is a deficit of 18 lacs of rupees in the Punjab revenues of last year and that in many places the crops are standing unreaped because there are no harvesters. The silence of those unharvested fields, together with the figures of mortality, should bring to everyone's imagination a very clear realisation of the awful devastation of the Punjab. Nor are the effects likely to be confined to the Punjab, for there can be no moral and material progress of India as a whole when one of its smaller provinces is being more than decimated, and when there is danger of the disease attacking other provinces with a similar intensity.

It will be recognised from the foregoing facts that the dying millions in India present a problem of the greatest urgency and danger. The plague if left as it has been within recent years to take its own course bids fair in such circumstances to overwhelm not only India but also to be a danger to the world.

## MODES OF DISSEMINATION AND CHANNELS OF INFECTION.

Turning to the preventive aspects of plague the question arises, Are the principal modes of dissemination and the channels of infection known? It is now accepted that the importation of plague into a healthy locality can be effected by an infected human being, or an infected rat, or infected clothes. Observations have been so numerous as regards these agencies as to remove all doubt on this point. Dr. E. E. Klein has further shown by some important experiments that infected grain may also be an agent in the importation of the disease. By feeding rats and guinea-pigs with grain which had been contaminated with old cultures of plague, and which was then dried, he was able to cause plague in those animals, so that grain which has been infected with infective material from plague rats or human beings may, on importation into a healthy seaport, give plague to healthy rats on shore which eat the contaminated portions of the grain. The association of corn ships with plague is a very old one. In recent years the association has been ascribed almost wholly to plague rats on board ship which have left the ship and infected healthy rats on shore, but now infected grain must be added as a likely agent.

Once imported, the dissemination of the disease is effected by similar agents as those bringing about importation. Rats, clothes, human agency, and food play their respective parts. It is now almost universally admitted that, except in pneumonic cases, rats are the principal agents in the dissemination of the disease, though personal contact, as in typhoid fever, also plays its part. They bring the infection into houses connected with their subterranean passages. In Hong-Kong one could trace many of the subterranean passages with their infected rats and their connexion with the distribution of the disease in the houses. A systematic bacteriological examination of rats trapped and found dead proved that plague in the rats of the locality preceded plague in man. So constantly did this occur that as soon as plague-infected rats were discovered measures were introduced as in Cape Town but on a more extended and systematic basis, of treating the house or locality as plague infected. In other words, a policy of forestalling plague was adopted. The precedence of rat plague in relation to plague epidemics was observed in Bombay, the Punjab, Calcutta, South Africa, Australia, and Southern China. The value of the Hong-Kong observations lay in the direct evidence obtained by scientific and precise methods not only of the direct relationship which the precedence of rat plague bore to human plague but also of the important rôle which the rat plays in the spread of the disease from house to house and in groups of houses. Similar observations were made by Dr. J. Ashburton Thompson in Sydney, but under different conditions. The Sydney outbreaks are comparatively mild, the mortality being under 40 per cent., and consist mainly of bubonic cases with but few septicæmic cases. Probably the type in Sydney was the same as that met with in Cape Town, where one of the marked features was absence of cerebral symptoms and intestinal disorders, differing in this respect from the type met with in Poona in 1897, but which in 1907 seemed to me to have changed, presenting fewer nervous symptoms. The Hong-Kong outbreaks are exceptionally virulent, the mortality being over 80 and 90 per cent. and with a large percentage of septicæmic cases.

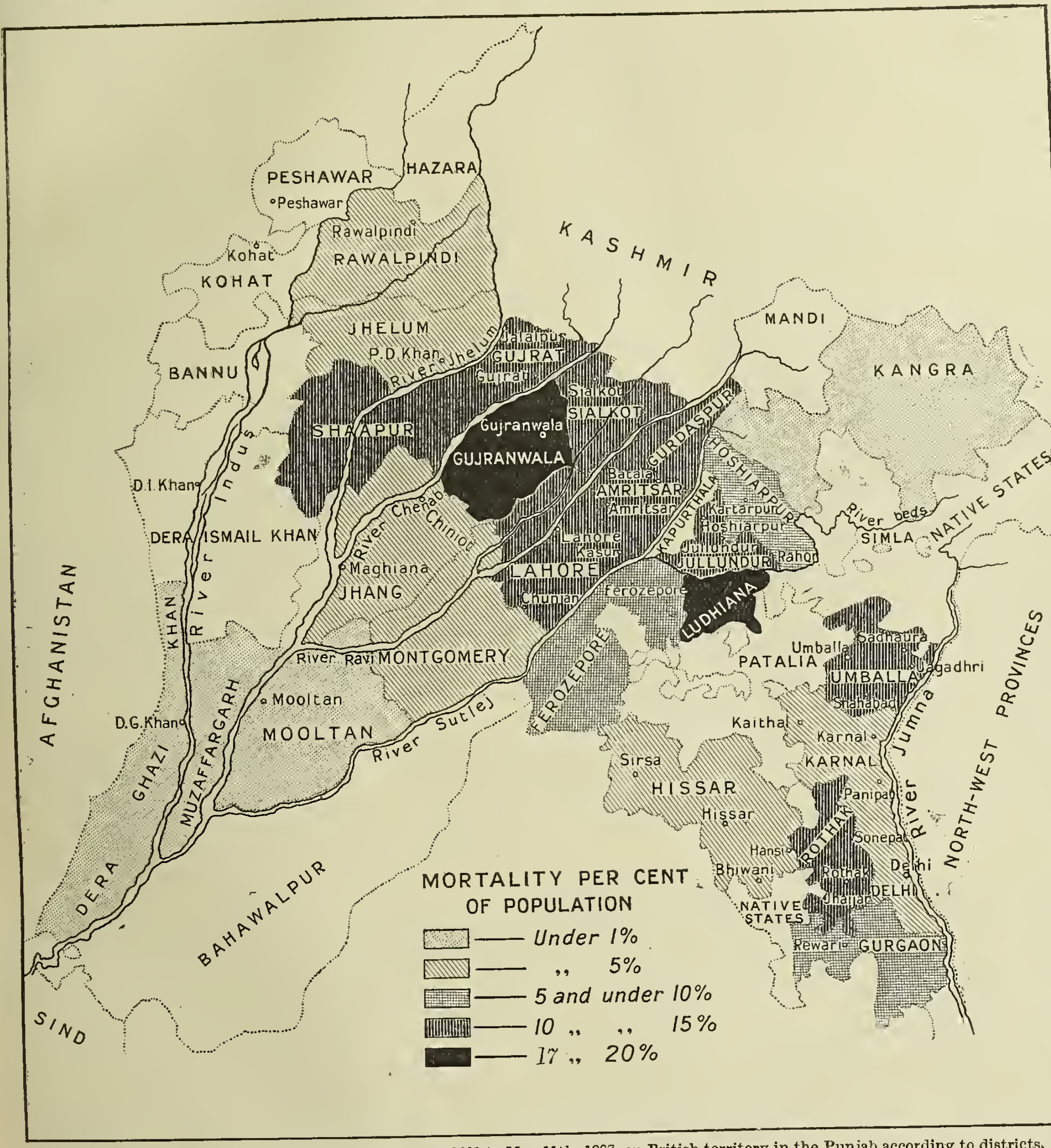
The problem of the dissemination of the disease by rats is not solved by simply proving that rats are infected with plague in a house or locality before human beings, or by the fact that if measures are taken to dispose of the infected rats human plague will not occur, and, *vice versâ*, if no measures are taken plague will attack some of the inmates of the house. The question naturally arises, How is the infection of the rat transferred to man? There are two views and the upholders of each have a tendency to claim that theirs is the only way. The more that is learnt of plague the more it is evident that there is no only way.

### THE FLEA THEORY.

Dr. Ashburton Thompson had exceptional opportunities of studying the small outbreaks in Sydney and on that study he came to the conclusion that Simond's theory that the flea on the rat, leaving the rat dead from plague and then biting man, transfers plague from the rat to man, explained the phenomena connected with plague. That theory, of which

Dr. Ashburton Thompson is the champion, has recently received very valuable support in its favour from the very important experiments made by the Indian Plague Commission and which are the outcome of certain researches by Captain W. G. Liston, I.M.S., to whom much credit is due for his excellent work in this direction. These experiments established first the accuracy of Simond's and Gauthier's and Raybaud's experiments as to the power of infected fleas from plague rats causing plague in healthy rats: 61 per cent. of the white rats, which are very susceptible to plague, and 52 per cent. of the Bombay rats experimented on contracted plague by the transference to healthy rats of fleas from infected rats. Similarly, guinea-pigs allowed to run free in plague houses in many instances attracted a large number of fleas, most of which were rat fleas, and 29 per cent. of the guinea-pigs contracted plague. Animals in cages protected from fleas by a layer of "tanglefoot" did not contract plague, while animals in cages not so protected developed plague to the extent of 24 per cent. Out of 247 fleas caught on the "tanglefoot," 60 per cent. were human, 34 per cent. were rat, and 6 per cent. were cat fleas. Plague-like bacilli were demonstrated in the stomach contents of one out of 85 human fleas dissected and of 23 out of 77 rat fleas. The commission carried the observations a stage further, and by the transference of infected fleas from guinea-pigs started an epidemic of plague among healthy guinea-pigs which was maintained by the introduction of fresh infected fleas.

That the flea is an important agent in spreading plague from rat to rat and in the maintenance of rat epizootic is evident from these experiments. The rat flea, variously named by different observers Pulex cheopis, Pulex murinus, and Pulex pallidus, and commonly found on the Mus rattus, was the active agent in the transfer of the disease from rat to rat and from rat to guinea-pig. To the extent to which the Pulex cheopis is an agent in keeping up the epizootic in the rat, it will account for the epidemiology of plague, but it is not a necessary deduction from this that Pulex cheopis plays the same active part in the transfer of the disease from the rat to man as it does from rat to rat, though it may be credited with an indirect influence in the maintenance of the disease in man owing to its being an active



Map showing incidence of mortality from plague from 1901 to May 11th, 1907, on British territory in the Punjab according to districts. Scale 100 miles to the inch.

agent in the dissemination of the disease in rats and possibly in other animals.

There is much in favour of Pulex cheopis playing an active part in the transfer of plague from the rat to man. There can be no doubt that Pulex cheopis, unlike Pulex fasciatus, another common rat flea, bites man. Pulex cheopis is only found occasionally in ordinary circumstances on man. As a rule, it is either the human flea or Pulex canis that is usually found on man. Hilger identified 59 per cent. of over 2000 fleas which he found on man as being Pulex canis, and it may possibly have been this flea which, owing to its wide distribution on rats, dogs, cats, and man, gave rise to the older views that dogs, cats, and fowls from infected houses spread plague even when these animals were unaffected. In certain circumstances Pulex cheopis may be found in numbers on man, such as the instance given by Liston, in which 46 per cent. of the fleas found on the persons of inmates in an infected house proved to be Pulex cheopis.

In Hong-Kong in 1902 I was able to infect two monkeys by placing rats which had died from plague and which were covered with fleas in the same cages as the monkeys but in compartments which prevented any possible contact between rat and monkey but which allowed of a free passage of fleas from rat to monkey. Both monkeys fell ill but recovered. The Indian Plague Commission has in a similar fashion on two occasions succeeded in transferring the plague of the rat to monkeys by the agency of fleas. As it is in the monkey so probably it is the case in man. No direct experiments can be made to prove this, but the accidental infection in man caused by the handling of rats dead from plague and on which Simond's first founded his theory would appear to bear the interpretation given them by the laboratory experiments.

On the other hand, taking the most liberal interpretation of the flea theory based on the experiments mentioned, it is doubtful whether the flea theory will account for more than a certain percentage of the fatal bubonic cases which may vary in different circumstances in different localities. Out of ten experiments with monkeys by the Indian Plague Commission eight failed and in my own experiments the monkeys recovered. Moreover, the fact that infants under one year of age are more or less immune to plague militates against the flea being as important an agent in the causation of human plague as of rat plague. The incidence on infants is very small. This has been shown by Lieutenant-Colonel C. J. Bamber, I.M.S., in the different Panjab epidemics. This immunity is shared with the aged. Fleas probably are not attracted to old people but the same cannot be said with reference to infants who sit, lie on, and crawl about the floor. The food of infants fed as a rule at the breast of the mother differs from that of the adults in that it is pure and not subject to contamination with plague virus and herein probably lies the explanation of the immunity of the infant.

### THE FOOD THEORY.

The difference in the type of the disease in Sydney as contrasted with Poona and Hong-Kong has already been mentioned. More post-mortem examinations are made on plague cases in Hong-Kong than in any other part of the world, and it is on the observations there both on man and animals that the theory has been formulated that the ingestion of food contaminated with the plague virus is the cause of septicæmic cases of plague.

Wilm in 1896 found that in 20 per cent. out of 150 necropsies the mucous membrane of the stomach or intestines showed lesions with hæmorrhages, and he was successful in causing plague in fowls by feeding them with plague material and with pure cultures of the plague bacillus. He also succeeded in infecting a pig fed with the spleen of a man who had died from plague. In 1897 the German Commission in Bombay was successful in causing plague in rats, a mongoose, a squirrel, and monkeys by feeding experiments, but failed with mice, guinea-pigs, dogs, and pigs. The Austrian Commission was successful in similar experiments with guinea-pigs, rats, mice, and cats, but failed with dogs, pigeons, hens, and a mongoose.

In 1902 I had the opportunity of seeing with Dr. W. Hunter a large number of necropsies on plague cases in Hong-Kong and we were able to confirm the great frequency with which the intestines are the seat of primary hæmorrhagic lesions and the mesenteric glands swollen and hæmorrhagic. Later Dr. Hunter has given a detailed description of the pathological changes which are observed in the alimentary canal and which are practically present in all the septicæmic cases of plague. The stomach shows well-marked congestions and hæmorrhages; some of the hæmorrhages may occasionally be of the size of a dollar piece. The changes met with in the small intestines are even more severe than those in the stomach. Petechial hæmorrhages and blood extravasations with necroses, forming not infrequently superficial ulcers, are common. Peyer's patches and the solitary follicles are swollen and may be hæmorrhagic, and in some parts inflammatory changes extend through the walls of the intestine. The mesentery is frequently affected by extensive hæmorrhages and the contained lymphatic glands are enlarged and hæmorrhagic. The lymphatic glands standing in relation to the ileum and cæcum are almost always affected. They are frequently double their ordinary size and on section are œdematous, with minute blood extravasations into their parenchyma. With Dr. Hunter and Dr. Matsuda, a Japanese medical man lent to the Government of Hong-Kong by Japan, I was able to carry out a series of feeding experiments which established that poultry, calves, pigs, sheep, rats, and a monkey contracted plague by feeding. We failed to cause plague in dogs by feeding. These observations on men and on animals led me to the conclusion that septicæmic plague is in most cases contracted by the alimentary canal; an additional fact which lends support to this view is the frequency of abrasions and denudations of the alimentary canal in Asiatics. Dr. H. Fraser, who is engaged in a research on the condition of the intestines, showed me in his laboratory at Kuala Lumpur in the Malay States microscopical specimens of the intestines of Chinese and Indians in which he had found over 50 per cent. with abrasions or ulcers. Dr. Hunter has also shown that when premonitory symptoms of plague do manifest themselves the patients frequently suffer from gastric and intestinal disorders with diarrhœa and in these cases examination of the blood shows a septicæmic infection.

More decisive than even the foregoing experiments on animals are those made by Dr. Klein in this country because of the convincing histological work which he has associated with them. He has proved beyond all question of dispute that the plague bacilli taken in contaminated food multiply while the food is in the intestines, enter through the lymph channels or lacteals of the intestines, and invade the blood in swarms. The only qualification is that the microbes shall be so protected as not to be affected by the gastric juice.

## THE MOST FREQUENT HERNIA IN CHILDHOOD AND ITS SIGNIFICANCE.[1]

BY EDRED M. CORNER, M.A., M.C. CANTAB., B.SC. LOND., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS TO THE CHILDREN'S HOSPITAL, GREAT ORMOND-STREET, AND TO ST. THOMAS'S HOSPITAL.

IN February, 1904, I delivered a lecture at the Children's Hospital, Great Ormond-street, on the Pathology and Treatment of the Herniæ of Children and their Relation to Similar Conditions in the Adult.[2] At the time of its publication, some months after its delivery, I had other work in hand which would assist in the exposition of my view that the majority of herniæ in children were acquired and not congenital. The publication of these observations has been delayed until the present lecture.

If one turns to the work of those who regard these herniæ as being of congenital origin, and therefore often requiring active surgical interference, it is obvious that they take as the standard of their authority the fact that they have performed so many tens or hundreds of operations for the condition; indeed, it is usually stated in the early paragraphs of their papers. This is a very narrow point of view. The problems of the origination of herniæ in children cannot be settled only by observations made at the operating table. Careful notes and records in the out-patient room must come first and the results obtained in this way must be examined in the operating theatre. It will then be found that there is a close relationship between the conditions of the parts noted in the theatre and certain facts in the clinical history observed in the out-patient department. By such observations, spread over the last three and a half years, the writer has been able to take a broad survey of the subjects included under the title of this lecture, some results of which are brought to notice in this communication. At a later date the writer hopes to present more of his observations.

---

[1] Part of a clinical lecture delivered at St. Thomas's Hospital.

[2] THE LANCET, August 20th, 1904, p. 511.

With the aid of my clinical assistants, especially Mr. J. Howell Evans and Dr. H. Irving Pinches, a survey was made of the herniæ in the out-patients at Great Ormond-street who attended on my days. To these two gentlemen I owe many thanks for the work which they have performed. When we had completed about 700 observations it was felt that a most important factor had been omitted and that the whole work had to be re-done. The results of this collective investigation of the first series are summed up as follows:—

TABLE I.—*First Series of 700 Observations.*

| | Per cent. |
|---|---|
| Right inguinal herniæ ... ... ... ... ... ... ... ... ... | 38·3 |
| Right and left inguinal herniæ ... ... ... ... ... ... | 10·8 |
| Right and left inguinal and umbilical herniæ ... ... ... | 8·0 |
| Right inguinal and umbilical herniæ ... ... ... ... ... | 12·0 |
| Left inguinal herniæ ... ... ... ... ... ... ... ... ... | 10·6 |
| Left inguinal and umbilical herniæ ... ... ... ... ... ... | 2·7 |
| Umbilical herniæ ... ... ... ... ... ... ... ... ... ... | 16·2 |
| Epigastric herniæ ... ... ... ... ... ... ... ... ... ... | 0·9 |
| Femoral, right and left ... ... ... ... ... ... ... ... ... | 0·15 |
| Complicated by a ventral hernia between the divaricated recti ... ... ... ... ... ... ... ... ... ... | 14 3 |
| Single herniæ ... ... ... ... ... ... ... ... ... ... ... | 66·0 |
| Multiple herniæ ... ... ... ... ... ... ... ... ... ... | 34·0 |

This table includes all the ordinarily recognised herniæ, but no account is taken of the median ventral hernia between the upper parts of the recti abdominis muscles, except that it was noticed casually that 14·3 per cent. were accompanied by this ventral hernia. But as more and more observations were made, the writer, becoming convinced of the first-rate importance of this missing factor, terminated the investigation after 700 observations had been made and commenced a new inquiry on a wider plan executed by a larger number of helpers whose observations were unaffected with the writer's particular opinions on this subject. All concerned in this second investigation were ignorant of the figures and fallacies of the first except myself, so that their observations were unbiassed.

One very remarkable fact was shown by the first investigation—namely, that multiple herniæ were far more frequent in children than they were in adults. Single herniæ were found in 66 per cent.; multiple herniæ in 34 per cent. This is suggestive either of the multiplicity of congenital sacs in one subject or of one factor, common to all, which was the cause for the herniæ present. But it was obvious that this survey was very incomplete because it had omitted to take into consideration, as almost all previous authors have, the hernial protrusions between the divaricated recti. In order to obtain in the second and larger survey results independent of my private views I asked many to help. To them I must acknowledge my grateful thanks: Dr. A. F. Stabb, obstetric physician to St. George's and Queen Charlotte's Hospitals; Mr. G. E. Waugh, one of my surgical colleagues at Great Ormond-street; Mr. H. A. T. Fairbank, another of my surgical colleagues at Great Ormond-street and attached to Charing Cross Hospital; Mr. Howell Evans of Great Ormond-street and the Children's Invalid Aid Association, and Dr. Irving Pinches, my clinical assistants; Mr. Duncan C. L. Fitzwilliams, casualty officer to Great Ormond-street; Mr. S. R. Gibbs, Mr. H. T. Gray, and Dr. R. J. H. Cox of St. Thomas's Hospital; Dr. Alice N. Vowe Johnson of the Lambeth Schools Infirmary; and particularly Mr. M. Cursham Corner, for a large and invaluable series of observations on the newly-born.

Like herniæ in other parts of the body the ventral one between the divaricated recti is not necessarily obvious unless the abdominal muscles are thrown into action, such as is done when obtaining the impulse on coughing in adults. To do this in children requires some little skill and tact, so that the observations are not often made. The most generally applicable method is to place the child on its back on a table or its mother's lap: often it will begin to cry at once when the ventral hernia will become obvious. If this is not so its abdominal muscles may be stimulated by a finger or the handle of a pen. Should this fail, as it often does, the child's head must be supported with one hand, which at first raises it and then allows it to fall sharply backwards two or three inches. Whilst this is being done the observer watches the abdomen for the momentary contraction of the muscles, a carinate projection appearing above the umbilicus if a median ventral hernia is present. In difficult cases other means may be required to demonstrate the protrusion. If care is taken I believe that this hernia will be found more frequently than is indicated by my collective investigation of 2600 cases when it was noted in 24·21 per cent. In fact, one knows that the more carefully the observations are taken the more frequently will a median ventral hernia be found. For instance, two who helped me found the median ventral hernia present in 63 per cent. and 21 per cent. respectively, showing that the results vary with the observer, possibly depending on both the care and the time spent in making them.

In his text-book on Surgery Sir Frederick Treves has stated that the sac, its coverings, and its contents are the three essential parts of a hernia. Recognising that a hernial sac does not always contain any viscera a hernia may be recognised as being formed of a peritoneal protrusion which has separated some of the structures which form the abdominal walls; the formation of the peritoneal sac may or may not be accompanied by some abdominal viscus or viscera. Naturally these protrusions occur at the weaker regions of the abdominal walls: the inguinal, femoral, and umbilical regions. When the recti muscles are divaricated the linea alba is stretched and thinned, allowing the peritoneum and perhaps the omentum and intestine to bulge forward. This bulging constitutes a true hernia having all the essential parts, and as it is found almost exclusively in children it is a peculiar character of their herniæ. Because it was neglected, as it has been by most observers, my first series of observations which extended over two years and more, was invalidated and the second series was undertaken to remedy the defect. As with all other herniæ, the median ventral hernia between the divaricated recti may be congenital or acquired. Differing from inguinal and femoral herniæ in the sac having no neck and communicating widely with the abdomen, its presence is demonstrable with its first appearance, which need not be so in cases of the others mentioned. The observations of Dr. Stabb and Mr. Cursham Corner have shown that it is a very uncommon, but not unknown, condition to find in the newly born; the former only found it once in 122 observations. Hence there is little evidence in favour of its congenital origin. How, then, can it be acquired? As any given child can only digest and absorb a certain amount of nutriment, which varies with its every mood, any residue, whether an excess of good food or the remains of an indigestible meal, will go bad and ferment in the intestines unless expelled. For details of its fermentation I must refer the reader to my lecture on Some Surgical Results of Improper Feeding, published in the *Clinical Journal*, June 27th, 1906, pp. 171–176. In this place it need only be stated that, amongst other products, gases are formed which distend the intestines, raise the intra-abdominal pressure, and, if not quickly got rid of, will dilate the abdomen, separating the component parts of its walls. To particularise the subject of this lecture, the ventral herniæ between the upper parts of the divaricated recti appear for two reasons: first, as the direct result of the increased intra-abdominal pressure; and, secondly, as the indirect result of the continuance of the raised pressure upon the growth of the tissues of the linea alba.

The incidence of this ventral hernia at the different ages of life is of great interest. I am indebted to Mr. Cursham Corner for his observations in the early stages of life. He remarked that, on the average, the umbilical cord separated on the fifth day, when there was invariably some bulging of the umbilical cicatrix which lasted until the eighth day, when the scar became firm. The size of the bulging was dependent upon the length of cord left proximal to the ligature. He made 201 observations on children between birth and one year of age and found a median ventral hernia between the divaricated recti in 18·5 per cent., being more frequent amongst older infants. At Queen Charlotte's Hospital Dr. Stabb only found one case (in an infant one day old) of bulging between divaricated recti amongst 122 infants varying from one day to 39 days old. Amongst other observers at Great Ormond-street bulging between divaricated recti was found in 34 per cent. in infants under six months of age and in 58 per cent. between that and one year. These figures may be arranged as follows:—

| | Per cent. |
|---|---|
| Queen Charlotte's Hospital (1–39 days) ... ... ... ... ... | 0·8 |
| East End Mothers' Home (1–365 days) ... ... ... ... ... | 18·5 |
| Great Ormond-street (under 6 months) ... ... ... ... ... | 34·0 |
| Great Ormond-street (6–12 months) ... ... ... ... ... | 58·0 |

TABLE II.—*Incidence of a Median Ventral Hernia between the Divaricated Recti at Different Ages.*

| | | |
|---|---|---|
| 1 | 30·0 | per cent. had ventral herniæ. |
| 2 | 62·7 | ,, ,, ,, |
| 3 | 50·0 | ,, ,, ,, |
| 4 | 47·8 | ,, ,, ,, |
| 5 | 43·5 | ,, ,, ,, |
| 6 | 40·2 | ,, ,, ,, |
| 7 | 30·9 | ,, ,, ,, |
| 8 | 28·8 | ,, ,, ,, |
| 9 | 17·7 | ,, ,, ,, |
| 10 | 20·0 | ,, ,, ,, |
| 11 | 17·3 | ,, ,, ,, |
| 12 | 11·8 | ,, ,, ,, |
| 13<br>14 | 8·7 | ,, ,, ,, |

This table shows that the frequency of the median ventral hernia increases steadily from birth to attain its maximum in the second year of life, whence it falls steadily until adult life is reached, when it is rarely seen.

Therefore, it would appear that a median ventral hernia between the divaricated recti is an acquired character which becomes spontaneously cured as growth takes place. Its significance in connexion with the formation of inguinal hernia is enormous. If one sees a house on fire and finds one storey alight it is natural to conclude that some incident has occurred which originated the fire. But if one finds two, three, or more storeys alight one concludes that they arose from one common cause and not that there were two, three or more simultaneous fires kindled. Hence, if we find multiple herniæ as in the first table, at least we may suspect that they have a common causation, though there is no proof that they are not all of congenital origin. But when in addition they are combined with a median ventral hernia between the divaricated recti, as in Table III. an acquired character known to be due to the raised intra-abdominal pressure, the probability is greater that they have a common and a similar origin. Thus this form of ventral hernia becomes an indication of extreme etiological importance. In the third table is represented the percentage in which the presence of this ventral hernia was found at the different ages.

TABLE III.—*Second Series of 2600 Observations.*

| | Per cent. |
|---|---|
| Herniæ present in all cases ... ... ... ... ... ... ... ... | 32·7 |
| Right inguinal hernia ... ... ... ... ... ... ... ... ... | 4·2 |
| Right inguinal hernia and median ventral hernia between the divaricated recti ... ... ... ... ... ... ... ... ... | 4·7 |
| Right inguinal and umbilical herniæ ... ... ... ... ... | 0·8 |
| Right inguinal and umbilical herniæ and median ventral hernia through the divaricated recti ... ... ... ... ... | 2·3 |
| Left inguinal herniæ ... ... ... ... ... ... ... ... ... | 1·3 |
| Left inguinal herniæ and median ventral hernia through the divaricated recti ... ... ... ... ... ... ... ... ... | 2·1 |
| Left inguinal and umbilical herniæ ... ... ... ... ... ... | 0·4 |
| Left inguinal and umbilical herniæ and median ventral through the divaricated recti ... ... ... ... ... ... ... | 0·5 |
| Umbilical herniæ ... ... ... ... ... ... ... ... ... ... | 4·2 |
| Umbilical herniæ and median ventral hernia through the divaricated recti ... ... ... ... ... ... ... ... ... ... | 13·3 |
| Median ventral hernia between the divaricated recti... ... | 61·3 |
| Right and left inguinal herniæ ... ... ... ... ... ... ... | 1·0 |
| Right and left inguinal herniæ and median ventral hernia through the divaricated recti ... ... ... ... ... ... ... | 1·4 |
| Right and left inguinal and umbilical herniæ ... ... ... | 0·1 |
| Right and left inguinal and umbilical herniæ and median ventral hernia through the divaricated recti ... ... ... | 1·5 |
| Epigastric herniæ ... ... ... ... ... ... ... ... ... ... | 0·9 |

The median ventral hernia was found by itself in 61·3 per cent. of the cases of hernia; and when in combination also, in 87·1 per cent., a very strong indication of the probable origin of a very large number of the concomitant inguinal hernia; and, as the congenital causation of them in certain cases is not disputed, of the composite, not simple, causation of herniæ. This is strikingly brought out by the following figures, which represent the percentage proportions amongst the various herniæ found. In Table V. the herniæ, accompanied by the median ventral hernia between the divaricated recti, are just twice as large as when unaccompanied, a fact which would suggest that pressure herniæ (i.e., acquired) are twice as common as herniæ of congenital origin.

TABLE IV.—*From Second Series.*

| | Per cent. |
|---|---|
| Of all the 2600 cases herniæ were found in ... ... ... ... | 32·7 |
| Median ventral hernia through the divaricated recti (with and without other herniæ) ... ... ... ... ... ... | 24·21 |
| Herniæ other than those between the divaricated recti ... | 15·4 |
| Herniæ unaccompanied by one between the divaricated recti ... ... ... ... ... ... ... ... ... ... ... ... ... | 4·62 |

TABLE V.—*Of the Herniæ Themselves.*

| | Per cent. |
|---|---|
| Herniæ accompanied by a median ventral hernia through the divaricated recti ... ... ... ... ... ... ... ... ... | 25·8 |
| Herniæ unaccompanied by a median ventral hernia through the divaricated recti ... ... ... ... ... .. ... | 12·9 |
| A median ventral hernia through divarication of the recti; present alone ... ... ... ... ... ... ... ... ... | 61·3 |
| A median ventral hernia through divarication of the recti; alone and with other herniæ ... ... ... ... ... | 87·1 |

Every variety of hernia is more common when associated with another between the divaricated recti than when alone or associated with another variety of hernia. There are two main theories of hernia formation: one, ably and vigorously advocated by many surgeons, amongst whom may be mentioned Mr. H. J. Stiles of Edinburgh, Mr. E. W. Scott Carmichael of Edinburgh, Mr. R. W. Murray of Liverpool, Mr. H. S. Clogg of London, and especially by Mr. R. Hamilton Russell of Melbourne who has named it the *saccular* theory, states that herniæ appear on account of the sac being formed during development; the second, I believe first suggested by Mr. W. Arbuthnot Lane in 1897 and amplified by me in 1904, in which it is argued that the majority of herniæ in children arise from the increased intra-abdominal pressure which results from the gas production of intestinal fermentation. On the latter theory the herniæ can be produced in either of two ways or a combination of both: first, the intra-abdominal pressure may protrude the hernia by direct pressure; secondly, and more commonly, the pressure acts indirectly by modifying the growth of the tissues, particularly in the weaker regions, facilitating the development of a hernia by direct pressure. By the indirect action on its growth the raised intra-abdominal pressure destroys the protective valvular action of the inguinal region, after which a hernia is formed. In very young children the valvular action may be rendered incompetent by the mere stretching of the soft growing tissues. Thus, the younger the child the shorter the time required for the development of a hernia. But the mere presence of a hernia in a child shortly after birth does not necessarily indicate its congenital origin; for instance, it is known, even with the tougher tissues of adults, that a hernia may appear in a few hours or days.

To recapitulate, a median ventral hernia between the upper parts of the divaricated recti is manifold the most common and characteristic hernia of childhood. It has never received its full due owing to the fact that surgeons have made more observations in the operating theatre than in the out-patient room and have, with few exceptions, never combined these two sets of observations. This median ventral hernia is almost invariably an acquired character and is directly related to the pressure of gases produced by intestinal fermentation. Any hernia or set of herniæ in any situation are more frequent when accompanied by it than when alone (Tables III. and V.). Hence clinical experience shows that raised intra-abdominal pressure is directly related to the frequency of inguinal herniæ and, it is suggested, probably also to their initiation. It has been further suggested that the true proportion of acquired to congenital herniæ is about 2 to 1 (Table V.).

In the face of the fact that it is nearly impossible to recognise and distinguish the funicular variety of the congenital hernia sac from the acquired sac at an operation and even perhaps at a necropsy, there can be no certain knowledge of the formation of herniæ in children. Therefore I would suggest that by means of the recognition of the presence and significance of the median ventral hernia, its frequency and associations, it is possible to introduce a strong probability into the question, which would seem to indicate that acquired herniæ are more common in children than those due to the presence of a congenital sac. This is not a mere academic question, as the treatment to be adopted must depend largely upon its appreciation.

Harley-street, W.

# ON THE TREATMENT OF LUPUS.

BY DR. MED. DREUW, M.D. BERLIN.

(*Translated from the German by* R. CRANSTON LOW, M.B. EDIN., F.R.C.P. EDIN.)

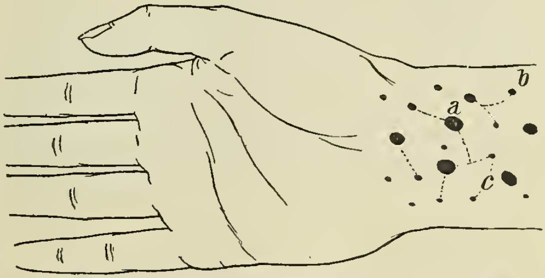
THE methods of treatment in lupus which are in general use at present are the following: (1) physical (Finsen light, Roentgen rays, and radium); (2) chemical (caustics); (3) mechanical (surgical methods); and (4) internally acting substances (cantharidin, tuberculin). There is no single method which can definitely cure every case of lupus so that no recurrence will take place. Therefore, as was specially drawn attention to at the International Dermatological Congress in 1904,[1] the one-sided method of applying the same treatment in all cases of lupus, and in all stages of a given case of lupus, is not to be recommended. But according to the prominent symptom, the surgeon should choose out of the different methods the one which is specially indicated and suited for the object in view. The treatment of lupus by physical means such as the Finsen light or the x rays requires so much time and such costly apparatus that these necessarily are only within the reach of a few specialists. For the majority of practitioners these methods are impossible unless they are associated with some public or private institution. A great number of specialists and almost all practitioners are therefore to-day still dependent on methods which are simpler and cheaper in their application. Every method for the treatment of lupus which can be used by the practitioner himself and which is handy and easy of application is to be heartily welcomed. The practitioner should be in a position to attack on its first onset a disease such as lupus, which causes so much disfigurement.

I introduced over two years ago a method for the treatment of lupus[2] which places the general practitioner in a position to treat it cheaply, easily, and with success. The method is as follows. The lupus patch which is to be treated is frozen by means of ethyl chloride (or by carbonic acid gas[3] if a deeper effect is desired) till it is snow-white. Over this frozen surface crude hydrochloric acid is rubbed thoroughly and with a certain degree of force. According to Unna it is advantageous to saturate this crude hydrochloric acid with chlorine. The acid is applied in the following way. Cotton-wool is wound round one end of a small wooden stick of about the size of a penholder; this is dipped in the crude hydrochloric acid and rubbed on the frozen surface, pressing slightly, till the nodules become of a greyish-white colour (reaction). This greyish-white colour occurs first where nodules are and then in the skin surrounding the nodules. In this way a large surface can be treated at once by a succession of applications of the caustic. If the patch is very large it is best to administer choloroform. The spots are then similarly thoroughly frozen by preference with carbonic acid gas and then by the above-mentioned means the crude hydrochloric acid is energetically rubbed in. This freezing and cauterisation under general anæsthesia is especially suitable (1) in lupus multiplex and lupus exulcerans; (2) in lupus of the mucous membranes, the nasal cavities, the lips, and tuberculous abscesses and fistulæ (cauterise from six to eight times in rapid succession); and (3) where the freezing is not well borne by the patient (e.g., nervous and sensitive patients) or where very energetic cauterisation is necessary—e.g., in tuberculous ulcers, lupus hypertrophicus and verrucosus.

In treating the nasal cavities during the anæsthesia all the tuberculous tissue is scraped away with a sharp spoon and the bleeding is stopped with adrenalin. The posterior nares should be previously plugged. Then the nose is thoroughly cauterised eight or ten times with the wooden sticks dipped in hydrochloric acid. So many applications are necessary because the hydrochloric acid becomes diluted and neutralised by the blood. The crusts which are formed in the nose are removed every two or three days by softening them with oil and douching the nose. The after-treatment of all cauterised lupus areas consists in the application immediately after the cauterisation of a disinfectant and astringent powder which is dusted on with a piece of cotton-wool. I have found eugoform, which is a condensation product of guaiacol and formalin, the best. A bandage is usually unnecessary. Instead of the powder after a few days zinc gelatine or zinc sulphur paste may be applied. One or two days after the surface cauterisation a brown scab forms, which falls off in from two to four weeks. Together with the scab the most superficially lying nodules are cast off, while the deeper ones still remain as such and after four weeks can be recognised by the diascope[4] as brown points. In cases where several nodules are present close to one another from one to four applications of this surface cauterisation are made every four or six weeks. In the course of from three to six weeks a fairly extensive lupus is replaced by a tissue (lupus-fibroma) which is covered with epithelium and in which no nodules or only a few isolated ones remain. When isolated nodules are present they are removed by puncture cauterisation. For this purpose I recommended the use of obliquely pointed glass tubes. The nodule in question is first marked by a spot of ink and then frozen with ethyl chloride. A small-pointed wooden stick is then bored into the nodule and by means of the glass tube two or three drops of crude hydrochloric acid are introduced one after another deeply into the skin opening. For this method the nodules must be at least from 1 to 1·5 centimetres from one another, otherwise the cauterised areas become confluent.

To recapitulate, my lupus treatment consists in thorough surface cauterisation from two to four times every four or six weeks of the previously frozen areas (under general anæsthesia if necessary). This cauterisation is repeated as often as necessary till only a few nodules are present (lupus fibroma). The remaining nodules are cured by puncture cauterisation. If necessary recurrences from remaining foci are treated in the same cheap and convenient way immediately they appear, so that eventually the seat of the disease heals up as completely as is possible in a pathologico-anatomical sense. The following diagrammatic drawing (Fig. 1) may be instructive for the practitioner. It represents a case of non-ulcerated lupus of the forearm which has already been treated and which shows by the diascope perceptible nodules; five of these nodules (darkly marked in the drawing) lie deep in the cutis (cf. illustration), while the remaining ones are close under the epidermis. Every effective chemical and physical treatment destroys the superficial nodules and the superficial connecting bridges first. Only in the later treatment can the deeper tuberculous tissue be affected. In the course of treatment more and more of the tuberculous deposits disappear to be replaced by new connective tissue. Finally, only isolated lupus nodules, which are recognisable by their brown colour under the diascope, are to be seen. These are then treated in any suitable way till they are no longer visible and in their

FIG. 1.



The larger dots (*a*) represent deep-seated nodules in the cutis. The smaller dots are mere superficial nodules (*b*) which lie just under the epidermis. The dotted lines (*c*) represent connecting bands of tuberculous tissue (cf. Fig. 2).

---

[1] See Transactions of the Fifth International Dermatological Congress in Berlin, 1904 Published by August Hirschwald.

[2] Monatshefte für Pract. Dermatologie, vol. xxxvii., p. 193. Transactions of the Fifth International Dermatological Congress, vol. ii. Berliner Klinische Wochenschrift, 1904, No. 17.

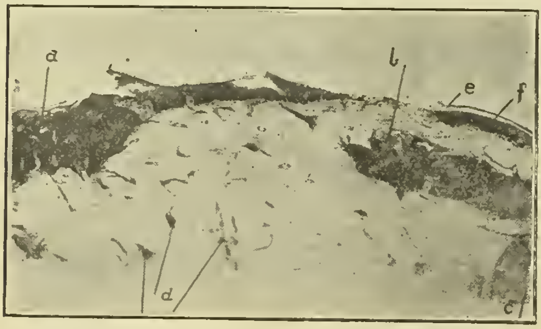
[3] Berliner Klinische Wochenschrift, No. 10, p. 260. "Freezing Treatment of Skin Diseases," by Dr. Max Juliusberg, from the Royal Dermatological University Klinik in Breslau (Director Geh. Med. Rat Professor Neisser).

[4] Diascopy depends on the following facts. If pressure is made with a glass spatula, a glass pleximeter, or a microscope slide on the normal skin it becomes quite pale because the blood is pressed out of the capillaries. In lupus, instead of fibrous and elastic tissue and capillaries, there are collections of cells (lupus nodules) which lie closely packed together and fairly sharply limited in the cutis. These cells appear through the glass as brown areas, whilst the surrounding bloodless areas are light in colour. It is best to use a glass pleximeter and to apply some fatty material to the skin beforehand.

place pure connective tissue is left, as Juliusberg[5] and I[6] have found 12 weeks after the treatment with hydrochloric acid that microscopical examination shows the lupus tissue replaced by scar tissue with no remains of lupus foci (cf. Fig. 3). If after a few or many sittings all nodules have so far disappeared that none are to be seen either with the naked eye or with the diascope, or after injections of tuberculin, or in an excised piece of the tissue, then it is allowable to say that recovery is probable. (Instead of giving tuberculin injections Unna's method of rubbing in tuberculin soap may be followed.) In place of the nodules which had destroyed the connective tissue, elastic tissue, and vessels, new connective tissue appears with the formation of new epidermis, under which there is an absence of papillæ and elastic tissue (see Fig. 3).

At different sittings the operator may either always use the same method (e.g., always Finsen light, hot-air treatment, &c., or always freezing and hydrochloric acid), or a combination of methods, which I consider the best—namely, commencing with ethyl chloride and hydrochloric acid and then using the Finsen light after the surface has healed. This combination I consider very effective. For after-treatment with hydrochloric acid the nodules which remain become fairly accessible to photo-therapy. Of course, the hydrochloric acid treatment must not be so energetic as to produce a keloid. One of the properties ascribed to the effect of light is that it has a selective action in lupus and that it produces deep effects either by an imbibition of serum, an emigration of leucocytes, a direct destruction of tuberculous tissue, or, as is very improbable from bacteriological experiments, a direct destruction of the tubercle bacilli themselves. The treatment by freezing and hydrochloric acid, as recommended by me, has the property both of a selective and a deep action. If an area of skin affected with lupus is frozen and then energetically rubbed with hydrochloric acid the stratum corneum, where the superficial nodules are, is the first portion acted on (Fig. 2, *a* and *b*).

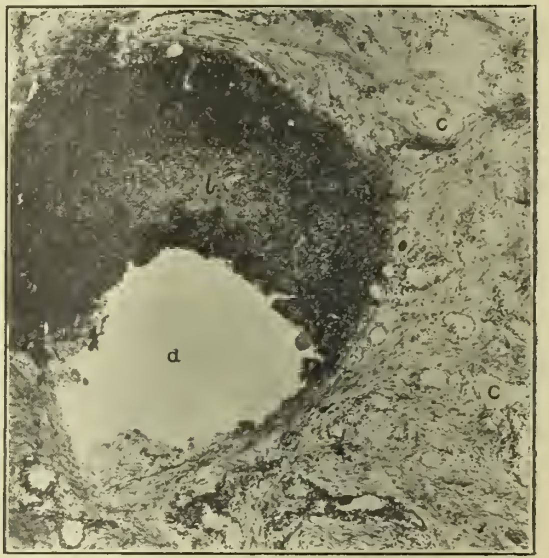
FIG. 2.



Microphotograph. *a* and *b* are two superficial nodules lying just under the epidermis. The epidermis was cauterised especially over these nodules. The piece of skin was excised immediately after a short application of the caustic. Nodule *a* is very dark, nodule *b* dark at places. If the acid had been more thoroughly rubbed in *b* would have been completely dark too. The deep-seated nodule (*c*) is still quite lightly stained, as the acid has not reached it. (*d*) Blood-vessels. (*e*) Epidermis.

During the application of the caustic it will be recognised that the spots under which nodules are suddenly become visible as dark brown points. On these spots the stratum corneum is always the first to be cauterised (Fig. 2, *a* and *b*). Therefore during the cauterisation more nodules are sometimes seen when the superficial loose epidermic scales have been rubbed away than were originally expected. The healthy skin in the neighbourhood of the nodules remains at first intact and only later becomes cauterised or by stronger treatment destroyed. Apart from this elective effect the hydrochloric acid also exercises a certain deep effect, as may be shown by a staining experiment. If a patch of lupus is rubbed with hydrochloric acid the natural result is that wherever there is a gap in the epidermis (Fig. 2, *a* and *b*) the acid penetrates into the cutis. Now, as already mentioned, this gap in the epidermis first occurs where the tissue is less resistant, therefore where lupus tissue lies, and therefore this area becomes penetrated by the acid to a certain depth and destroyed. The depth to which the acid has penetrated may be accurately ascertained by stains treating an excised portion with a strong basic stain such as polychrome methylene-blue solution. It is clear that in the acid-impregnated cells a marked microchemical reaction occurs between the acid tissue and the basic stain. Microscopically, this is shown by the dark blue colouration of the cells into which the acid has penetrated. In Fig. 2 the nodule *a* is completely penetrated by hydrochloric acid, nodule *b* only in its upper part, and nodule *c* is not penetrated at all. The cells stained dark blue, which have been penetrated by the hydrochloric acid, are in a fair way to disappear and will be later replaced by connective tissue, while the cells stained light blue still require treatment. With regard to the histological changes produced after the application of hydrochloric acid, the nodules and surrounding tissues become saturated with serum and the vessels become enormously dilated. (Fig. 3.) In the piece of skin excised three nodules, of about the same size as in Fig. 2, were rendered visible by the diascope before treatment. These were frozen and thoroughly cauterised. Four weeks afterwards the scab fell off and new epidermis took its place. In a piece of skin excised 12 weeks after the cauterisation there were no histological remains of the nodules which were present before. The limit of the cauterisation may be recognised (1) by the absence of papillæ between *a* and *b*; and (2) by the absence of elastic fibres between *a* and *b*; while in the uncauterised surroundings they are still present.

FIG. 3.



Puncture-cauterisation. Point of puncture is *a*. The nodule *b* is dark—i.e., saturated with the hydrochloric acid. The vessels *c* are greatly dilated. The connective tissue is infiltrated with serum.

The above histological details, notes, and illustrations show that good results can be obtained in lupus by simple and inexpensive means. This is not only the case in recent cases of lupus but also in such as have existed for many years. With regard to the lasting effect of the treatment no exact opinion can as yet be formed, although I have had four cases under observation for two years without any recurrence. But even if there were an occasional recurrence it could be thoroughly and inexpensively treated in the incipient stage. Juliusberg, Rohden, and others have also reported the same good results as I have described. Juliusberg has employed the treatment by freezing and hydrochloric acid in Neisser's clinic and for the freezing has used carbonic acid gas. I only approve of this method when many cases have to be treated, because then the cost is reduced. Carbonic acid produces an effect extending to a considerable depth and with a general anæsthetic it can be used over large areas. After discussing the effect of freezing on the normal skin and tuberculous tissue without subsequent cauterisation Juliusberg writes:—

---

[5] Juliusberg: Treatment of Skin Diseases by Freezing, Berliner Klinische Wochenschrift, No. 10, p. 262.

[6] Dreuw: Treatment of Lupus by Hydrochloric Acid, Transactions of the Fifth International Dermatological Congress.

> From another point of view I made further experiments, as Dreuw had already reported, with the combination of freezing with ethyl chloride and then application of crude hydrochloric acid The treatment was the same as that recommended by Dreuw with this exception, that ethyl chloride was replaced by carbonic acid gas. It was thereby possible without general anæsthesia thoroughly to freeze small foci in a few seconds and during the anæsthesia energetically to cauterise them. I usually repeated the whole process two or three times at one sitting. Four or five sittings in two months seemed to me sufficient to cure a fairly deep-seated process. In most cases the pain following the treatment was slight but in a few cases it was very considerable. For after-treatment I used poultices, powders, or pastes. The results appear, so far as can be judged from the relatively short time of observation, to be very favourable. My experience extends over cases of lupus vulgaris, tuberculosis cutis verrucosa, lupus erythematosus, ulcus cruris, primary syphilis, psoriasis, and sycosis vulgaris. The hard sores, which were all ulcerated, healed over in a few days after one application of the treatment by freezing and hydrochloric acid. A specific treatment for all cases has not yet been introduced. I had less success in two cases of psoriasis in which after disappearance of the reaction a fresh outbreak of the disease occurred. Ulcers of the leg, on the contrary, were very favourably influenced. An astonishingly rapid diminution in size and epithelialisation of the sores occurred. In about ten days they were completely healed. In lupus erythematosus, three cases of which I treated, the same favourable result with healing occurred as by simple freezing. The latter method appears to me preferable considering the superficial nature of that disease. The real field for Dreuw's method, if necessary with my modification with carbonic acid gas, is in tuberculous skin affections, which cannot be conveniently treated by Finsen light, Roentgen rays, or radium emanations. I had very good success in lupus vulgaris. As mentioned above, three months after the treatment by the modified method the foci showed on microscopic examination pure scar tissue. (Then follow notes of seven cases of lupus vulgaris, in all of which Juliusberg saw a very favourable influence on the disease.) Putting all my experiences together I am brought to the conclusion that the treatment by freezing has chiefly a destructive and caustic effect. This effect consists in the simple freezing method in a superficial necrosis and in the freezing and cauterisation in a deep necrosis of the tissue. Whether the marked serous transudation and leucocytosis have a good influence on the disease or not I cannot decide. At any rate, it seems to me that the chief use of the freezing method alone is in lupus erythematosus and of Dreuw's method in lupus vulgaris and carcinoma.

Rohden (Bad Lippspringe) describes the same good results in No. 21 of the *Deutsche Medicinalzeitung*, 1905. He says:—

> After many fruitless attempts and long treatment with Finsen light and x rays, in my experience of different caustics, besides the general and surgical treatment, I would recommend the ethyl chloride and hydrochloric acid method of Dreuw as surest and quickest. It gives lasting results and stands far above the Finsen light and the Roentgen rays in rapidity and simplicity. It can be carried out by any practitioner. Most cases which are represented as cured by Finsen light are not really cured, if one applies in the diagnosis the diascope or the phaneroscopic light method of Oscar Liebreich. The still unhealed lupus remains visible as yellow masses when the scar is pressed away by the glass.

As is shown by the foregoing the treatment of lupus by freezing and hydrochloric acid gives relatively good results and has the advantage of being very simple and inexpensive. It can therefore be applied by any practitioner. Even long-standing cases give in a relatively short time good cosmetic results. The method can also be applied with advantage in all other ulcerating processes in the skin, such as ulcers of the leg, venereal soft sore, primary syphilis, &c. No definite opinion, of course, can yet be formed as to the permanency of the results obtained because for that purpose years of observation are necessary.

To summarise once more the advantages of the method recommended by me, they are as follows: 1. The method is simple, cheap, rapidly effective, and gives good cosmetic results. 2. It can be carried out at home without hospital treatment, and that is especially important for patients of limited means. 3. Complicated apparatus is not necessary, therefore the method can be applied by any practitioner. 4. The method can be applied in all forms of lupus and in all situations, with the exception perhaps of the eye. Favourable results are obtained by repeated cauterisation, especially in lupus of the nasal cavity. 5. As a preliminary treatment for later Finsen treatment one gains time and gets favourable results.

Hamburg.

---

VACCINATION FEES.—The Loughborough (Leicestershire) board of guardians have fixed the following fees for public vaccinators: 4*s.* for each successful vaccination performed at the home of a person living in the same parish as the public vaccinator; 6*s.* for each case of successful vaccination performed at the home of a person living in a parish in the public vaccinator's district other than the one in which he resides.

---

# A CASE OF ACUTE LEAD ENCEPHALOPATHY FOLLOWING THE USE OF (?) DIACHYLON PILLS AS AN ABORTIFACIENT.

BY HOWARD F. WARNER, M.B., B.S. LOND.,
HOUSE PHYSICIAN AT THE LONDON HOSPITAL.

THE patient, a well-developed and previously healthy woman, aged 33 years, gave the following history. She was married and had had five children and two miscarriages; she had done nothing to procure these miscarriages and could assign no reason for them. The youngest child was 13 months old, and she had again become pregnant lately. After from six to eight weeks' amenorrhœa, however, she consulted a female friend who gave her three distinct kinds of pills with directions to take one pill of each kind every morning and night. One of the varieties, she was told, was pennyroyal and the nature of the others she does not know, but in view of subsequent events there can be no doubt that one or both of the remaining varieties contained lead in some form, probably diachylon. She took these pills as advised at the rate of six a day for four or five days only without any appreciable effect and then a sudden accident occurred to one of the children; she was very much frightened and ran for a medical man as fast as she could and almost immediately after this she had pains in the back and in the abdomen and began to lose blood copiously. She kept about, however, for a fortnight, although losing continually, and at the end of that time had to go to bed owing to the miscarriage coming on. The miscarriage was attended by a medical man and everything went well. She was kept in bed for four or five weeks owing to anæmia and pains in her back and limbs. All this time she was quite clear mentally so far as can be found out.

The patient was then admitted to the London Hospital and the condition was as follows. The heart and lungs were clear. There was very marked anæmia but no paresis anywhere. Knee-jerks were present and were normal. There was no ankle clonus or Babinski's sign. She complained of pain in the back and limbs and colicky pain in the abdomen, and there was a fine tremor of the hands. The speech was very defective and the memory was much affected. Constipation was a very marked feature, and to clear up the difficulties of the case a *black* line nearly a quarter of an inch wide was found on the gums at the base of the teeth. This line was so extraordinarily wide and black that one hesitated to make the diagnosis of lead poisoning, but in some places, and especially along the margin of the line, the more typical blue character was seen. Mental symptoms rapidly developed after admission and in some respects closely resembled those of delirium tremens. The patient had delusions that people were talking about her and construed objects about the ward, of an inanimate, nature into people and animals. For a time she employed herself busily in trying to catch imaginary fleas and such things, but was never violent. Hallucinations soon came on also and she fancied that she saw animals, chiefly dogs, moving horizontally in front of her. A red man was also supposed to be in constant attendance. She became very restless, especially at night, tried to get out of bed, and would hold long "telephone" conversations in which the sequence of her remarks was quite lucid, but, of course, only her side of the conversation was heard and one was left to conjecture with whom she thought she was conversing. This condition continued for about ten days, during which time she was being vigorously treated with the sulphates of magnesium and sodium and was having trional (20 grains) and veronal (ten grains) at night to promote sleep. Sulphonal (20 grains) was also tried but on the whole the best results were obtained from the former mixture.

Towards the end of this period the patient was quite lucid in the day-time and henceforth her mental condition improved rapidly at night as well as day. Natural sleep was obtained and the bowels at last became free. The very marked anæmia reacted well to the treatment of gradually increasing doses of Blaud's pills and iodide of potassium was now added to her mixture of sulphates to eradicate the remainder of the lead. The line upon the gums diminished very rapidly and in a fortnight had all the appearances of the typical lead line; it became much narrower and definitely blue and dotted in character, and now (28 days after admission) she is up and about with the anæmia rapidly disappearing and quite clear mentally. There is an interval of about ten days in her memory, coinciding with the time when she was at her worst, of which she remembers nothing. She tells us now that she has never previously had any mental trouble. There were no unconsciousness at any time during the illness and no incontinence.

This case is one of peculiar interest both as showing some of the rarer cerebral symptoms of plumbism and as illustrating the great importance of a routine examination of the gums in all cases, obscure or otherwise, as it was not until this blue line was detected that any suspicion of the real cause of the miscarriage, the continued illness, and the cerebral symptoms arose.

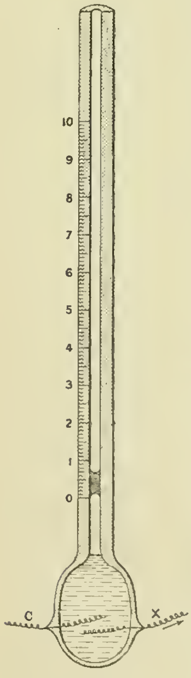
For kind permission to publish this case I am indebted to Dr. Percy Kidd, under whose care the patient was.

# A NEW METHOD FOR USING X RAYS.

By A. HOWARD PIRIE, M.D., Ch.B., B.Sc. Edin.,
PHYSICIAN IN THE ELECTRICAL DEPARTMENT AT THE PRINCE OF WALES GENERAL HOSPITAL, TOTTENHAM; LECTURER ON ELECTRO-THERAPEUTICS AT THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

When it is desired to give a standard dose of x rays the following method is used in this country. A Sabouraud's pastille is placed seven and a half centimetres from the source of the x rays and the part to receive the dose is placed seven and a half centimetres from the pastille. The exposure is then made and when the pastille has changed colour to a standard tint the patient has received a standard dose of x rays. The patient is thus placed 15 centimetres from the source of the x rays. It has been shown that the intensity of x rays varies inversely as the square of the distance. So that if we could place the patient at seven and a half centimetres instead of at 15, the time required for a standard dose would, at seven and a half centimetres, be a quarter of the time required at 15 centimetres. The following method is how I have accomplished this.

I made an instrument as follows. I took a one cubic centimetre pipette about a foot long divided into 100 divisions. I melted one end of the pipette and blew a bulb on it of about the size of a pigeon's egg. Two platinum wires were let through the glass of the bulb and sealed into the glass, so that their free ends projected into the interior of the bulb without touching each other. The bulb was then filled with tap water (see illustration). A drop of water is placed in the lumen of the tube opposite the divisions. This drop adheres to the walls by capillary attraction. I shall call this the indicator drop. The instrument is now ready for use. It is placed in series with the x ray tube and the current which flows through the x ray tube flows through the water in the bulb between the platinum wires. This flow of current decomposes the water in the bulb and bubbles of gas are seen to rise from the platinum wire. These bubbles collect in the lumen of the tube and so force the indicator drop to rise. When a child's scalp is placed at 15 centimetres from the source of the x rays while this instrument is in series with the x ray tube, and the indicator drop has risen 11½ divisions, then the scalp has received a standard dose of x rays and epilation will follow. If at the same time a Sabouraud's pastille was used as a control it will be found to have reached the standard tint.



c to coil; x to x ray tube. The drawing is in ½-metre scale.

Now comes the chief use of this instrument. Suppose the above exposure took 12 minutes at 15 centimetres, then at seven and a half centimetres it would have required only three minutes. It is not possible to use Sabouraud's pastilles for epilating at seven and a half centimetres as they are not sufficiently sensitive. By means of my instrument this is possible, and I have found that by placing the scalp at seven and a half centimetres from the source of the x rays and collecting three divisions of gas in the instrument epilation follows.

*Results.*—I have worked with four different installations and have got the same results with all. I usually require from two to three minutes to produce epilation on a patch of ringworm in a child. For this purpose I place the scalp in contact with the x ray tube (having grounded the positive wire for safety). The head is thus seven centimetres from the bull's-eye of the target—i.e., the point on the anticathode from which the x rays originate.

I have worked at various distances of from seven to 15 centimetres between bull's-eye and scalp for producing epilation and have worked out the following

*Table of Equivalents.*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Distance in centimetres between the bull's-eye of the target and the scalp for epilation ... ... ... ... ... | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Number of divisions the indicator drop must rise in order to produce epilation ... ... | 2½ | 3¼ | 4¼ | 5¾ | 6¼ | 7¼ | 8½ | 10 | 11½ |

I have produced epilation in three minutes and in 20 minutes, trusting simply to this meter. When treating the whole scalp for ringworm it does not offer any advantage over Sabouraud's method, but for other purposes, such as a single patch of ringworm, it requires only a quarter of the time that Sabouraud's method does. This meter might be called a quantimeter, as it measures the total quantity of electricity passing through an x ray tube. This quantity is continually varying, as a glance at a milliampèremeter will show. For this reason a milliampèremeter cannot be used for estimating the quantity of x rays given out. My quantimeter does not measure the quantity of electricity passing at any given moment, but measures the total quantity that has passed in a given time, and this is a measure of the quantity of x rays given out in that time.

I have described the instrument in its simplest form. There are some simple improvements added to it for practical use. For instance, when the indicator drop has reached the top of the tube it automatically returns to a prearranged spot in the tube and is ready to start again on its upward journey. It can also be arranged that when the drop has mounted ten (or any number of) divisions it makes a contact which automatically cuts off the current and the exposure comes to an end. Messrs. Watson and Sons of Holborn, London, have made a quantimeter for me.

I shall sum up the advantages and disadvantages of the quantimeter. Its *disadvantages* are as follows:—

1. *Heat.*—If the bulb containing the water is fairly large and the platinum wires are kept near each other the rise of temperature is negligible. In this connexion I have calculated out the following: 4·8 divisions of the quantimeter at 50° F. becomes 4 9 divisions at 60° and become five divisions at 70°.

2. *Barometric pressure* has some influence, but with small quantities of gas it may be neglected.

3. *Valve tube.*—It is absolutely essential to use a valve tube or adjustable spark gap as the quantimeter will measure the reverse current through the tube unless this is suppressed. Care must be taken not to measure a current that is not producing x rays such as the current used to soften a tube.

4. All x ray tubes do not give out the same quantity of x rays for the same quantity of current supplied. But how has the current been measured? Usually by the milliampèremeter which varies continually and does not measure the total current but only the current for the moment. I have found practically that any tube having a spark gap of from two to six inches responds correctly to this quantimeter.

*Advantages.*—The x ray worker can with the aid of this meter accomplish in an hour what formerly took four hours. This is its only advantage and its main object.

It may be used as a milliampèremeter to measure the mean current that has flowed during a certain time; thus, a constant current of 0·9 milliampère flowing for five minutes will liberate 0·05 cubic centimetre of gas; therefore, if five divisions of gas have been collected in the quantimeter in five minutes the mean current for that time must have been 0·9 milliampère. This measurement is for 70° F.

An interesting deduction is made from this quantimeter by collecting the oxygen and hydrogen separately. By so doing it is possible to calculate the percentage of reverse current passing through the x ray tube. If reverse current is passing a certain amount of oxygen will collect in the hydrogen and *vice versâ*, and by exploding the mixtures and measuring the residual gas the percentage of reverse current can be calculated. By this method I found on using an x ray tube with an equivalent spark-gap of three centimetres and using no valve tube that 15 per cent. of reverse current was passing. And, on the other hand, by using an efficient valve tube I found that all the reverse current had been suppressed.

New Cavendish-street, W.

# THE PROPHYLACTIC USE OF ANTITOXIN IN EPIDEMIC DIPHTHERIA.

By EVERITT E. NORTON, M.R.C.S. ENG., D.P.H., &c.,
MEDICAL SUPERINTENDENT OF THE ISLEWORTH INFIRMARY.

EARLY in the present year diphtheria appeared in epidemic form at the Percy House (Brentford Union) Schools, which are under the management of the Poor-law guardians and are situated at Isleworth. There also, upon adjoining sites, are the infirmary and workhouse. The schools are residential, consist of various buildings, and accommodate about 300 children. Communication between the children of both sexes and different ages is in the class-rooms, at meal-times and otherwise, free; the older children walk out in small parties under certain restrictions; and the majority of the children are periodically visited by relatives or friends. Admissions and discharges are frequent, all children admitted or readmitted spending (in batches) a probationary period in isolation before mixing with others or attending classes. The schools are often full: thus in November, 1906, they contained 277 children and by the end of December the number had reached 309. Sick children are treated in the separate infirmary.

Before Christmas the fact had been noted that cases of septic sore-throat and follicular tonsillitis were occurring with a frequency somewhat unusual. During Christmas-time and the few days following the weather was inclement, and necessarily the children were much herded together in crowded, and consequently dusty, day-rooms, the hours spent under these conditions being prolonged by the fact that educational work, which is carried on in a separate building, was suspended. On Sunday, Jan. 6th, 1907, two children who, having sore-throat, had been transferred to the infirmary for observation and treatment were found to be suffering from diphtheria. A rigorous examination of all the school-children revealed suspicious conditions in the throats of a considerable number, and by the end of a week (Jan. 12th) 20 cases of diphtheria had been notified. It was found from the first to be necessary that the throat of every child in the schools should be daily inspected. All children found to be, or suspected of being, infected were isolated. Antitoxin treatment was at once commenced and free use was made of bacteriological examination of swabbings as an aid in diagnosis. The usual means of disinfection, &c., were stringently adopted with a view to limiting the risk of infection. Arrangements were completed whereby the majority of the children affected were transferred from the infirmary to the local (Mogden) isolation hospital and to the isolation hospitals at Acton and Ealing. These methods were steadily persevered in, but nevertheless cases continued to arise, the numbers notified during the weeks ended Jan. 19th, Jan. 26th, Feb. 2nd, and Feb. 9th being respectively 17, 7, 7, and 13, these, with two cases on Feb. 10th, making a total to that date of 66. The persistence of the outbreak and the fact that it affected all classes of children throughout the school proved only too clearly that a widespread infection existed. The board of guardians kindly gave me the opportunity of consultation (on Sunday, Feb. 10th) with Dr. R. Tanner Hewlett, and with his concurrence the use of antitoxin as a prophylactic measure was decided upon. The number of children in the schools was at this time 251. Swabbings from the throats of all were taken and were examined by Mr. E. C. Bousfield, of the Camberwell Research Laboratories. The 16 children from whose throats the specific bacillus or even a suspicious culture had been obtained after cultivation were isolated and were put under treatment with a view to freeing the throats from infection. On either Feb. 11th or 13th antitoxic serum was administered to every child, it being inconvenient to deal with all upon one day. The dosage was so arranged that the 16 children isolated received each 1000 units and all other children, as well as several members of the adult staff, each 500 units irrespectively of age. These quantities were, I believe, somewhat larger than have usually been adopted for protective purposes. It was thought, however, that, having in view the rarity of ill-effects from the use of serum injections as now prepared and administered, the degree of protection to be afforded should not be minimised by any diffidence. The children were still daily examined and carefully watched. A further case of diphtheria arose on Feb. 21st, another on the 27th, and two on March 2nd.

A second antitoxin injection was administered throughout the school on March 6th and 8th, the doses being similar to those previously given. No further cases occurred until April 9th when there was one. On April 12th there was another. Two more appeared on May 10th. With those cases the epidemic ended. Eight cases of diphtheria (all showing definite signs and all proved bacteriologically) arose, therefore, in different parts of the schools in children who had received the antitoxin treatment, two of these occurring more than two months after the second injection.

With regard to the causation of the outbreak there can be no doubt that diphtheria infection was carried into the schools at a time when conditions were favourable for its development. The arrangements under which the admission of children takes place practically preclude the possibility of a case of active diphtheria being admitted, but no swabbings for bacteriological examination are taken from the throats of children upon admission or during the period of probation. I have remarked that the early diagnosis of cases was only attained by daily inspection of all the children's throats. At the very commencement of the epidemic it was noticed that it was exceedingly uncommon for the diphtheritic children to make any complaint whatever or to show any symptoms of illness, so that in the great majority of the cases the presence of disease was first detected in the course of the daily examinations. Constitutional symptoms during the period of "invasion" were almost invariably absent and appeared only if, and when, absorption from the throat lesion had commenced.

The results of the daily inspection were very interesting. Getting, as one did, to "know by sight" many abnormal throats, surprising degrees of variation from week to week in their characteristics were not infrequently found. The presence of enlargement of the tonsils, of tonsils with deep crypts, of chronic pharyngitis, or of adenoid growths, did not appear to increase the susceptibility to diphtheritic infection. Some of such conditions, however, and especially the deep tonsillar crypts, seemed to favour the obstinate harbouring of the Klebs-Löffler and Hoffmann's bacilli and of other organisms. As a means of selecting children as especially liable to, or as being in the "incubation period" of, diphtheria naked-eye inspection proved utterly futile. I myself upon one occasion selected some 20 children as having absolutely healthy throats so far as could be observed; within 24 hours two of these had developed patches of membranous deposit upon the tonsils.

The method of daily inspection for the purpose of selecting cases for further examination was necessarily rapid. The children were easily taught to come up in turn each bringing a spoon, the handle of which was used as a tongue depressor. The spoons were thrown as used into pails in which they were subsequently boiled.

The ages of the 74 children who suffered from diphtheria were as follows: 5 were three years of age, 8 four years, 8 five years, 9 six years, 13 were from seven to nine years, 12 from ten to 12 years, and 19 from 13 to 15 years. The cases were usually treated in the first instance in the infirmary and seven remained there throughout. 20 were transferred to Mogden isolation hospital, 34 to Acton isolation hospital, and 13 to Ealing isolation hospital, where they were under the care of Mr. Herbert R. Power, Mr. D. J. Thomas, and Mr. Lewis D. Brown respectively, to all of whom I am indebted both for the interest which they took in our little patients and for the information with which they have kindly supplied me. The cases proved generally mild, and I attribute their favourable course partly to the fact that few young infants were included but chiefly to early diagnosis and prompt commencement of antitoxin treatment. The throat was free from membrane in many instances in 24 or 36 hours, and Mr. Thomas remarks that "most of the children were up and about at the end of the second week, an event very rare" in the cases admitted under his care.

Complications and sequelæ were uncommon; albuminuria was rare; paralytic symptoms were noted in four cases; in no case was there nasal or laryngeal implication, or was tracheotomy necessary. Two children (both girls aged nine years) died from cardiac dilatation and failure; of these, one was the first case of the series and antitoxin treatment was delayed. Several of the children subsequently developed ulcerations of the tonsils; these occurred late, during convalescence, and gave rise to some anxiety, but they were found not to be associated with the presence of bacilli, and they yielded rapidly on being carefully painted with liquor iodi. The bacillus remained persistently in many of the throats, more especially in those in which enlarged tonsils or adenoid growths were present. I have remarked that the same effect of these conditions was noticed in children who did not develop diphtheria.

Especial interest attaches to the use made of antitoxin. No other instance is known to me in which it has been sought to immunise by its use so large a number of children. The serum used was that supplied by a well-known firm in phials containing each 2000 Ehrlich-Behring units and was not highly concentrated. In most of the prophylactic doses the bulk of fluid was sufficiently small to allow of its being given by means of an ordinary hypodermic syringe; the injections were made under the prepared skin of the back below the angle of the scapula, a fresh needle from a supply kept in spirit being used in each case.

Of definite ill-effects following upon the treatment there were none. One girl showed a general urticarial eruption lasting 36 hours after the first injection, but none after the second. One boy had a spreading erythematous blush around the puncture, arising within a few hours of the second injection; this was accompanied by a slight rise of temperature and passed off in two days. The children generally regarded the treatment as a not unpleasant mild form of excitement. It was thought that a slight depression followed and that their play was for a few hours afterwards less noisy. No other effects whatever were noted. There was, of course, no evidence that the treatment had any effect in hastening the elimination of bacilli from the children's throats; much trouble, in fact, was caused by their tenacity.

It has been shown that attempts were made simultaneously to rid the school of infection by isolating all children with infected throats and to render all the children immune by the administration of antitoxin. Had it been supposed that it was feasible by one examination of a swabbing from every child's throat to differentiate the infected antitoxin might not have been used. It is well known, however, that more than one such examination is necessary before freedom from infection can fairly be assumed and multiple examinations before discharge now form part of the accepted routine in most fever hospitals. There was ample evidence that infection was rife amongst the children in Percy House Schools after Feb. 13th; eight cases of diphtheria actually arose in spite of the protection which was afforded by the treatment adopted and bacteriological proof was abundant that many infected throats were present amongst children other than those who had been isolated. There can, I consider, be no doubt that the arrest of the spread of the epidemic was due to the prophylactic action of antitoxin. Its administration upon so large a scale was not undertaken without serious consideration and it is satisfactory to be able to record that its use appears to have been amply justified by the results attained.

Isleworth.

# ON THE USE OF A NEW FLUID FOR THE HÆMATOCYTOMETER.

By ALEXANDER EDINGTON, M.D Edin., D.P.H. Edin. and Glasg, F.R.S. Edin.,

LATE DIRECTOR OF THE GOVERNMENT BACTERIOLOGICAL INSTITUTE, CAPE COLONY.

While the enumeration of the red and white blood corpuscles as an aid to diagnosis of obscure conditions has been more or less in vogue for more than a quarter of a century, its utility, not only as a diagnostic aid but as indicating alterations under treatment, has only attained the present general acceptance within recent years. But even now the practice of making blood counts is by no means universal. An explanation for this may possibly be found in a want of appreciation of the method by some, want of time in the case of others, or in the undeniable fact that some little dexterity and patience are requisite for obtaining trustworthy results. The last reason is perhaps the most salient and one must admit that the use of even so good an instrument as the Thoma Zeiss hæmatocytometer requires dexterity and precision, while accuracy is to some extent impeded by the want of a suitable diluting fluid.

Of all the fluids in use—and there are a considerable number—the best that can be said of them is that they make an approach to being isotonic with normal blood. "A solution containing just such a percentage of salt as suffices to keep the corpuscles unaltered in form and without removal of any of their hæmoglobin is 'isotonic.' For human blood a solution of common salt is isotonic with 0·9, for defibrinated ox blood with 0·6, and about the same for frogs' blood. Very slight differences of external condition will tend to alter the permeability of the blood corpuscles both for hæmoglobin and for other substances" (Schäfer's "Textbook of Physiology").

The normal specific gravity of the blood in a healthy subject is from 1058 to 1062 but in departures from the normal the specific gravity may be much lower and has been found even so low as 1033. With a lower gravity the hæmoglobin falls in an almost constant fashion, so that while with a specific gravity of 1057–60 there may be 85 per cent. to 95 per cent. of hæmoglobin, with a specific gravity of 1033–35 the hæmoglobin will have fallen to 25 per cent. to 30 per cent. When coagulation is prevented the corpuscles of drawn blood very soon sink, leaving the yellow plasma as a supernatant fluid, and it is evident that if hæmoglobin is given up by the corpuscles to the plasma it is very soon eliminated from that fluid, most probably by the kidneys. In various kinds of experimental hæmolyses I have found free hæmoglobin in the plasma antecedent to its appearance in the urine. It is probable, therefore, that changes in the amount of hæmoglobin are in great part due to abnormal permeability of the corpuscles and also to their destruction. In any case, supposing the blood to be examined to be that of an abnormal individual, we may assume that the specific gravity is almost certainly below the normal. If this be the case then the use of a fluid which is isotonic for healthy blood is most certainly improperly constituted for a blood of lower specific gravity. It seemed to me, therefore, of some importance to determine whether one could not prepare a fluid which, without having great regard to the isotonic quality, would be useful for any kind of blood.

Some ten years ago I first used neutral citrate of potassium as a means to maintain large quantities of pathological bloods in a fluid condition so that they could be used for inoculation, and the plan I then adopted has, since that date, found its way into most bacteriological institutions What, however, struck me as remarkable was the fact that the red blood corpuscles maintained their shapes and characters in a marvellous manner, so that even blood films could be made with blood so prepared. I have therefore prepared the following solution for use with the hæmatocytometer: neutral citrate of sodium, 7·5 grammes; formalin (40 per cent.), 2·0 cubic centimetres; dahlia (Grübler's), 0·03 grammes; chloroform 5 drops; and distilled water, 250 cubic centimetres. In preparing the solution it is better to mix the stain with the water, rubbing down the former with a few drops of the latter first, then to add the citrate and formalin. The solution should be left for a day or two without filtering so as to deposit all the less soluble portions of the dye. The solution is easily made and keeps well when kept in a dark and cool place. If, however, it has not been used for some time it is advisable to filter off a small portion for immediate use. In less than a minute after the diluted blood has been placed on the slide one will find the red corpuscles deposited on the glass so completely that nearly all are in focus, while the refractive index of the corpuscles is so well maintained that they are very easily counted.

In practice I prefer to eject one or two drops from the tube of the hæmatocytometer and thereafter to empty the remainder into a small glass tube which is closed by a well-fitting stopper. By this means the mixed blood and fluid may be sent long distances for examination. Messrs. Thomson, Skinner, and Hamilton, of 38, Sauchiehall-street, Glasgow, now supply such tubes at a nominal cost. The hæmatocytometer tube, after using this solution, is very readily cleaned, a circumstance which may commend itself to many. The rubber tube supplied with the Thoma-Zeiss hæmatocytometer is too short. I prefer using a rubber tube of twice the length. I have also found a rubber ear syringe (one in which the ball and nozzle are composed of black rubber) to be most useful for washing the glass tubes, since one can affix the compressed ball to the tube and allow it to suck up water or alcohol for cleaning, and thereafter by compressing it the fluid is entirely discharged.

Edinburgh.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### NOTE ON BREAD AS A SOURCE OF URIC ACID.

BY ROBERT SAUNDBY, M.D. EDIN., F.R.C.P. LOND.,
PROFESSOR OF MEDICINE AT THE UNIVERSITY OF BIRMINGHAM.

IN Professor Armand Gautier's "Diet and Dietetics," of which there is a not very satisfactory translation published by Messrs. Constable and Co., he draws attention to a fact which is little known in this country—that bread may be a source of uric acid by setting free an excess of phosphoric acid (0·239 gramme of phosphoric acid per 100 grammes of new bread), an acid that does not find any base which can neutralise it.

In the early part of this year a boy, aged nine years, was admitted into the General Hospital, Birmingham, under my care for acute nephritis. There was swelling of his face and legs; his urine was scanty and high coloured and contained blood, albumin, and epithelial and granular casts. His body was covered with numerous scabs and scratches and little raw red spots, and it seemed to me probable that the nephritis was caused by the absorption of some irritating substance which had been applied to his skin, although we were never able to obtain absolute proof of this.

The patient was treated at first by being put to bed in blankets and given imperial drink; his bowels were opened by scammony resin, and boric acid fomentations were applied to the sores on his legs. A week later the whole of his body was anointed daily with the following lotion: Sodium biboras, 3 drachms; oleum olivæ, 4 ounces; aq. rosarum to 8 ounces. The skin soon became perfectly healthy. The blood and casts disappeared from the urine although there was occasionally a haze of albumin, but there was a very copious deposit of uric acid which was first noticed on Feb. 12th, about a month after his admission, although he was on a diet containing only milk, bread, butter, light puddings, cocoa, and fish. The uric acid persisted in spite of large doses of citrate of lithium up to 15 grains at bedtime. The cocoa and fish were stopped on Feb. 20th; on the 22nd he was given urotropin, five grains at bedtime, and this was increased to twice and three times a day without effect. On March 3rd lithia was again tried, 15 grains first at bedtime, then twice a day, then three times a day, and on the 18th five grains of urotropin were added to each dose of the mixture, entirely without effect. From March 19th to April 8th solurol up to four tablets daily was given, also without apparent influence. On April 26th potatoes were substituted for bread, which was removed from his diet, and during the time that he took no bread no uric acid appeared. On the 30th he was allowed two ounces of toast with each meal, with the result that the uric acid reappeared occasionally so that the quantity of toast was reduced to one ounce.

As the boy was in other respects well and had been in the hospital nearly three months we were obliged to let him go and the observation was discontinued, but so far as it went it supports Professor Gautier's opinion. As the influence of bread as a possible cause of the deposit of uric acid is not generally admitted I have thought it worth while to publish this brief note to call attention to it.

Birmingham.

### NOTE ON THE SYMPTOMS AND TREATMENT OF HAY FEVER.

BY JOSEPH A. W. PEREIRA, M.D. BRUX., L.R.C.P. LOND., M.R C.S. ENG.,
MEDICAL OFFICER TO THE EXETER CITY WORKHOUSE.

HAY fever, or hay asthma, is an extremely distressing disease. It is also a very prevalent one. Unfortunately the treatment is unsatisfactory, so much so that Watson Williams, reviewing it for the *Medical Annual* of 1905 (p. 312), says: "The prevalence of this troublesome complaint demands full trial of any method which is likely to be successful." I believe this failure in treatment is to be explained on the ground that the disease is looked upon too exclusively as a disease of the nose and upper respiratory passages, whilst the affection of the conjunctiva is overlooked. Yet I believe the eye affection is at the root of the disease and precedes by several hours the irritation in the nares. Before mentioning the treatment which I have found most satisfactory I shall briefly enumerate the symptoms in the order in which they occur.

On the first bright warm June day the disease manifests itself by a feeling of itchiness at each inner canthus. On examining the eyes a slight hyperæmia of the bulbar conjunctiva is noticed. This gradually increases and causes photophobia and sneezing when the eyes are turned towards a bright light. There is no secretion from the conjunctiva, although there is a copious flow of tears. The hyperæmia assumes a distinctly conical shape, with the apex touching the cornea, the base being towards the nose. The intense irritation in the eyes forms one of the most distressing features of the disease. As the eye affection grows worse the frequency of sneezing increases until scarcely an hour of the day passes without violent paroxysms. A feeling of intense irritation in the mucous membrane of both anterior and posterior nares occurs and a watery secretion runs from the nose. The sneezing causes intense occipital headache. The disease is now at its worst. Great depression and malaise ensue. The general health is so impaired that the skin breaks out into profuse perspiration after each fit of sneezing. The disease lasts for about three weeks.

The points which I wish to emphasise are these: 1. That the disease begins as a hyperæmia of the conjunctiva and that the other symptoms are mostly reflex. 2. That the eye affection known as pterygium is merely an exaggerated condition of the same affection of the eye made permanent in hot climates "where the air is filled with fine sand or other minute particles."[1] 3. That sufferers from pterygium are invariably great sufferers from hay fever.

The eye being the chief seat of the disease one is not surprised that the profession, led by such popular works as Osler's "Principles and Practice of Medicine" or Whitla's "Dictionary of Treatment," which describe the disease as entirely an affection of the nasal mucous membrane, has gone astray on the question of treatment. The disease lies quite as much within the province of the ophthalmic surgeon. On consulting Swanzy's "Diseases of the Eye" (second edition, p. 83) I find that he recommends dark glasses for protection from the light, weak astringent collyria, &c. The fact is, the eye wants protection, not from the light, but from the dust. Intolerance of light is only secondary to the irritation caused by the dust. This protection is afforded quite as well by colourless glasses as by tinted ones and they are not so unsightly. The colourless glasses should be fitted into frames of the pince-nez variety, for the reason that they best protect the inner canthi, and also for the physiological reason that pinching the root of the nose often stops a sneeze. Protecting the eyes does not cure the disease but all the symptoms are so effectually relieved that hay fever becomes a comparatively trivial affection which scarcely interferes with the routine of life.

Exeter.

### A CASE OF THE APPENDIX IN A FEMORAL HERNIA, THE PATIENT ALSO EXHIBITING A CURIOUS CYANOTIC CONDITION.

BY F. CARMINOW DOBLE, M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEON AT THE GREAT NORTHERN CENTRAL HOSPITAL.

AN unmarried woman, aged 44 years, was admitted into the Great Northern Central Hospital on May 21st with a double hernia. An operation was performed by Mr. E. C. Stabb on May 22nd. On the right side an oblique incision was made over the lump and a tense swelling was discovered which felt like an enlarged lymphatic gland. This after a little dissection proved to be a hydrocele in the distal end of the femoral sac. The proximal end of the sac was found coming through the lower end of the crural canal. On opening the sac the appendix was found, the tip being very adherent to it. The appendix was removed, without enlarging the opening, by the cuff method, the stump being buried by Lembert sutures.

---

[1] Swanzy's Handbook of Diseases of the Eye, second edition, p. 109.

The crural canal was closed by stitching Poupart's ligament to the fascia covering the pectineus. The wound was then closed in the usual way. The left hernia proved to be of the ordinary inguinal type and a radical cure was done.

Another curious fact about this case was the woman's colour. She was of a bluish hue; this came on gradually about six years ago and she could give no cause for it. The only medicine which she had taken with any regularity had been in the form of some proprietary liver pills, of which she took two or three a week. (The blue man at Barnum and Bailey's circus derived his colour from taking silver pills.) Her blueness is increased when she is unwell and in cold weather it is especially well marked in her extremities. The heart and lungs were found to be quite normal and there was no clubbing of the finger tips or curving of the nails. A blood count was carried out. The red blood corpuscles were 4,496,000 and the leucocytes 3000 per cubic millimetre respectively; and the hæmoglobin 90 per cent. of the normal. A film was also made but nothing abnormal was found. Dr. Alexander Morison who saw the case said that, in his opinion, the condition was vaso-motor in origin and allied to Raynaud's disease. The patient left the hospital four weeks after the operation.

Mr. Stabb has kindly given me his permission to publish this case.

# Medical Societies.

## OBSTETRICAL SOCIETY OF LONDON.

*Suppuration in an Ovarian Cyst caused by the Bacillus Typhosus.—Exhibition of Specimens.*

A MEETING of this society was held on July 3rd, Dr. HERBERT R. SPENCER, the President, being in the chair.

Dr. FRANK E. TAYLOR read a short communication on Suppuration in an Ovarian Cyst caused by the Bacillus Typhosus. The patient, a IV-para, aged 37 years, was admitted into the Chelsea Hospital for Women in April, 1907. She had lived in India for the last 15 years and had enjoyed good health until April, 1906, when she had an attack of typhoid fever. During convalescence a freely movable abdominal tumour was discovered. This gradually increased in size but caused no further signs or symptoms. On opening the abdomen the tumour was found to be a cyst of the left ovary deeply congested or inflamed. There were some adhesions to the omentum only. The cyst was easily removed entire. Recovery was ideal. The tumour was a unilocular cyst of the size of a man's head and held two and a half pints of greenish-yellow pus free from odour. A pure culture of bacillus typhosus was obtained from the pus. The organism was very thoroughly investigated and gave characteristic reactions. It agglutinated the serum of an immunised rabbit in dilutions of 1 in 4000. A Widal's test with the patient's serum gave a positive reaction with 1 in 1000 in one hour. Dr. Taylor considered that infection reached the cyst by way of the blood-stream and that this case demonstrated the pyogenetic properties of the typhoid bacillus. Bacteriologically he classed post-typhoid suppuration under three headings—viz.: (1) a mixed infection, where both pyogenetic cocci and the typhoid bacilli were present; (2) a secondary infection, caused by invasion of pyogenetic cocci into an organ whose resisting power had been lessened as the result of the typhoid fever; and (3) a pure infection, caused by the bacillus typhosus alone, which undoubtedly possessed pyogenetic properties under suitable conditions.—The PRESIDENT asked Dr. Taylor whether Widal's reaction was considered positive proof of the presence of typhoid fever. He knew that physicians did not regard it as such a few years ago. He was surprised to hear that the bacillus typhosus could survive in ovarian fluid for 12 months.—Mr. ALBAN H. G. DORAN referred to his case of perforating ulcers of the ileum from obstruction after ovariotomy, published in the thirtieth volume of the "Transactions of the Pathological Society."—Dr. TAYLOR, in reply, said that the value of Widal's reaction in diagnosis greatly depended upon the technique of its performance, especially with regard to the dilution and time limit employed. The reaction was not absolutely infallible.

The following specimens were shown:—

Dr. TAYLOR: Two Uteri showing a Fundal Ligament after Hysteropexy.

Mr. J. H. TARGETT: Hæmorrhage into the Substance of a Uterine Fibroid.

Miss L. B. ALDRICH-BLAKE: (1) Skeleton of an Extra-uterine Fœtus from a Woman in whom there was no history suggestive of such a Gestation; and (2) Carcinoma of the Cervix in a Uterus, one Horn of which was Undeveloped.

Dr. LEWERS: Two Specimens of Fibroid associated with Bleeding after the Menopause.

The PRESIDENT: A Calcified Fibroid Enucleated for Bleeding 15 years after Oöphorectomy.

Dr. C. J. N. LONGRIDGE: (1) A Baby's Breast; and (2) Diaphragmatic Hernia.

Mrs. M. A. D. SCHARLIEB: A Myxomatous Fibroid weighing 23½ pounds removed by Abdominal Hysterectomy.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*Exhibition of Cases and Specimens.—The Making of a Shelf below the Unduly Mobile Kidney.—Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Anti-sera.—Bacillus in the Blood of Persons suffering from General Paralysis.*

A MEETING of this society was held on July 3rd, Dr. J. O. AFFLECK, the President, being in the chair.

The following specimens were shown:—Dr. W. FORD ROBERTSON and Dr. G. DOUGLAS MCRAE: (1) Rats showing Paresis resulting from action of bacillus paralyticans brevis; and (2) Microscopical Preparations from cases of General Paralysis, illustrating bacillary infection.

Dr. DAWSON F. D TURNER showed two patients: (1) a case of Rodent Ulcer on the Nose, which had been treated by him with the x rays for three months without effect, but which yielded readily to the radiations of ten milligrammes of radium; and (2) a case of Rodent Ulcer in the Nose of a man, aged 61 years. When first seen the ulcer measured three-quarters of an inch across and had hard raised margins. One application of zinc electrolysis, 30 milliampères for ten minutes caused the floor to heal over and a great part of the hard margin to melt away. A second application had since been made and the case had greatly improved. Photographs of the patients before and after treatment were shown.

Dr. A. LOGAN TURNER showed a patient successfully treated by x rays for Lupus of the Larynx. The rays were applied through the skin over the cartilages of the larynx; treatment was carried on during 12 months and the condition was cured. The case occurred in a girl aged 12 years.

Mr. J. W. STRUTHERS showed a boy suffering from Trigeminal Nævus with Epilepsy and Paresis of the Arm and Leg on the side opposite to the nævus. This association of nævus with epilepsy had been observed previously and in certain cases there was a nævoid condition of the dura mater on the side corresponding to the nævus and operation had improved the condition. The dura mater was sensitised by the fifth nerve. The dura mater was exposed in this case but was found to be normal.

Dr. NORMAN WALKER exhibited:—1. A woman suffering from Mixed Infection of Lupus Vulgaris and Specific Disease. The lupus commenced when she was four years of age and spread upwards from the legs. At the age of 19 years it affected the face and mouth. The patient's father died from pulmonary tuberculosis. Finsen light and x rays had been tried on the patient without benefiting her condition. She was admitted to the Royal Infirmary in February of this year. Oleate of mercury was applied to the lupus of the face and neck and at first 15 grains of iodide of potassium were given three times daily and then 30 grains. After the larger doses were commenced the condition improved most markedly. She had also had three injections of tuberculin ($\frac{1}{1000}$th milligramme); the negative and positive phases with a rise in the opsonic index were noted. 2. An Epileptic Girl with a Well-marked Rash due to Bromide of Potassium. 3. A Man suffering from Herpes Iris. 4. Acne Keloid.

Mr. H. ALEXIS THOMSON read a paper on the Making of a Shelf below the Unduly Mobile Kidney. He said that the principle of making a shelf below the unduly mobile kidney as an alternative to fixing the organ by means of stitches was introduced some years ago in America and specially advocated by Harris of Chicago. Regarding the causes of undue renal mobility, it must be confessed that, in spite of the enormous amount of observation expended on their elucidation, there was still a marked absence of agreement on the subject. In answer to the statement that pregnancy and parturition were causal factors, it might be stated that the majority of cases occurred in nulliparous women and the extreme form of moveable kidney was met with chiefly in males. Mr. Thomson did not think that tight-lacing was a great factor in inducing the condition. Various other conditions usually described as causing renal displacement were discussed, and the overwhelming predominance of abnormal mobility on the right side could not be explained on other grounds than the presence of the liver and the difference in the position and attachment of the flexure of the colon on the two sides. The anatomical relations were discussed and it was shown that the transversalis fascia was split into two layers inclosing the kidney. These were united above and on either side but did not unite below. The kidney was anchored in this space with little to interfere with its displacement downwards and inwards. The fascia inclosing the space became in cases of moveable kidney comparable to the sac of a hernia. The influence of violence in producing the condition would not stand criticism in most cases. With regard to treatment it was only in a small proportion of cases in which there were symptoms directly referable to the renal displacement that operative treatment should be considered. While Mr. Thomson had obtained satisfactory results from one or another of the methods employed for fixing the kidney or its capsule by means of sutures, he had come to regard the procedure, which consisted in forming a shelf below the organ, as one to be preferred. The incision commenced at the tip of the twelfth rib and was continued downwards and forwards in the line of the external oblique; the fibres of the three layers of abdominal muscles were separated in the usual manner, the posterior layer of perirenal fascia divided, and the kidney exposed. Having removed the perirenal fat from the lower pole of the kidney, interrupted sutures were passed so as to bring together the parietal peritoneum and anterior layer of the perirenal fascia in front and the posterior layer of the perirenal fascia and lumbar aponeurosis behind. If the peritoneum was opened outside the line of the colon, the passing of the stitches through the peritoneum was more efficiently and more safely carried out.—Mr. J. M. COTTERILL said that up to the present no method of treatment could be considered entirely satisfactory when the patient was only kept on his back for three weeks after operation. No method was effectual so far as the mere stitching went. His own practice was to get rid of the perinephric fat from the outer and upper parts of the kidney and to fix the organ up and in the back part of its sac. In order to do this he stuffed the lower part of the cavity with a large pad of gauze. The essence of success, however, lay in keeping the pelvis well elevated, and if the patient were kept in bed for six weeks no relapses occurred.—Mr. H. J. STILES asked if it would not be wise to combine the two methods of stitching the upper part of the kidney and fixing it by a shelf below. He was far from satisfied that a correct solution of the cause of moveable kidney had been arrived at.—Dr. DAVID WATERSTON and Dr. H. M. CHURCH took part in the discussion.

Dr. FORD ROBERTSON and Dr. MCRAE made a communication on the Treatment of cases of General Paralysis and Tabes Dorsalis by Vaccines and Anti-sera. They stated that the investigations which had led them to employ specific vaccines and anti-sera in the treatment of these diseases had been the subject of several papers, the most recent of which had formed the basis of a discussion at a meeting of the Medico-Psychological Association on May 16th last. They described the distinctive characters of the two types of diphtheroid bacilli that they had used in the preparation of the vaccines and anti-sera. Both micro-organisms showed a considerable degree of virulence to mice, and both had produced in rats fed with cultures a disease resembling general paralysis. They believed that these were not the only species of diphtheroid bacilli that were commonly concerned in the production of the toxæmia of general paralysis and tabes, but that, just as in the case of the pathogenic streptococci, numerous different but closely allied species were capable of exercising a similar pathogenic action. They described the methods which they had employed in vaccinating with killed cultures and the local and general effects produced in eight cases of general paralysis and one of tabes. In most of the cases there was distinct improvement in the patient's physical and mental condition, followed by relapse after several weeks. In one case of general paralysis the improvement had been very striking and had been maintained for a year, when the patient was removed from the asylum. The case of tabes had a special interest in respect of the facts that the bacillus used was one that was abundant in the patient's bladder and that on several occasions the subcutaneous injection of the killed cultures was followed in about 12 hours by a distinct attack of lightning pains. This patient had certainly improved. Dr. Ford Robertson and Dr. McRae explained that the vaccine treatment was temporarily abandoned a year ago when an anti-bacterial serum became ready for use. Their whole time had since been occupied in the preparation of this serum and in the study of its effects. The few observations which they made seemed to show that repeated vaccination with these cultures might prove a useful mode of treatment in cases of general paralysis and tabes. This opinion was supported by the results of the independent observations of O'Brien in America, who had recently reported that he had obtained considerable success with such methods in cases of general paralysis. They considered that three conditions would require to be fulfilled in the carrying out of this treatment—namely, (1) the bacillus ought to be one isolated from the patient; (2) there should be evidence that it is exercising a pathogenic action upon the patient; and (3) the injection should be carried out under the guidance of the leucocyte count or of the opsonic index. They next described their procedure in preparing anti-sera in the sheep. They had now 12 sheep immunised to various strains of virulent diphtheroid organisms isolated from cases of general paralysis and tabes. The serum was given generally in doses of 20 cubic centimetres hypodermically or by mouth. The local effects of hypodermic injections were, as a rule, trivial, but occasionally there was passing erythema and serum urticaria. The immediate general effects were chiefly drowsiness, diaphoresis, and malaise; many of the patients became confused, some were hilariously excited; the speech, gait, and coördination were for a time more impaired and tremors were increased. The temperature reaction was characteristic and, so far as their experience went, it was diagnostic. It consisted in a rise to about 100° F., or a higher level, when the serum was given hypodermically. This rise occurred within 12 hours and was over in 24 hours. Details of several cases were given. Altogether 26 cases of general paralysis and two of tabes had been treated. Out of 12 cases of general paralysis that had been under their own immediate supervision for over a period of three months ten had shown remarkable degrees of improvement. Out of five cases treated indirectly by them for a sufficiently long period to obtain therapeutic results three had improved. In one of the cases of tabes, which had been under treatment for about five months, the severity of the pains had greatly diminished, whilst the duration of the periods of remission had increased. The second case of tabes had been under treatment for only a few weeks, but already results of a similar nature were being obtained. Nine control cases had been subjected to the anti-sera, each on at least three occasions, two of them 11 and ten times respectively. In none of these did any specific reaction occur after mouth administration, and any rise of temperature subsequent to injection could readily be explained by other factors. Several cases of general paralysis had also been subjected to treatment with the serum of normal sheep and also with anti-streptococcic serum, in order to test the specific character of their anti-sera. In no case were these injections followed by any reaction similar to that which ensued upon injection of antiparalytic serum. They formulated the following five conclusions: (1) the anti-sera with which they had been working produced reactions that were diagnostic of general paralysis or tabes after three injections; (2) cases treated with these sera had in most instances shown improvement; (3) a polyvalent anti-serum was likely to be more efficacious than either the mono- or bivalent serum which they had hitherto used; (4) one of the chief obstacles in the way of obtaining a very potent serum had been the loss of virulence in the strains of the organisms used; and (5) there were grounds for believing that an antitoxic serum would be of use in these cases and this they now proposed to make and to test upon patients in conjunction with, or separately from, their anti-bacterial serum.

Microscopical preparations were exhibited showing very abundant diphtheroid bacilli in the brain of a general paralytic, granular bacilli in a nerve cell in the brain of another case from which a culture of a diphtheroid bacillus had been obtained, and several diphtheroid bacilli in a lymphocyte in the centrifuge deposit from the cerebro-spinal fluid of a general paralytic withdrawn during life.

Dr. GEORGE M. ROBERTSON read a communication on the Presence of a Bacillus (Muirhead's Diphtheroid) in the Blood of Persons suffering from General Paralysis and Observations on the Bacillus Paralyticans. The researches, of which this paper was a summary, were inspired by the Morison lectures, delivered in 1906 by Dr. Ford Robertson, pathologist to the Scottish asylums, in which he stated that "a special diphtheroid bacillus," which he named "the bacillus paralyticans, was the specific etiological factor in the production of general paralysis and tabes dorsalis." The researches were carried out under Dr. Robertson's direction with the coöperation of all the members of the medical staff of the asylum. Dr. Robertson pointed out that Dr. Ford Robertson had not given such distinctive cultural or other tests as would clearly identify the bacillus paralyticans, and indeed had left its exact identity "an open question." The objections to this position of uncertainty were stated but the difficulty of identification was overcome in this research by obtaining a culture of the organism. It was found *not* to be the Klebs-Löffler bacillus. Owing to the fact that diphtheroid organisms are frequently present in the alimentary, respiratory, and other mucous tracts of persons who are not suffering from general paralysis their existence in these regions in general paralysis, as Dr. J. W. H. Eyre and Dr. Flashman pointed out, does not necessarily have any special pathogenic significance. Dr. Ford Robertson obtained most of his diphtheroids from these regions and in order to avoid a possible source of error in this research cultures were made from the blood and cerebro-spinal fluid. It was pointed out that cultures made after death were also open to fallacy owing to the liability to terminal invasions by micro-organisms and to the rapid putrefaction of the bodies of persons dying from general paralysis. Such observations should only be secondary or confirmatory. The *modus operandi* of the method for obtaining cultures from the blood was then described and the measures adopted to obtain sterility of the skin of the patient and the instruments employed. 300 cubic centimetres of broth inoculated with 10 cubic centimetres of blood from four healthy controls proved sterile, as did the blood from 25 insane persons. Ten cubic centimetres of the blood of a general paralytic suffering from a severe congestive seizure were withdrawn. Broth was inoculated and incubated for 48 hours. On naked-eye examination it appeared unchanged and sterile, but on examining a hanging-drop specimen organisms were seen. Plating was done in the ordinary way but every attempt proved unsuccessful. As organisms were seen in hanging-drop specimens, and as organisms were stained in a centrifugalised deposit obtained from the broth, and as organisms were seen in blood-smears, owing to the non-success of plating, it was decided to inoculate mice and guinea-pigs. This was done by Dr. T. Shennan at the laboratory of the Royal College of Physicians. After four days a mouse was killed and cultures were made from the spleen and liver and a diphtheroid organism was successfully recovered from both sources. Owing to the difficulty of plating out special methods were employed and successful plate cultures were made without inoculating mice. Diphtheroids were obtained 15 times from the blood and cerebro-spinal fluid of seven general paralytics. These were tested on seven solid and 13 fluid media and proved to be the same organism, there being variability only in the case of milk litmus. This diphtheroid was not the bacillus paralyticans of Dr. Ford Robertson, and the latter organism was never isolated at any time in these researches. Dr. Ford Robertson had altered his original views and now stated that there were two forms of the bacillus paralyticans, a longus and a brevis. These belonged to different groups of diphtheroids, gave different serum reactions, required different sera in treatment, and produced two distinct varieties of general paralysis. He recently supplied the speaker with cultures of his second or brevis form. It was found that this had once been obtained post mortem in the cerebro-spinal fluid associated with a streptothrix in a general paralytic. The streptothrix was, however, obtained in pure culture from the heart blood, and in this case during life the Larbert bacillus (Muirhead's diphtheroid) had been obtained three times. This organism probably played a part in the symptomatology of general paralysis, but it was not asserted to be the cause. It was found in three other cases of doubtful general paralysis and in a fourth possible case another organism—a streptothrix—had been twice found. Finally, with regard to the part which the bacillus paralyticans played in the etiology of general paralysis the results of these researches were practically negative.—In the discussion which followed Dr. T. S. CLOUSTON alluded to the extreme degree of improvement which he had observed in the cases treated by Dr. Ford Robertson and Dr. McRae.—Dr. LEWIS C. BRUCE said that he had examined three of the cases so treated very carefully and two were undoubtedly cases of general paralysis. He had injected two true cases with 20 cubic centimetres of anti-rheumatic serum and they showed no reaction. He also injected 20 cubic centimetres of anti-bacillus coli and 20 cubic centimetres of polyvalent anti-streptococcus serum, and also without reaction. He then injected 20 cubic centimetres of serum obtained from Dr. Ford Robertson, and within 12 hours there was a reaction with a temperature of 99° F. Dr. Bruce had made numerous observations but had never been able to obtain any organisms from the blood of general paralytics.—Dr. DAVID LAWSON (Banchory) and the PRESIDENT made remarks, and the authors replied.

# Reviews and Notices of Books.

*Green's Encyclopedia and Dictionary of Medicine and Surgery.* Vol. I., Aachen to Brain; Vol. II., Bread to Ear. London and Edinburgh: William Green and Sons. 1906. Vol. I., pp. 538; Vol. II., pp. 528.

AN encyclopædia is intended to afford detailed and more or less exhaustive information on the subject or subjects of which it treats, while a dictionary is essentially an alphabetically arranged index of words with brief definitions of their significance or meaning. Adopting some such general explanations of the words encyclopædia and dictionary, the editor, in his introduction, defines an encyclopædia of medicine as "a series of volumes containing extensive information on all the subdivisions of medical and surgical theory and practice," while, in his view, a medical dictionary, in the strict sense of the words, is "a list of definitions of medical and surgical words arranged alphabetically."

In this work an attempt is made to produce at once a dictionary and an encyclopædia—i.e., the general arrangement of the work is alphabetical but the descriptions appended to the words or terms discussed fall into two groups: first, comprehensive descriptive articles or monographs by various authorities, reprinted from "The Encyclopedia Medica" (1899–1904), on medical and surgical subjects of importance; and, secondly, brief descriptions or explanations of all the ordinary words used in connexion with medicine and its attendant sciences. These descriptions are written by the editor.

Judged by the two volumes before us we may say that the attempt appears to be a successful one. The various encyclopædic articles are well written, are conveniently arranged on a general plan, and are admirably adapted for rapid reference. Each begins with a brief summary or *résumé*, then a definition or an explanation of the scope of the subject follows, with a classification and a general discussion, including, where such are necessary, diagnosis, prognosis, and treatment. In regard to the directions for treatment these are concisely stated and definite instructions are given, including details of prescriptions or of measures recommended. In a few cases these articles are illustrated and the figures, diagrams, and plates given are clear and should serve a useful purpose in elucidating the text. The coloured plates of bacteria and of blood corpuscles are also good. In connexion with subjects concerning which much new work has been done since the appearance of "The Encyclopedia Medica" notes are appended in new paragraphs marked off by brackets or by new articles specially written. The literature lists have been omitted but a few references to important original papers remain.

In regard to the lexicographic part of the work, the choice of words made appears to have been comprehensive. The definitions given are short and succinct but in most cases quite clear and sufficient; sometimes a second definition is given in explanation of the first. A useful addition to the definition of words is that, wherever possible, cross references are given to the various articles where further information is supplied in regard to the subject with which the particular word is employed. Occasionally such references take the place of definition, which, in spite of the editor's claim that they are quite sufficient to indicate the meaning of the word, is irritating and likely to cause waste of time where a definition only is required, as may be seen in the instances quoted by him—viz., Aglaukopsia is not defined—the reader is referred to Colour Vision (Green Blindness); and Agaricus has simply attached to it the cross reference Toxicology (Fungi), in both instances requiring reference to another volume. It is only fair, however, to state that such instances are rare and that in practically all cases the definitions given are sufficient. Although the words are alphabetically arranged there is an index at the end of the volume giving the words dealt with and the pages upon which they are described.

The second volume carries the subject matter of the "Encyclopedia and Dictionary of Medicine" from "Bread" to "Ear," and the features which characterise the first volume are maintained. In addition to the articles which appeared in "The Encyclopedia Medica" new contributions on such recent developments of medical diagnosis and treatment as cryoscopy, cytodiagnosis, and dechlorination have been added; and dermatitis traumatica et venenata in coal-miners is dealt with in a special contribution.

We have on previous occasions deprecated the plan of calling a disease after the observer who first described or minutely investigated it. The accumulation of such names has already become very confusing. Under the heading "Disease" in this volume will be found a list of nearly 100 maladies so distinguished with a brief definition attached to each. This will prove useful for reference and will aid in the recognition of the various morbid conditions. We may add that it is stated in the introduction that it is proposed to issue supplementary volumes as a Quinquennium of Medicine and Surgery after the completion of the present work in order to keep pace with the advance so constantly occurring.

---

*Handbuch der Geburtshülfe* (*Handbook of Obstetrics*). In three volumes. Edited by F. VON WINCKEL. Wiesbaden: J. F. Bergmann. 1906. Vol. III., Part I. (pp. 901, price M.22.60, or £1 2*s*. 9*d*.) and Part II. (pp. 1025, price M. 28, or £1 8*s*.).

THE imposing size of these two volumes, of 901 and 1025 pages respectively, gives the reader some idea of the encyclopædic character of this great work. The first part of the third volume deals with the various obstetric operations. A short historical sketch of their development is followed by a discussion of the indications for their performance and directions as to how they should be carried out, which are given very fully indeed. There is also a very extensive bibliography at the commencement of each section, and how complete these sections are may be gathered from the fact that the list of papers appended to the account of the induction of premature labour occupies some 28 pages and that on the classical Cæsarean section 45 pages. When we realise that the whole of the first part of this volume is given up to a consideration of obstetrical operations we are not surprised to find that practically everything that can be said has been included. The article on the Induction of Premature Labour, written by Dr. O. Sarwey, is a most admirable monograph. In a series of tables he brings forward some instructive statistics as to the results of this procedure. Of 2200 cases recorded during the 15 years 1890 to 1904, 32, or 1·4 per cent., of the mothers died, of whom 13, or 0·59 per cent., died from septic infection. Of 1721 children born alive 1380, or 80·2 per cent., left the hospital alive. Of 500 children born alive in 12 different institutions after the induction of premature labour, 406, or 81·2 per cent., were still living at the end of their first year of life. A third table brings out the interesting fact that with respect to 938 women with contracted pelves of 1700 deliveries at full term only 587, or 34·5 per cent., of the children were born alive, while of 1078 premature deliveries in the same mothers 775, or 71·9 per cent., of the children were born alive—a very striking difference in favour of the induction of premature labour in such cases. In the section on the various methods of dilating the cervical canal a full description is given of the different means which can be employed, including an account of Bossi's dilator. We notice, however, that the instrument figured is not the latest and best model of this dilator. Dr. Wyder, who contributes this article, is by no means impressed with the instrument and for general use prefers one or other form of the hydrostatic bag. The chapter dealing with delivery of the fœtus by the natural passages by the same authority is especially noticeable for the very excellent manner in which the application of the forceps is described, 100 pages being devoted to this important operation, its indications and dangers.

The editor, Professor von Winckel, writes the article on Braxton Hicks's method of performing bipolar podalic version. The results of 708 cases in which this operation was undertaken in the treatment of placenta prævia show a maternal mortality of 35, or 4·9 per cent., and a fœtal mortality of 185, or 60·2 per cent. One of the most important questions which the practitioner has from time to time to answer is the decision as to the performance of perforation of the head on a living child. Cases must occur occasionally in which the perforation of the living child is absolutely necessary if the life of the mother is to be preserved, but how infrequently such an operation is required, at any rate in a lying-in hospital, is shown by the experience of Professor Pinard who has not had occasion to perform this operation once in 1800 deliveries. That this was not due to any infrequency of cases of contracted pelvis is shown by the fact that in these 1800 cases symphysiotomy was performed 13 times. It is surprising to find no mention of a sharp decapitating hook in the description of this operation and that nothing is said of the operation of subcutaneous symphysiotomy, undoubtedly the best method of practising this procedure. The indications for vaginal Cæsarean section are discussed at great length by its originator, Dr. Dührssen. We need not say that the article is one of great excellence and full of detail. The arguments for and against this operation are set out at considerable length. The chapters on Porro's operation and on Cæsarean section are contributed by Dr. Schenk and Dr. Kleinhans. Dr. Strassmann has written the chapter on the treatment of accidental hæmorrhage and the volume concludes with an article on the various methods of producing anæsthesia in obstetric cases by Dr. Wyder.

The second part is taken up almost entirely by the account of puerperal fever but there are a few other contributions. The first chapter, by the editor, consists of a review of the history of midwifery in the nineteenth century. Following this Dr. von Braun-Fernwald discusses wounds and injuries of the genital organs due to childbirth, inversion of the uterus, and post-partum hæmorrhage; and Dr. Döderlein contributes the last chapter on puerperal affections of the bladder. In this part, as in the first, the bibliographies are very complete, that dealing with puerperal fever taking up some 75 pages, although it contains references only to the publications which have appeared since the year 1889. The sections dealing with puerperal fever dwarf all else in this volume. The disease is discussed in all its aspects with the most complete thoroughness, Dr. Walthard describes the general bacteriology and a special account of the gonococcus is given by Dr. Wildbolz. The main part of the description of the disease, including the pathological anatomy and the treatment, is from the pen of Dr. O. von Herff. The author (from the study of a large number of statistics) arrives at the conclusion which has been reached by practically all writers on this subject—namely, that the death-rate from puerperal fever, in spite of all the advances made in the prevention of the various forms of septic diseases in surgery, is at the present time practically stationary. He shows that the lying-in woman is safest when confined in a lying-in hospital and he further proves that the observance of strict antiseptic or aseptic precautions is a sufficient and certain preventive of the disease. We are glad to see the stress which is laid on the use of alcohol in disinfection of the hands, since the adoption of this substance for the purpose is still far from common even in well-conducted lying-in hospitals in this country, and we are convinced that it is of the utmost importance. No less important is the wearing of sterilised rubber gloves, but at the same time if such a practice is to lead to less care being taken in the proper sterilisation of the hands it can only result in disaster and disappointment. Indeed, it is a moot point which are the most dangerous—imperfectly cleansed hands or imperfectly cleansed rubber gloves. It must always be remembered that whilst the general surroundings and the atmosphere, so to speak, of a surgical theatre or of the lying-in ward of a well-conducted hospital are directly conducive to the strict carrying out of antiseptic precautions the surroundings in the majority of confinement cases in private practice are far from encouraging such observances. The treatment of cases of septic infection is very fully considered, although we must confess to some disappointment on reading this portion of the article. It is impossible to come to any other conclusion than that treatment is of little avail, and if prevention fails then the medical attendant is often only too helpless to avert a fatal issue to the case. When we consider the mortality rate of the disease the question as to whether any one of the various methods of treatment advocated really has much effect in diminishing the danger becomes a very difficult one to answer satisfactorily. The teaching laid down as to the uselessness of the administration of alcohol in these cases is directly opposed to that of most writers but is in accordance with the opinion of some medical men as to the harmfulness of alcohol to the body in any conditions, whether it be those of health or disease. Curetting, we are glad to see, is strongly condemned and Dr. von Herff concludes that hysterectomy in these cases is usually of no avail. The question as to whether any good is to be expected from the excision of the pelvic veins in puerperal pyæmia receives the full consideration which it deserves. The opinion expressed, with which we are in accord, is that this operation is as a rule not indicated on account of the difficulties experienced in deciding in what particular case it should be performed and the further difficulty there often is in determining on which side the veins are affected. The removal of the uterus is required only in cases where it contains a sloughing fibroid or where there is definite evidence of an abscess in its walls.

These two volumes are amongst the best of the whole series and are in every respect most complete and helpful. The work constitutes a series of monographs written by eminent authorities and, we imagine, will long remain without any possible rival in this sphere of medicine. It is indispensable for the teacher and should be in every large medical library.

---

*Gall-stones and Diseases of the Bile-ducts.* By J. BLAND-SUTTON, F.R.C.S. Eng., Surgeon and Lecturer on Surgery to the Middlesex Hospital. With 47 illustrations. London: James Nisbet and Co., Limited. 1907. Pp. 233. Price 3*s*. 6*d*. net.

THIS book commences with a short anatomical and physiological account of the bile-ducts and the bile and all of this chapter is interesting and most of it is important. Then come sections on infections of the bile-ducts and gall-bladder. A good account is given of gall-stones and of their results. A chapter on cancer of the gall-bladder follows, and then comes a chapter on the effects of some forms of pancreatic disease on the excretory apparatus of the liver. The signs and treatment of cholelithiasis are given at some length and a chapter on the mortality of operations for the relief of gall-stones closes the book. We have described the contents of the volume to show the reader that, though the book is small, it contains a good deal. The style is simple and the addition to each chapter of references to works dealing with the subject enables the reader to look up the matter more fully if he wishes. We are pleased with the book and though there are many controversial points dealt with, about which we are not fully in accord with the author, it should prove of value to senior students and to those in practice. This volume is the first of a new series of books called Modern Clinics. If the later volumes are as good as this the series will have justified its existence.

---

## LIBRARY TABLE.

*The Practical Medicine Series.* Under the general editorial charge of GUSTAVUS P. HEAD, M.D. Vol. VIII., Materia Medica and Therapeutics, Preventive Medicine, Climatology, Forensic Medicine. Edited by G. F. BUTLER, M.D., H. B. FAVILL, M.D., NORMAN BRIDGE, M.D., D. R. BROWER, M.D., and H. N. MOYER, M.D. Series 1906. Chicago: The Year Book Publishers. Glasgow: G. Gillies and Co. —In this work the collaborators in the department of Materia Medica and Therapeutics state that there has been a widespread demand for more simplification and precision in the armamentarium and that the use of crude galenical preparations is giving way to active principles and remedies of known and unvarying strength. They regret that the contributions on the subject of psycho-therapy, or suggestive therapeutics, have been meagre during the year. They write, "Physicians should inculcate hope in the degree of optimism; their lives should radiate love, hope, cheerfulness, and optimism." In the section on Preventive Medicine the suggestions on the protection of children from contagion are valuable, as are indeed the directions for the conduct of the tuberculous as given by Rochester. The following is a brief summary: 1. The consumptive should kiss no one and no one should kiss the consumptive on the mouth. 2. The consumptive should never lend his handkerchief to anyone or borrow a handkerchief from anyone. 3. The eating and drinking utensils of a consumptive should be thoroughly boiled after he has used them. 4. During the act of coughing he should hold before his mouth a piece of cheese cloth or gauze or other material, which may be burned or boiled. 5. The sputum should be discharged into a piece of cheese cloth or gauze, so folded that the sputum may be turned in and completely covered. Such piece of gauze should be put into a proper receptacle until it is time to take it out and to burn it. 6. The sheets, pillow cases, night-clothes, and underclothing of consumptives should be boiled for half an hour before being washed. Under the heading of Climatology the question as to whether the sanatorium treatment of pulmonary tuberculosis is worth while is answered strongly in the affirmative. Among the questions considered in the section on Forensic Medicine are: The Bases for Expert Testimony; Insane Heredity and Suicide in Relation to Testamentary Capacity; the Feeble-minded Criminal; the Legal Aspects of Epilepsy; and the Illinois Procedure in Annulment of Marriage for Prior Insanity.

*The Seaside and Inland A B C Holiday Guide for the United Kingdom.* London: The Wentworth Publishing Company. 1907 Edition. Price 6*d.* net.—This is a useful little book of reference. It contains concise accounts interspersed with photoprints of the chief British holiday resorts, inland and seaside, arranged in alphabetical order. At the end is an index of the golf courses of the United Kingdom and of the angling stations. We note that it is claimed for Hastings that it heads the list for all England as regards its record of sunshine. We may remind our readers of the lists which appeared in THE LANCET on Jan. 26th, 1907 (p. 243), and March 9th, 1907 (p. 676), and we may be excused for doing so as we are sure that many people contemplating their holidays will be glad to study the sunshine records after the gloomy weather which we have experienced lately. It may not be necessary then to take too seriously the announcements of a certain radiant heat and light treatment to which over-frequent attention is called throughout the book.

## JOURNALS AND MAGAZINES.

*The Asylum News.*—The June number of this journal contains a full account of the annual meeting of the Asylum Workers' Association under the presidency of Sir William Collins. In his interesting presidential address he briefly reviewed the ethics of asylum work and the reform which had taken place in the treatment of the insane since the days of Hogarth. Although dealing chiefly with the ethical side of asylum nursing Sir William Collins also gave some sound advice in respect of the intellectual aspect of this special work. The address was excellent both in diction and matter and was in every way eminently suited to the audience. The annual report for 1906 of the Asylum Workers' Association is also published in this number of the *Asylum News* and it shows what active work is being done by this body for the welfare of its members. The Bills before Parliament concerning the registration of nurses have been carefully watched in the interest of asylum nurses, both male and female. During the year 1906 the questions of housing accommodation for married attendants and pensions for asylum workers have been under the consideration of the executive committee and the report indicates that everything is being done to bring these matters to the notice of the Government.

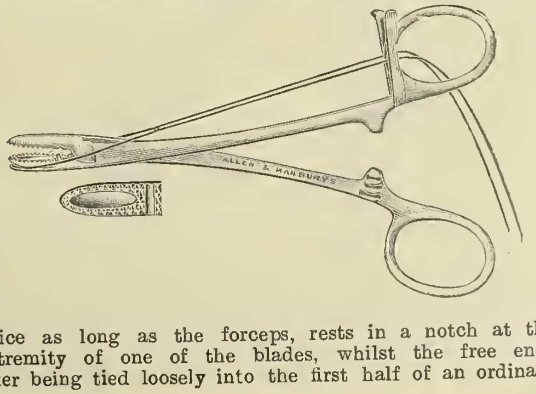
*Caledonian Medical Journal.*—The first of the original articles in the July number is entitled "The Rôle of the General Practitioner in the Advancement of Medical Science." The author is Dr. James Mackenzie of Burnley who says that there are great questions which are not likely to be solved until the general practitioner takes his share in systematic research. Examples of this kind are to be found in the observation of the progressive development of chronic ailments and in the recognition of that stage of disease when the prospect of successful treatment has passed. Dr. Keith Norman Macdonald relates many reminiscences of the medical curriculum at the University of Edinburgh in the early "fifties." Colonel Kenneth Macleod, I.M.S., contributes a sketch of the Indian medical administration through many stages of development from the year 1600 to the present day. In the editorial paragraphs it is announced that the annual meeting of the Caledonian Medical Society will be held at Bradford on July 25th.

*The American Journal of Insanity* (April).—Among the several interesting papers in this number of the *American Journal of Insanity*, the following call for special attention. Dr. Solomon C. Fuller's paper on a Study of the Neurofibrils in Dementia Paralytica, Dementia Senilis, Chronic Alcoholism, Cerebral Lues, and Microcephalic Idiocy is an instructive digest on this subject and is accompanied by 13 excellent plates. Dr. C. Lee Carlisle's article on Maniacal Conditions in Young Adults deals with the differential diagnosis between the non-deteriorative and the deteriorative psychoses. He clearly shows the clinical distinctions between the symptom complex known as manic-depressive insanity and the katatonic excitement in dementia præcox. Dr. William Macdonald contributes a paper entitled, "General Paresis or Cerebral Syphilis?" It is written to warn the student not to accept too readily the statement commonly found in text-books that "cerebral syphilis and paretic dementia are diseases which can be readily differentiated from each other." Dr. G. A. Smith supplies an excellent paper on the Application of the Cottage System to the New Hospital. Dr. Smith states that he has had 20 years' experience of the colony system as applied to the care of the insane, and he evidently strongly commends it as giving the most satisfactory results alike with regard to treatment, occupation, and proper classification of the patients. The journal also contains a most interesting letter from a French correspondent on medico-legal expert testimony. He writes that in France experts in criminal matters are named according to the following rules: At the beginning of each judicial year the Courts of Appeal name from the lists proposed by the tribunes of first instance within their jurisdiction doctors of medicine on whom they confer the title of "court experts." In order to be named a candidate must have practised medicine at least five years or hold a diploma for medico-legal studies. Expert physicians named on these conditions by the courts are, in principle, the only ones to whom an expert report can be intrusted. The expert is not allowed to receive any fee for his services if he appears in court as a witness. He is paid from the public Treasury and the payments are according to a scale which is by no means a liberal one. The French expert is never invited to take the part of either the prosecution or the defence, as his fundamental quality is to be impartial. It is evidently recognised in France that the occupation of expert is an important and difficult one and recently the Universities of Paris and Lyons have taken up the special instruction of the medico-legal physician.

# New Inventions.

### ARTERY FORCEPS AND LIGATURE COMBINED.

THIS forceps, suggested by Dr. Schoemaker of the Hague Hospital, has for its principal feature an ingenious device by which the application of a ligature to a severed artery is greatly facilitated. As shown in the accompanying illustration, the middle of the ligature, which must be more than twice as long as the forceps, rests in a notch at the extremity of one of the blades, whilst the free ends after being tied loosely into the first half of an ordinary



knot are temporarily held out of the way behind two flat springs attached to the ring handle. It will be seen from the illustration that any long object caught in the forceps is necessarily surrounded by this loop so that drawing the loop close and tying the second half of the knot secures the artery. The inner aspect of each blade has a shallow recess in the central portion and is also provided with a transverse groove which might serve for holding a needle. In other respects the forceps has a great resemblance to the ordinary English artery forceps named after the late Sir Spencer Wells. It is made in two sizes—five inches long (price 6*s.* 6*d.*) and seven inches long (price 8*s.* 6*d.*). The London agents are Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, W.

### A NEW PORTABLE OPERATION TABLE.

FIG. 1.

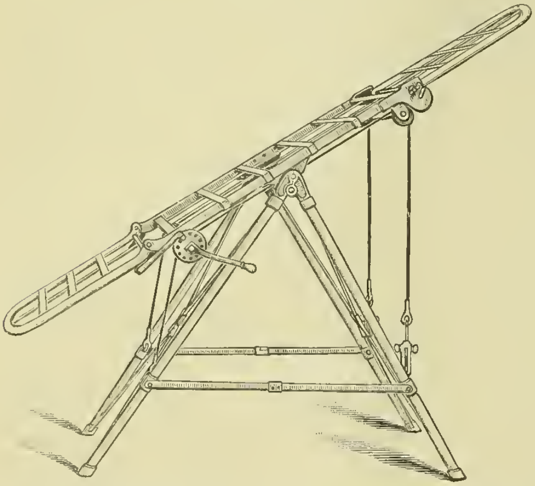


FIG. 2.

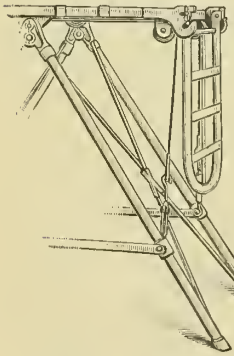
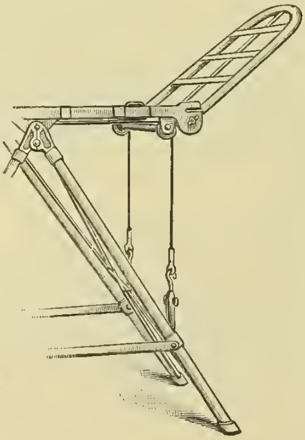


FIG. 3.



IT is not from a wish to add another portable table to the long list of those already in existence that I have devised the one here depicted. My reason for planning this table, and having it made, is that there are, in my opinion, grave defects in all those at present on the market; this one, however, has at least the essential attributes of a good operation table in a portable form and the following points may be referred to. 1. It is light, weighing about 35 pounds (i.e., about the same weight as an ordinary Jordan Lloyd's flat wooden table). 2. When folded, the size in a canvas cover is 40 by 23 by 7½ inches and it can be put up or taken down in a few seconds. 3. It is made entirely of steel. 4. It is absolutely rigid. 5. Any of the surgical positions can be obtained. The method of obtaining the Trendelenburg position is a new one and very simple. As will be seen from Fig. 1, two thin wire hawsers pass round cylinders underneath the body of the table, and are controlled by the handle at the right hand of the anæsthetist, who can thus turn the table into the Trendelenburg position in a moment. The patient is kept from sliding down by shoulder props or anklets (which I prefer), according to the fancy of the operator. It is important to notice, too, in regard to this position that the table turns on the central axis and is not raised in the middle portion to the detriment of the operator, a fault common to almost all portable tables. The lowering or raising of the end of the table alone, as shown in Figs. 2 and 3, is also accomplished by a new and simple device, which, as with the method of obtaining the Trendelenburg position, does away with the necessity of any rack.

I may add, lastly, that it is the cheapest metal table of the sort on the market. I venture to hope that it will be specially serviceable to gynæcologists, to whom the Trendelenburg position is essential.

Messrs. White and Wright, 93, Renshaw-street, Liverpool, have made the table for me, and I am much indebted to them for having conducted expensive experiments and for having so faithfully carried out my instructions.

W. BLAIR BELL,
Assistant Gynæcological Surgeon, Royal Infirmary, Liverpool.

### A NEW TOURNIQUET.

THIS tourniquet is very simple in its construction, consisting of only two parts,—namely, a stout vulcanised indiarubber tube of any desired length and a cylindrical ring to which two hooks are jointed. The tube is passed through the ring and round the injured limb, after which its ends are securely clamped by pulling them into the angle at the bend of the hooks. The tension is easily adjusted and controlled, being regulated from both ends and not from one end only as in many tourniquets. So long as the indiarubber remains in good condition the purpose would be served, but this substance is, of course, liable to deteriorate from a variety of causes. The new tourniquet is made by Messrs. S. Maw, Son & Sons, Aldersgate-street, London, E.C., who have called it the "Securitas." The price is 4*s.* 9*d.*

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual election of members of the Council was held at the College in Lincoln's Inn Fields on July 4th. There were four vacancies and seven candidates: Mr. H. W. Page, Mr. C. W. Mansell Moullin, and Mr. F. S. Eve were applying for re-election; and Mr. Charles Higgens, Mr. W. Bruce Clarke, Mr. Charters J. Symonds, and Mr. W. D. Spanton were applying for election. The polling commenced at 3 o'clock and was closed at 5 o'clock. The counting of the votes lasted an hour and a quarter and the result was as follows:—

| | Number of votes. | Plumpers. |
|---|---|---|
| C. J. SYMONDS | 452 | 26 |
| W. BRUCE CLARKE | 413 | 52 |
| C. W. MANSELL MOULLIN | 403 | 6 |
| F. S. EVE | 388 | 3 |
| H. W. PAGE | 349 | 11 |
| W. D. SPANTON | 348 | 34 |
| C. HIGGENS | 234 | 10 |

The PRESIDENT (Mr. HENRY MORRIS) announced the result and declared that Mr. Mansell Moullin and Mr. Eve were re-elected and that Mr. Symonds and Mr. Bruce Clarke were elected members of the Council.

It was the heaviest poll that has ever been taken. In all 892 votes were received, 873 being received through the post, and of these two were disallowed as the signatures of the voters were not witnessed and three were received after the opening of the poll; one was disallowed also because the voting paper was blank. 14 Fellows voted in person.

Mr. T. Crisp English and Mr. Willmott H. Evans acted as scrutineers.

---

ON Friday, July 19th, Lady Duckworth-King will open the new electrical department of the Royal Devon and Exeter Hospital presented by Mrs. Sanders in memory of her husband and son, both of whom were formerly Presidents of the hospital.

THE LANCET.

*LONDON: SATURDAY, JULY 13, 1907.*

# Compulsory Notification of Cerebro-spinal Fever in London.

THE London County Council received on June 18th an important report from its public health committee on the notification of cerebro-spinal fever or epidemic cerebro-spinal meningitis. At the Council's initiative notification of this disease has already been made obligatory in London for a period of six months which began on March 12th last. Cerebro-spinal fever, so far as it is related to season, shows a greater prevalence in the early months of the year, and it is now proposed to extend the period of compulsory notification for two additional years in such a way as to cover two possible epidemic periods. This proposal has much to commend it. The experience of recent years shows that in the United Kingdom cerebro-spinal meningitis is not at present to be regarded as a disease which becomes frequently or readily diffused. Here and there in particular localities or households the disease has spread with great rapidity and intensity, in circumstances apparently not unlike those in which typhus fever sometimes shows marked infective ability. Infection from person to person by the meningococcus of Weichselbaum is usually, and probably rightly, suspected to occur in these cases, but we are not yet able to assert that such infection constitutes the principal agency responsible for these specially infective outbreaks. In sporadic cases direct association with previous cases of meningitis has seldom been traced. The part played by intermediate "carrier" cases in the spread of meningitis, like the question of the dependence of the disease on mixed infection, is as yet hardly beyond the stage of speculation. In these circumstances the fact that compulsory notification affords a means of securing the isolation of the patient, the segregation of "contacts," and the disinfection of the dwelling does not constitute the chief reason for this administrative measure. The principal value of notification in London at the present time is that, with coöperation between hospital physicians and medical practitioners on the one hand and medical officers of health and bacteriologists on the other, new facts may be obtained which will throw light on the circumstances in which this highly fatal disease occurs in sporadic form or in which on occasion it becomes intensely infective. This aspect of the question has been realised by the public health committee which recommends that with the continuance of notification in London a small fund should be set aside for investigatory work under the direction of Sir SHIRLEY F. MURPHY and his colleagues in the medical department of the County Council.

Meningitis, both in adults and children, may be connected with a variety of conditions which clinically and etiologically have to be kept apart from "cerebro-spinal fever." The report points out that the term "cerebro-spinal fever" as regards notification to the health authorities is not to be interpreted to include cases of meningitis due to tubercle, syphilis, middle-ear disease, or injury. In regard to so-called "simple" meningitis, and particularly posterior basal meningitis (cervical opisthotonos of infants), the case is different. Dr. A. K. CHALMERS has shown that in Glasgow since attention has been prominently directed by notification to "epidemic" cerebro-spinal disease, many deaths which in ordinary years would have been ascribed to "simple" meningitis or posterior basal meningitis have been registered as due to "cerebro-spinal fever." And from the investigations of Dr. G. F. STILL and others it has for some years been known that the meningococcus of Weichselbaum is frequently discoverable in the cerebro-spinal fluid of cases of posterior basal meningitis. In consequence of the need for better understanding on this and other matters bearing on compulsory notification, the London County Council has taken the prudent step of consulting, and inviting the assistance of, the Royal College of Physicians of London, and a committee which the President, Sir R. DOUGLAS POWELL, convened to consider the question has expressed the following opinions:—

> We find clinically that although as regards symptomatology and duration there are some differences which might separate the most marked cases of cerebro-spinal fever (epidemic cerebro-spinal meningitis) and posterior basal meningitis from one another, nevertheless intermediate cases occur in which such differentiation is impracticable.
>
> It cannot (at present) be maintained by experts with absolute certainty that there is any demonstrable difference in the bacteriology of the two diseases. The organism which is commonly associated with each disease is microscopically the same (meningococcus, micrococcus intracellularis, diplococcus intracellularis meningitidis), such variations as may be met with being dependent on minor differences in cultural characters.
>
> It is noteworthy that, so far as has been ascertained at present, both diseases tend to occur during the earlier months of the year, and that, although the occurrence of the disease in both instances is epidemic, in neither has it the characteristics of a spreading malady.

In view of these considerations and on the advice of Sir R. DOUGLAS POWELL'S committee the County Council proposes to take steps to inform medical practitioners in the metropolitan area that for notification purposes the disease at present known as posterior basal meningitis should be included under the term "cerebro-spinal fever." Arrangements are to be made for bacteriological examination of notified cases so far as may be desirable, and the services of Mr. W. M. WANKLYN, assistant medical officer of health, will be made available with a view to the investigation of cases in association with medical practitioners in London should they so desire. The action of the Royal College of Physicians of London in the matter has done much to prepare the way for making satisfactory use of the information which compulsory notification can provide. We are sure that Sir SHIRLEY MURPHY'S department will receive the coöperation which is required for its investigations, not only from metropolitan medical officers of health and medical officers of hospitals, but also from medical practitioners in London who have an opportunity of giving assistance.

## Reticence to Patients.

AN unfortunate young man, assistant to a druggist at Altrincham, is reported to have committed suicide a few weeks ago in consequence of having been told by his medical attendant that he was the subject of pulmonary tuberculosis. As one result many of our brethren of the non-medical press, not to speak of their "Constant Readers" and other correspondents of various denominations, have been much exercised in their minds over the question whether it is right or desirable for a medical practitioner to warn a patient of the dangerous character and probably fatal termination of an illness. As thus stated, like its famous precursor, "Which came first, the bird or the egg?" the question has the great advantage of being insoluble, and hence of admitting of unlimited discussion, terminating always in the same *impasse*. What is best to be done in any particular case is a matter of discretion and of circumstances, as to which no general rule can possibly be laid down. The supposed discretion will sometimes be indiscreet, the circumstances will sometimes be wrongly interpreted, and harm must occasionally follow, perhaps more often from undue candour than from improper reticence. Queen VICTORIA'S first Prime Minister, Lord MELBOURNE, was much addicted to the inquiry, "Couldn't you have let it alone?" and a similar inquiry is one with regard to which everybody who feels inclined to action, and especially to action beyond the strict limits of professional or personal duty, may well pause and put to himself before, rather than after, any irrevocable word is uttered. Many authentic cases are on record in which an announcement of probably impending death so precipitated the event as to render the warning useless; and many also in which such an announcement has been received with tranquil resignation, or even with absolute indifference. We recall one instance in which the practitioner concerned was actuated rather by theological than by medical considerations and in which, towards the close of a year, he exerted himself to impress upon a patient that he was not likely to see the year which was to follow. At the next visit the patient recurred to the subject, said that the conversation had rendered him uneasy, that there was a matter to which he ought to attend, and that he could sign his name if the medical man would have the kindness to write at his dictation. A ready consent was given, writing materials were procured, and the sick man dictated a letter to his bankers instructing them not to pay his club subscription on the approaching first of January without further orders. We do not know how long he survived, but it seems practically certain that the knowledge imparted to him did not hasten his decease.

In cases of acute illness there are, we presume, two totally different sets of arguments which might be urged by different people in support of the view that the sick person should be told of the existence of serious danger to life. The first of these would rest upon theological, the second upon purely secular, considerations; and with regard o both the medical practitioner has only to consider the mmediate bodily welfare of the patient. The duty and usiness of the physician is to preserve or to prolong life, and to the discharge of this duty every other consideration should give way. If manifest mental anxiety were present as a cause of depression it should, if possible, be relieved, whether it were dependent upon mundane or ultramundane cares, and the sick man, if strong enough and intelligent enough, might be advised either, in the words of the liturgy, to send for "some discreet and learned minister of GOD'S Word and to open his grief," or to send for some judicious lay adviser, by whom his worldly affairs could be placed in the best train and reduced to the best order that time and cirumstances might permit. And either advice might be given, generally speaking, without risk of injury, not as a sentence of death, but on the sufficient ground of the always uncertain issue of serious illness and in order, as a measure likely to contribute towards recovery, to relieve so far as possible any distress of mind to which the sufferer might be a prey. Excepting in novels, however, the conditions described will only seldom be encountered. A patient who is in danger of death owes that danger to definite physical changes in the solids or fluids of his body, changes which generally entail incapacity either for clear perception or for sustained thought, and which afford a very complete protection against emotions which might be injurious if they were in active operation. It is not until the danger has passed away that there is likely to be any consciousness of its extent or character or any manifest dread of the consequences which it might have entailed.

The suicide at Altrincham appears, however, to have been occasioned by knowledge of the probable issue of a chronic illness, and it is not too much to say that it must have been the outcome of mental conditions of a somewhat exceptional kind. It was a practical reassertion of the dictum of the Stoic philosopher who said that if his chimney smoked he would open a window and that if the smoking continued he would open the door of his house and go out. The patient deliberately chose immediate death as an alternative to death reached only by the way of tedious illness; and his choice, from the Stoic point of view, was not unreasonable. But this point of view, in our day, is only met with as an occasional survival and need hardly be taken into account as a guide to the ordinary conduct of practitioners; while it is manifest that the sole reasonable hope of curing many chronic diseases must depend upon a completeness of submission to medical advice which, as a rule, can only be secured by an equally complete realisation of the true character of the issue. How many hundreds of sufferers from tuberculosis, from diabetes, from syphilis, from cancer, throw away their lives either because they are not made fully to understand the alternatives before them or because they are induced by incredulity to stray from the path of safety? A woman with a lump of the size of a marble in her breast will not be saved by being told that it would be "better for her" to consent to its immediate removal, but only by being convinced that nothing but immediate removal will afford any reasonable prospect of the preservation of her life. How many people are there who in an early stage of pulmonary tuberculosis would submit to the discipline necessary for the fulfilment of any prospect of cure if they were only told that they were "delicate" and if the real nature of their illness was concealed from them under a mist of minimising words? How many diabetics would restrain their appetites, how many of the subjects of syphilis would abstain from marriage and would submit to a mercurial course of the necessary character and duration unless the urgency of the several cases were driven home by clear statements of the facts? Every practitioner will meet with times in which to keep silence; but he will also, and far more frequently, meet with times in which to speak. The increasingly scientific character of medicine is imparting, year by year, a greater amount of certainty to its predictions; and just in proportion as such certainty is attainable will be the urgency of the duty of not concealing from the patient any facts about his condition a knowledge of which may be essential for his guidance. There will always be abundant room for the exercise of discretion; and prudence may often require disclosures to be gradual and manifestly the results of continued study of the evidence. But the fact that some few individuals may seek refuge in death from the irksomeness and the anxiety of a struggle with disease is one that has no real bearing upon the question at issue. The ordinary patient must be brought into a sort of intellectual partnership with the practitioner before he can derive full advantage from the knowledge that is being exerted for the purpose of accomplishing his cure.

◆

# The Imaginative Temper in Science.

A DISTINGUISHED Churchman and biologist has given to an exceptionally able work the suggestive title of "The Scientific Temper in Religion," and this idea so exactly embodies another relationship to which we have occasion to call attention that we make bold to annex and adapt his phrase. The occasion to which we allude is afforded by reading some words that fell from Mr. RIDER HAGGARD when recently distributing the prizes to the students of St. Thomas's Hospital Medical School. Mr. HAGGARD exhorted his hearers to fit themselves for their responsibility as scientific practitioners by cultivating, amongst other qualities, their imagination. We consider that Mr. HAGGARD was giving a remarkably good piece of advice, provided always that those who follow it allow their pursuit of science to be not dominated by imagination but tempered with it. The importance of this faculty in relation to science may not be clear to all. Some certainly will tell us that imagination is for the poet—that it is such a spirit as, at the call of the nightingale, transported our famous singer from his Hampstead garden to the forest of Faery "when June was June" a century ago. That spirit was not imagination but fancy. Imagination has more affinity to science, to true constructive science, which transcends the bare collection of facts. Indeed, it may almost be said of the great masters of science who revolutionised their own domains that they were endowed with an imaginative grasp of their subject that gave them a well-nigh prophetic insight to its deepest mysteries; and this insight has served them for an ever-strengthening faith that the minute researches to which they have devoted their lives would one day result in the introduction to the world of thought of a grand and glowing truth the faint image of which had been revealed to them, though darkly, in the glass of their imagination many years before. But herein they showed themselves to be men of science and not dreamers, that before they presented their great gifts to the world they had searchingly and patiently applied to them the touchstone of experiment and ofttimes modified them again and again from their original crude forms; in a word, their imagination was their servant and not their master. For illustration many great names occur. Even though the story of NEWTON'S apple be apocryphal, yet it serves to remind us that he was endowed with an imagination which could conceive of a law of cosmic unity of stupendous import and which had power to urge him to direct the light of his vast intellect upon its elucidation. Will any deny imagination to the scientific faith that in later years confidently announced the existence of an unknown planet with an importunity that met with a triumphant justification? Or if we turn to the sphere of biology, the temper of imagination enters so prominently into the life work of DARWIN and PASTEUR that we are almost tempted to believe that it was this one faculty which lifted them so high above the many great investigators of their century. In the case of the father of bacteriology the insight which led him on from the study of the crystallography of tartaric acid to that of fermentation in plants and thence to the bacterial conception of disease is a pure example of what we mean by the imaginative temper in science.

Many more names might be cited in illustration of this subtle influence in the history of scientific progress but we are constrained to pass to the consideration of the other and dark side of the picture. We are told that "The heathen have imagined a vain thing," and unfortunately that saying is true of the workings of many modern imaginations; indeed, there are far more instances of the unscientific temper in imagination than of the opposite quality of which we have attempted to show the value. The reason why people do harm by imagining vain things is that they will not take the trouble to control their imaginations by the one safe method of laborious and impartial experiment. Let us consider one outstanding example. It was found that certain drugs when administered in minute doses had a controlling action over certain symptoms of disease resembling in each case those produced by the action of the drug on the healthy body. By the exercise of an imagination which was certainly legitimate the founder of homœopathy conceived that all drugs might have this action; if he had only tried them, he would have found that they had not, but instead of doing so he let his imagination get the upper hand and enunciated a general principle which had the unfortunate effect of burdening medicine with a new sect and of producing a considerable amount of professional bitterness. We have amongst us at the present day many beliefs which depend on a distorted imagination, as Mr. HAGGARD reminded his audience at St. Thomas's Hospital, such as that modern distortion of Christianity which goes by the name of "Christian Science," and the effects of those imaginings have been more than once exposed in our law courts, but perhaps it would be fairer to the noble faculty of imagination to class such vagaries under the heading of superstition. We agree with Mr. Haggard in giving that designation to the credulous support which is given to the claims of quacks and patent medicines, although we are not sure that he would not have done better to label antivaccination as the result of sheer selfish and reactionary obstinacy. It is certainly begotten of influences a long way removed from that blend of science with imagination which we set out to discuss.

# Annotations.

"Ne quid nimis."

## THE GOVERNMENT AND VACCINATION.

Already there are signs that the Vaccination Bill and the General Order associated with it find no favour with those who are immediately concerned with their execution. From vaccination officers there have come a sheaf of published denunciations, while the opinions of public vaccinators, if less freely expressed, have been equally emphatic in their condemnation. The Bill has, indeed, little to excuse it, not even a "mandate." It cannot be claimed that more than a relatively insignificant proportion of the inhabitants of this country are genuinely opposed to vaccination. On the other hand, a considerable number of persons, for various trivial reasons and without conviction, are willing to dispense with it. It is to these ill-informed and wavering persons that the facility of exemption by simple declaration will chiefly appeal. For them a too indulgent administration has made provision accordingly. We cannot admit the wisdom of such a course. If vaccination had nothing to do with the public health or any other matter of importance so complaisant an attitude might be justified. Since it is the only safeguard against small-pox known to science, a proved and trustworthy remedy, and on these points there can be no question, then the case is entirely different. To tamper with such a fact as this is to play with fire, for the issues of misapprehension must be disastrous. It is impossible to reconcile with any due sense of the importance of these issues the rapid, almost casual, manner in which this Bill passed through its second reading. The principle of compulsory vaccination has never been condemned or even seriously indicted. On the contrary, it has been accepted and approved by the great majority of the population as a sanitary necessity. Yet a mere handful of gentlemen, one-fifth of the membership of the House of Commons, few with expert knowledge, have been permitted not only to threaten but, unless their decision be reversed, even to terminate its existence. This, moreover, without the slightest reference to public opinion. Surely the inherent faults of party government and the unreality of our so-called representative system were never more graphically exhibited than in this case. We sincerely trust that a measure so little desired by the country and so undesirable on sanitary grounds will not survive the later and calmer judgment to which it is certain to be subjected in both Houses of Parliament. The General Order, in so far as it is new, is a somewhat crude production. That part which relates to the position of public vaccinators alters nothing save the fee, some slight apparent concessions having little real significance. The amount and character of the work are unchanged, but the fee in large towns is reduced by one-half, and in smaller towns and in country districts by nearly a third. The public vaccinator is thus made to accept a much reduced remuneration for his services and incidentally to undersell his brethren engaged in private practice. At the same time, two different standards of payment are adopted—a proceeding which will not only mar the simplicity of administration but will create an invidious distinction which in many cases cannot be justified either on the plea of distance traversed or of professional preoccupation. There are indications that all boards of guardians do not view the proposed reduction with equal favour and their uncertainty with regard to it will not be lessened by the circumstance that under the terms of the Order the whole responsibility for this alteration will rest on them. If the prospect before public vaccinators is not cheerful that of vaccination officers is positively alarming. At present four months are allowed in which a parent may obtain exemption. If at the end of that period he shall not have done so and his child remains unvaccinated the vaccination officer must take steps to have the vaccination performed. Under the new Order this officer will have to notify the parent *three weeks earlier*, stating that in default of "some legal excuse for non-vaccination" he must request the public vaccinator to vaccinate in due course—i.e., after a month has elapsed. He will also "be glad to be informed" if the parent "proposes some other arrangement for the vaccination." He is thus made to come almost as a suppliant and practically to remind the parent that only one month remains in which to claim exemption—a virtual surrender of his office in favour of an opposite policy. The vaccination officers have applied in vain for some compensation for the loss of income which they are certain to incur, or for some fixed arrangement as to salary. Not even are they to be allowed a small fee for their suicidal efforts in notification. Naturally as a body they feel aggrieved and they have in mere self-defence been driven to protest. The net result of these various legislative and administrative changes must be the discouragement of vaccination throughout the country. It is possible that this result may be brought about, and thus by rash interference with an Act which was working admirably and with very general acceptance, and by mere unsteadiness in administration that public security which is the fruit to-day of many years' experience and care may soon be broken down. Instead of it will come uncertainty, distrust, and the danger of epidemic. We have only to let go our present system of business-like efficiency and to adopt some such policy of indifference as is now proposed. Whether and whither that policy will be suffered to lead us will greatly depend upon the judgment exercised by Parliament and by boards of guardians in dealing with this important question of compulsory vaccination.

## THE LEAGUE OF MERCY.

Very effective support is afforded to the King's Hospital Fund by the League of Mercy, over which T.R.H. the Prince and Princess of Wales preside as Grand President and Lady Grand President, and as such take a most active interest in the welfare of the league. This was again shown on July 8th, when they held a reception in Marlborough House of the presidents and lady presidents, followed by a garden party, to which many vice-presidents and members of the league were invited, and at which the Grand President distributed the Order of Mercy to those ladies and gentlemen to whom its award had been sanctioned by His Majesty the King, the Sovereign of the Order. Many prominent members of the medical profession were invited to be present. The work of the league can best be indicated by a quotation from the Prince's speech to the presidents. "The operations cover a larger area than before, and the sum of £18,000 which has been handed over to the King's Fund is £3000 more than was contributed in the previous year. It is very satisfactory to find that in the eight years of the league's existence £79,000 has been given to the hospitals through the medium of the King's Fund, and I think we may safely infer that one of the principal objects of the League of Mercy—namely, the encouragement of personal service on the part of a large number of persons in the adequate management of the hospitals—has been largely attained. Grants have been made to several hospitals situated within the home counties, but outside the area of distribution of the King's Fund. In 1906 these amounted to about £500 and were paid direct to the hospitals after inspection and report. It is contemplated that a larger sum shall be so awarded during the current year." The work of the league is carried on by a network of some 106 "districts" spread over London and the home counties. Nearly every Parliamentary division within this area has its branch of the league, but even yet the organisation of its machinery is not fully completed. There are, however, 182 presidents and lady presidents working under T.R.H. the Prince and Princess of Wales as Grand President and Lady Grand President. Under these, and in coöperation with them, are some 1200 ladies and gentlemen acting as vice-presidents and lady vice-presidents and directing the work of some 20,000 members of the league who in their turn have enrolled as associates—that is to say, subscribers of from 1*s.* a year and upwards—more than 200,000 men, women, and children. Every shilling so subscribed goes directly to the hospitals without any deduction.

## GIUSEPPE GARIBALDI.

JUST 25 years ago[1] we commented on the life and work of the Italian hero then lost to his country and compatriots; and now, when the Italian world, and much that is outside it, has been celebrating the first centenary of his birth we return to the theme. That interval of a quarter of a century has in no wise modified our estimate of the man, nay, as in the case of the mighty statesman Cavour and the soldier king Victor Emanuel, whose policy he helped to carry out, his figure stands forth larger and nobler from the background of years. Intellectually there have been popular leaders far superior to Garibaldi; morally, in heart and soul, few have been so richly endowed. His judgment was frequently at fault; so much so that when his impulse got the better of his prudence Cavour's successor, Massimo d'Azeglio, could say of him: "Garibaldi has the heart of an angel and the head of a buffalo." When he took the field on his own account he almost uniformly failed; when he was following out, consciously or unconsciously, the policy of Cavour he brilliantly succeeded. Not that his failures were without wholesome fruit. Generous initiative is never thrown away, and even his abortive raids on the Temporal Power in 1862 and 1867, as Gregorovius, Rome's great historian, has proved, gave a turn to events which not long after issued in the triumph of the cause which he had at heart. That cause consummated, he, like Cavour before him, sought to educe from it the development of the country's resources, above all, the resuscitation, the ennobling of the nation's character. "We have made Italy," said d'Azeglio, "we have now to make Italians," and in that spirit he set to work. In the January of 1875 he left his island rock for Rome, took his seat in Parliament after taking the oath of fealty to the King, and lost no time in impressing on his compatriots their need for moral, material, ay, even physical rehabilitation. To a dense audience of Romans assembled in the mausoleum of Augustus he conveyed many home-truths—among others this: "What you want is the English steadiness," a lesson which, in the opinion of many Italians, they have yet to learn; and to accelerate that consummation he "began at the beginning," urging the erection of schools, and showing the example of starting them with the aid of English subscribers in the neighbourhood of his island-rock. As to his schemes for reclaiming the Campagna—deflecting the Tiber into the Anio and carrying their united waters round the city into the sea—they never survived the criticism of the great engineer Brioschi, but, all the same, they brought to the front the crying need for the agricultural restoration of the Agro Romano to the productiveness and the salubrity which it enjoyed under the Antonines when the "vegetative energy" of the soil was duly absorbed by cultivation and no "intoxication tellurique" found (or created) a congenial "carrier" in the mosquito. In the same spirit he sought to improve the national physique by a wise and systematic athleticism, and here again his initiative has borne fruit till we see football clubs and outdoor "palaestrae" beginning in Piedmont and gradually penetrating to other provinces and the movement for physical regeneration acquiring such proportions that Rome is to be the seat, next October, of a great congress of "Terapia Fisica," at which every nationality that can assist its object will be represented. The "Good Genius" of that assembly will, indeed, be Giuseppe Garibaldi, who, knight errant as he was, saw other fields for "prowess" than those of war; who, responsive to the delight of battle as the *Re Galantuomo* whom he served, could justify it only as a painful pre-requisite for attaining those conditions under which humanity develops freely and normally and who, in death as in life, is yet a spell potent for the philanthropic ideal:—

> ". . . . . . . . when all men's good
> Is each man's rule, and universal Peace
> Lies like a shaft of light across the land,
> And like a lane of beams athwart the sea,
> Thro' all the circle of the Golden Year."

## LATENT MALARIA.

THE *Yale Medical Journal* for June contains an important paper by Dr. C. F. Craig on Latent Malaria—a subject that has not received sufficient attention. By latent malaria is meant infection with the plasmodium malariæ without the production of symptoms of sufficient intensity to attract attention. Dr. Craig's paper is based upon 1653 cases of malaria, of which 1267 were observed in the United States Army Hospital in San Francisco in American soldiers who had returned from the Philippines, and 386 cases observed in the Island of Luzon. Of the latter, 138 cases occurred in natives. Of the 1653 cases 424, or a little over 25 per cent., were latent. The latent infections included all forms of malaria—tertian (110 cases), quartan (8), æstivo-autumnal (297, of which 272 were tertian and 25 quotidian), combined tertian and tertian æstivo-autumnal (7), and combined tertian and quotidian æstivo-autumnal (2). In Americans there were 307 cases (24 per cent.) of latent malaria, of which 220 were due to the tertian or quotidian æstivo-autumnal parasite. The preponderance of this organism is due to the fact that it is more resistant to quinine than the others. From an epidemiological point of view, the importance of recognising latent cases of malaria is great, because a person with latent malaria may be a source of infection to the community in which he lives. Hence the blood of persons returning from a malarious district ought to be examined. The extent to which latent infection may prevail is shown by the following facts. A company of 60 infantry returned to San Francisco after duty in a notoriously malarial region in the Philippines. 14 were in hospital for malaria, and examination of the blood of the remainder who were doing duty showed malarial infection in 27. Of these 25 were infected with æstivo-autumnal plasmodia—13 showing crescents of the tertian type; two showing crescents and ring forms of the quotidian type; and 10 showing crescents and ring forms of the tertian type. These figures are important because they show that the type of plasmodium is the most dangerous one, and that it is usually present in the crescent form, which is intended to complete its development in the mosquito. Thus the subjects could infect the anopheles wherever they might go. Among the Americans a large number of latent malarial infections occurred as complications of other diseases. These cases amounted to 106 and the original diagnoses included all forms of disease. Among the more frequent were chronic diarrhœa, chronic dysentery, amœbic dysentery, pulmonary tuberculosis, and chronic gastritis. In nearly all cases treatment with quinine by removing the malarial infection produced marked improvement. The cases of non-amœbic dysentery and diarrhœa raise the moot question whether there is a form of dysentery due to localisation of the malarial plasmodium in the capillaries of the intestine. The existence of latent malaria in a large proportion of native children who live in malarious districts has been shown by many observers. Koch found malarial parasites in the blood of 100 per cent. of native children in West Africa. As the children grow up the infection seems to disappear. Dr. Craig found malarial parasites in the blood of 51 per cent. of the Philippinos of a malarious locality. The æstivo-autumnal parasite predominated but all forms were represented. The adult Philippinos appeared to be infected much more frequently than the natives of Africa or India. Another form of latent malaria may exist in which no parasites are present in the peripheral blood. The disease then can be recognised only by splenic puncture or on necropsy. Dr. Craig has observed seven such cases in which death was due to some other disease and malaria was not suspected and was discovered on microscopic examination of the viscera. The spleen was considerably enlarged and its sinuses were congested and pigmented and contained numerous infected cells and pigmented leucocytes.

---

[1] THE LANCET, June 10th, 1882, p. 956.

## THE HEALTH OF HUDDERSFIELD.

THE county borough of Huddersfield has in recent years become famous among English municipalities by reason of the public spirit shown by the corporation in its efforts to improve the health of the people, and especially to reduce the formerly excessive infantile mortality. We have lately received the report of Dr. S. G. Moore, the medical officer of health, which deals with the mortality of that town in the first quarter of the year 1907. We direct attention to this report because of some remarks which it contains on the calculation of local rates of birth and of mortality. Dr. Moore is evidently dissatisfied with the national method of estimating populations, presumably because Huddersfield is thereby shown to possess a declining population. He points out that there is no ground for the assumption, on the one hand, that the rate of increase prevailing in the recent intercensal period changed abruptly at the time of the census, or, on the other hand, that the rate of decrease in that intercensal period must continue. Therefore he argues that in estimating local populations it is justifiable to take into account "the increase of inhabited houses, of scholars in attendance at schools, &c., as well as of the excess of births over deaths." These corrections Dr. Moore appears to have applied to the population of Huddersfield and thus to have arrived at the conclusion that instead of the decrease estimated by the national method the population of that town has increased since the last census by some 5000 people. Dr. Moore properly recognises that in estimating populations for his periodical returns the Registrar-General must employ a system which shall be generally applicable. Having no official knowledge of local conditions he has no choice but to follow this course. Upon this point, however, we may remark that it is for this reason amongst others that medical officers of health are expected to calculate rates of birth and death for their several districts, which shall be duly corrected according to local requirements. And, further, we believe that in at any rate one important instance the Registrar-General some years ago consented to revise his estimate of a population on his being supplied with satisfactory evidence derived from the local rate-books. We have no space here to discuss the difficult question of population estimates, but we entertain considerable doubt of the expediency of publishing death-rates for small populations and for short periods of time. Estimates of population on the national method for the whole country or even for large sections of the population have generally proved fairly trustworthy. But when, as in the case of Huddersfield, rates are published not only for quarterly periods but for separate diseases and for areas containing not more than two or three thousand inhabitants, the result is almost certain to be misleading.

## DISLOCATION OF THE UPPER END OF THE FIBULA.

THIS is certainly one of the rarer dislocations, only some 25 cases being discoverable in surgical literature. An instance has been recorded by Dr. Frank B. Golley of Milwaukee in the June number of the *American Journal of Surgery*. A man, weighing about 13 stones, slipped and fell with his left leg and foot directly under him, and at the same time he heard something snap. When seen two hours later the chief sign visible was swelling over the ankle and the lower third of the left leg. No fracture could be found, but the external lateral ligament of the ankle was torn. Next day the patient complained of a grating or grinding sensation in the calf of the leg when the foot was flexed or extended. Dr. Golley then discovered a displacement outwards and forwards of the upper end of the fibula; it was especially noticeable when the foot was flexed or extended. The dislocation was easily reduced and a plaster-of-Paris bandage was applied. When the splint was removed three weeks later the displacement did not recur, but the ankle was stiff and lame for a month longer. Very rarely indeed this displacement may be the result of direct violence. In most cases it appears to be due to slipping or falling, the violent contraction of the muscles in front and at the outer side of the fibula, to check the fall, producing the displacement. In some cases, as in that above detailed, the leg and foot are forcibly twisted under the body, the foot being in a position of dorsal extension. In this way also severe traction would be made on the upper end of the fibula. If kept in position for three or four weeks there seems to be no tendency to recurrence.

## THE LONDON COUNTY COUNCIL AND THE MILK-SUPPLY.

AT the weekly meeting of the London County Council on July 9th a report of the public health committee was presented dealing with certain proposals for legislation in the session of 1908. In this report the committee recognised that the most urgent need for legislation on public health matters was that of securing to the inhabitants of London a pure and uncontaminated milk-supply. There were clauses in the Council's General Powers Bill of 1907 enabling the Council to detect and to stop the supply within the county of tuberculous milk, and it was proposed that the Council should seek authority to deal with milk which at the time of entry into London was contaminated with dirt and filth. To that end the medical officer would have power to take samples of milk at railway stations and elsewhere and on ascertaining that such milk was tuberculous to inspect the farm from which the supply was derived. The supply would be stopped if it was proved that the cows were affected with tuberculosis of the udder. No one can deny that such a system of control is desirable, the only debateable question being whether such control should be administered by the County Council as the central authority or by the local sanitary authorities. Meantime, the President of the Local Government Board has announced his intention of introducing a national Bill on the subject. Ultimately the Council decided to adopt an amendment, moved by Mr. Felix Cassel, that general legislation affecting the whole country and more effective administration are necessary for the purpose of securing a purer and more wholesome supply of milk and that representations to that effect should be made to the President of the Local Government Board and that it be referred to the public health and Parliamentary committees to give effect to this proposal. Further, the public health committee was instructed to report in detail as to any legislation which it may consider necessary for the purpose of securing a pure and wholesome milk-supply for London in particular pending, or in addition to, general legislation after conferring with, or otherwise ascertaining the views of, the metropolitan borough councils and the corporation. The amendment was adopted as a substantive motion and it was further agreed that powers should be sought to enable sanitary authorities in London to register cowkeepers, dairymen, or purveyors of milk or to remove them from the register in the event of their premises being found unsuitable for the sale of milk.

## A WINTRY JUNE.

A VERY unsatisfactory May has been followed by a June that was not only disappointing but actually miserable. The north-easterly and easterly winds of the former month did occasionally allow the thermometer to rise to the normal or even above it, but the south-westerly and westerly winds which largely predominated during June scarcely ever permitted the temperature to reach its average level during the afternoon, and generally kept it at some degrees below that point. During June of 1906, a by no means warm month, the shaded thermometer in London rose to 70° F. or above on 18 different days, but only once during last month did the metropolis experience the warmth of 70°. Such a continued low temperature may have occurred during some Junes of the past century, but statistics prove that no June of the last 35 years has given such monotonously cool weather, although several have been wetter and some have afforded less sunshine. As many of the nights, however, were rather mild the mean temperature for the month was not nearly so much below the average as the persistent cold days would cause to be supposed. In London the mean warmth of the nights was 51·2°, which is 0·9° above the average, but the mean temperature of the afternoons was only 63·6°, a figure as much as 5·7° below the normal. The low temperature was in a large measure the result of the cloudy and overcast sky but that it was not entirely due to the absence of sunshine is proved by the fact that on days when the sky chanced to be practically cloudless the maximum temperature readings were still low. On the 16th Westminster enjoyed continuous sunshine, a total duration of nearly 14 hours being recorded, and yet the highest point attained by the screened thermometer was only 63°, more than 6° below the average, while the solitary maximum above 70° (on the 9th), was reached with about half the amount of sunshine. A similar lack of seasonable warmth during almost constant sunshine occurred on several days both in the metropolis and over the kingdom generally. Below will be found the aggregate duration of sunshine recorded by the Campbell-Stokes burning instrument for June both of this and last year, together with the differences from the average. The figures show that, considered generally, the minus value of last month was greater than the plus value of the sunny June of 1906. Several places on the south coast and others in the south-east and south-west had more than two hours per day less than the average duration. The brightest spot was Sandown, Isle of Wight, for which place there is unfortunately no trustworthy average, while the places with the least divergence from the known average were Margate, Blackpool, and London (Westminster). Some of the coastal resorts were subject to attacks of sea-fog, and the abnormally small number of hours recorded at Aberystwyth, little more than three per day, was to some extent due to that unwelcome phenomenon.

| — | 1907. | | 1906. | |
|---|---|---|---|---|
| | Number of hours. | Difference from average. | Number of hours. | Difference from average. |
| Aberdeen ... ... ... | 149 | – 37 | 195 | + 8 |
| Lowestoft... ... ... | 165 | – 63* | 228 | + 10* |
| Clacton ... ... ... | 175 | – 55* | 251 | + 21* |
| Margate ... ... ... | 178 | – 8 | 224 | + 38 |
| Folkestone ... ... | 192 | – 35* | 246 | + 20* |
| Hastings ... ... ... | 166 | – 73 | 260 | + 31 |
| Eastbourne ... ... | 191 | – 56 | 273 | + 51 |
| Brighton ... ... ... | 158 | – 65 | 246 | + 23 |
| Worthing... ... ... | 175 | – 62* | 261 | + 24* |
| Bournemouth... ... | 183 | – 22* | 271 | + 66* |
| Sandown, I.W. ... | 209 | ? | 209 | ? |
| Torquay ... ... ... | 167 | – 62 | 262 | + 35 |
| Jersey ... ... ... | 170 | – 72 | 269 | + 27 |
| Tenby ... ... ... | 155 | – 74 | 221 | – 8 |
| Aberystwyth ... ... | 104 | ? | 163 | ? |
| Llanduduo ... ... | 147 | – 57 | 238 | + 34 |
| Blackpool... ... ... | 179 | – 20 | 247 | + 48 |
| Harrogate ... ... | 149 | ? | 200 | ? |
| Bath ... ... ... ... | 146 | – 40* | 236 | + 50* |
| Nottingham ... ... | 141 | – 56* | 185 | – 12* |
| Loudon ... ... ... | 147 | – 20 | 231 | + 64 |

* The differences marked with an asterisk are obtained from an average for a comparatively few Junes.

## A CASE OF ANNUALLY RECURRING LARYNGEAL SPASM.

A PECULIAR case of temporary laryngeal spasm, recurring annually at about the same time, is recorded by Dr. M. Hajek in the *Wiener Medizinische Wochenschrift* of March 30th. The patient came under observation first on Feb. 17th, 1898, complaining of great difficulty in breathing of four days' duration. An adenoma of considerable size was found in the left lobe of the thyroid body. Laryngoscopic examination was very difficult owing to the urgent dyspnœa. The patient was kept in hospital and the goitre was removed, but the dyspnœa persisted for about 14 days afterwards. During the next two years no further trouble was experienced, but in February, 1901, sudden and urgent dyspnœa developed of so severe a character that tracheotomy was performed. Three weeks later the cannula was removed, the breathing was quite natural, and on laryngoscopic examination both trachea and larynx appeared normal. In February, 1902, another attack of dyspnœa developed, lasting until the middle of April, but of less severe character, so that no medical assistance was sought by the patient. Since that time similar attacks have occurred each year, beginning at about the middle of February and lasting until the middle of April. The dyspnœa is constant during this period both day and night and practically without any remissions. It is apparently not influenced by any medicinal treatment. The attack commenced this year on Feb. 4th. The patient was observed to be dyspnœic, with stridorous breathing, and a cyanotic appearance of the skin and mucous membranes. On laryngoscopic examination the vocal cords were shown to be slightly congested and in a position of extreme adduction, the patient breathing practically through the small aperture between the arytenoids or the "transverse triangle." That this adduction is not the result of paralysis of the abductors is proved by the facts that during laryngoscopic observation a momentary abduction of one or other cord can be seen from time to time and that after the cessation of the attack laryngeal movements appear to be absolutely natural. If laryngoscopic observation were at all prolonged the dyspnœa was much aggravated. Treatment by cocainisation, by narcotics, and by the passage of laryngeal bougies all proved unavailing. No other sign of disease was discovered and there was no indication that the condition was of hysterical nature. Dr. Hajek discusses the nature of his case and makes the suggestion that it may be an atypical form of tetany on the following grounds: the patient is a shoemaker, a trade which affords a not inconsiderable percentage of cases of that disease; cases of tetany commonly commence in the month of February; and in children, at any rate, the association between laryngeal spasm and tetany is well recognised. On the other hand, the dyspnœa was constant instead of intermittent, no trace of spasm in any other muscle was observed, while Trousseau's sign and the over-excitability of the nerves (Erb's sign) were both wanting, the only other condition suggesting tetany being that the "facial phenomenon" was very marked. In discussing the possibility of an association between these attacks and the degeneration and extirpation of the thyroid body Dr. Hajek comes to the conclusion that it is improbable, since one attack began before the operation was performed, while after it there was an interval of two years free from dyspnœa. The case is an obscure one and its actual nature is admittedly doubtful, but in support of Dr. Hajek's suggestion it is interesting to recall that tetany is very common in Vienna and may occur in epidemics, especially during March and April, and that of 399 cases collected by Frankl-Hochwart 174 occurred in shoemakers.

## "PREVENTIVE MEDICINE THE MEDICINE OF THE FUTURE."

At the Congress of the Royal Institute of Public Health which was held at Douglas (Isle of Man) at the beginning of this month, Sir James Barr delivered a presidential address in the section of preventive medicine, which in its vigour of expression and felicity of phrase was well worthy of its distinguished author. He took for his text "Preventive Medicine the Medicine of the Future," and preached a crusading sermon against the *laissez-faire* attitude with which too many people are content to contemplate a vast amount of preventable disease and self-inflicted national degeneracy, and he did not spare that curious perversion of "Religion" that attributes to the will of God the results of our own national hygienic and genetical shortcomings. He began by remarking that in interesting himself in preventive medicine he was not opposing his professional interests, for "as long as people are alive there is a chance of making something out of them, but once they are dead the interest of the medical man ceases, except from a pathological standpoint, or in the aggregate for statistical information." He then proceeded to unfold his main contention that the reason why the successes of sanitarians have been limited is because they have devoted so much attention to the prevention of zymotic disease and the preservation of life rather than the improvement of health. If medical men would deal with physiological conditions as well as pathological, and tell patients how to keep well and not merely how to get well, they would get more patients. This is a very pretty theory, but we are not able to endorse it fully. If there were a real demand for information as to the rules of health on the part of a large number of people we may be sure that our profession would be only too pleased to supply them; the trouble is to get even those who are ill to follow the dictates of reasonable authority as to their mode of life unless they be actually suffering some pain or other subjective reminder of their condition. If, however, the profession as a whole would more firmly impress the vital importance of prophylactic personal hygiene upon all and sundry as readily as it has, since the decline of Greek medicine, dealt out drugs to them, the public demand for advice on the best manner of living in order to prevent disease might become as general as has the clamour for physic to cure it. Sir James Barr devoted some attention to political matters, especially urging that before granting pensions to old people it is the duty of the nation to provide for the adequate nutrition and hygiene of its nursing mothers and young children, and to see that its school children are properly fed before any attempt is made to teach them, whilst it might well leave to individuals the care of their own old people. He quoted Lord Beaconsfield to the effect that "The public health is the foundation on which repose the happiness of the people and the power of a country. The care of the public health is the first duty of a statesman." He considered that if the nation will only do its duty in this matter there will speedily follow a check to the diminution of the birth-rate and, what is of more importance, a marked decline in the infantile death-rate. We need not enter into his discussion of the latter subject as it has been so often before our readers, although it cannot be too often restated to the public with such force as Sir James Barr knows how to infuse into his utterances. He paid a handsome tribute to the *personnel* of the navy and the army as the flower of English manhood and the hope of salvation of the country and extolled the military training as the best means of insuring national health and physique. Passing to the question of physical deterioration he favourably regarded Dr. Rentoul's drastic proposals to prevent the propagation of the race by the unfit and he expresses his view that heredity has much more to do with the welfare of the nation than those who so strongly proclaim the all-important influence of environment are disposed to allow; he agrees, in fact, with the transatlantic counsel that a man cannot be too careful in the selection of his parents. He is much concerned at the deafness of our legislators to the report of the Committee on Physical Deterioration, to the opinions of which he gives his full support. He is able to find some consolation in the national outlook on the distaff side and remarks, "I have great faith in the British women, the potential mothers of the next generation. They do not show so much deterioration, except in the very lowest strata, as the men, and in the upper and middle classes the girls of to-day will bear a very favourable comparison to their mothers and grandmothers." The last half of the address consisted of an examination of the increase or decrease that has taken place of recent years in the death-rate from various diseases. After giving credit to sanitary science for the decline in the ravages of tuberculosis and many of the specific infectious disorders he called attention to the fact that there has not been a corresponding diminution in deaths from those that more especially affect children, but his chief indictment was against the apathy that exists concerning the enormous yearly loss of life from pneumonia which with the observance of proper caution might be a much more preventable disease than it is considered to be. He dwelt also on the wide scope for preventive medicine in guarding against diseases of the heart, kidneys, and blood-vessels which are on the increase owing "no doubt largely to greater wear and tear, more worry and anxiety in life." It is in this sphere undoubtedly that the preventive activities of the general practitioner should find their scope and we consider that Sir James Barr has done good service in calling attention to the matter. He concluded a fighting speech by again asserting that he was concerned with the efficiency of life and not merely with a useless longevity and that the maintenance of the vitality and manhood of the nation is the true aim of medicine. His last word was for the surgeons whose very existence he ascribes to the inefficiency of true preventive medicine. Whatever view may be taken of Sir James Barr's opinions there will be few people who will regret that he had the courage of their free expression before a mixed audience, for they cannot fail to have set his hearers thinking deeply about a subject of national import.

## EPSOM COLLEGE.

FOUNDERS' day at Epsom College will be held this year on the afternoon of July 27th, when the distribution of prizes will also take place. A service will be held in the school chapel at 2.45 P.M., and the new east window will be unveiled by the treasurer of the College, Mr. Henry Morris, himself an old Epsomian. The window, which has been erected by old Epsomians and friends of the school, will be dedicated by Dr. Furneaux, the Dean of Winchester. The Dean of Winchester will also distribute the chief prizes and will deliver an address. A parade of the cadet corps will take place during the afternoon.

## EPIDEMIC CEREBRO-SPINAL FEVER.

IN London during the month of June there were 17 cases of cerebro-spinal meningitis notified, four of them belonging to Stepney, two to Poplar, and one to each of 11 other boroughs. A death from the disease has also occurred in Nottingham, being the fourth fatal case in that city. In Scotland during the week ended July 6th there were ten deaths from this cause registered in Glasgow, three in Edinburgh, and three in Leith. In Glasgow the weekly report issued on July 5th showed that there were at that time 74 cases under treatment. In Belfast during the week ended July 6th there were five deaths registered as being due to this cause.

## SUNDAY LABOUR.[1]

THE Sunday question is not an easy one to solve and, as might be expected, therefore, the literature dealing with it is not small. From "Seven Days' Hard Labour" we learn that in the British Museum the books or issues of various kinds dealing with the subject are nearly 200 in number, in the Bodleian Library at Oxford 169, in the Advocate's Library at Edinburgh 280, in the Royal Library at Berlin 215, and in the Congress Library at Washington 125. The present little book in question is a plea for a weekly rest day Act of Parliament for all classes and consists of a series of chapters pointing out the evil effects on the body and higher psychic functions of Sunday labour. One chapter is written in collaboration with Dr. Henry Shackleton and the arguments in the book are supported by men of authority, medical and clerical, of course, but also among all classes whose opinions carry weight. The work of our police service and omnibus and tramway men is dealt with, Sunday on the continent is discussed, the legislation on the subject is described, and the hygienic aspects of the question are pointed out. There can be no doubt that from many causes Sunday is becoming more and more a day of pleasure, with the necessary sequel that there is an increasing demand for Sunday labour. But no legislation is likely to restore to us the position which Sunday once held as a day of rest until some alteration takes place in our social and economic conditions. So far as the working classes are concerned, and it is principally in their interests that the book is written, the need for some change of occupation is the primary factor which causes them to seek forms of amusement on Sunday which do not tend to the best results, while increased work is entailed on other members of their class. Excursions by overcrowded trains or visits to concert rooms where the air is of necessity vitiated, for example, are not ideal methods of counterbalancing the effects of the week's toil but the laws of nature demand reaction which might take a worse form. We might as well try to ameliorate social and economic evils by prohibiting the use or invention of machinery as to interfere with the Sunday question by legislation. In both cases the remedy lies in the direction of further opportunities for relaxation during the weekdays and as the public become more and more educated in matters which concern the health of the individual and of the community and recognise the fact that proper rest and recreation during the working days lead in the long run to better work and the general good of all classes, so will the tendency to make Sunday the least restful of days lessen. It is only by education that true reform in this matter will be brought about. "Seven Days' Hard Labour" should do something to help a cause which has our full sympathy.

## A NEW RADIO-ACTIVE SUBSTANCE.

IF the announcement from the School of Medicine at Rochfort this week is true that a substance has been prepared which shows the same radio-activity as does that of radium bromide, a very considerable impetus will be given to the study of radio-active phenomena. It is said that the substance is uranyl-molybdate, and judging from its constitution there should be no difficulty in preparing it or any trouble about finding plenty of materials, for uranium and molybdenum are fairly abundant elements. The molybdate is formed by adding ammonium molybdate to uranyl nitrate when a white amorphous powder separates. This is dried in the dark and apparently must be kept there as it is unstable. Report says that it gives radio-active effects which are practically as intense as those given by radium. Though costly—namely, about £22 per ounce—the price is not so enormous as is that of radium which has reached many thousand pounds for the same quantity. The further developments of this discovery, made by quite a young student named Andre Luncien, will be awaited with interest.

## THE CHILDREN'S HOLIDAY.

THERE are some things of which it is difficult to appraise the value. One of them is the smile of a child and that smile, when brought about by a change from impure air and sordid surroundings to the pure air and beauties of the country, is enhanced considerably in value. Year after year we plead on behalf of the many societies whose objects are the provision of annual holidays for the poor children who live in our slums and alleys. Alas, that such places should still remain with us, but while they exist it is the duty of everyone who is able to assist these societies in their benevolent and truly national work. For, as we have frequently pointed out, it is not only the individual child who receives benefit but also the community in general. The Bishop of Stepney has issued an appeal to the press on behalf of the Children's Fresh Air Mission, a society which chiefly deals with the 3000 children in the overcrowded streets of Clerkenwell, Holborn, and St. Luke's, and to give these children the holiday which they so urgently need at least £1500 in addition to the sums already received are required. For the sum of 10*s.* one of these children will receive a fortnight's holiday amidst surroundings which can only be described as elysian, as compared with the environment of their daily life, and 10*s.* could not be more profitably invested. Subscriptions and donations, however small, towards this object will be welcomed by the secretary of the Children's Fresh Air Mission, St. Peter's Schools, Onslow-street, Clerkenwell-road, London, E.C. Another appeal for help comes from the Boys' Brigade Seaside Camp, of which the secretary is Mr. R. S. Peacock, 34, Paternoster-row, London, E.C. "Last summer," the President writes, "2768 London boys out of a membership of 7000 were able to taste the delights of a week or ten days under canvas and a larger number still are hoping to be present this year. While the boys themselves, by saving up their spare pence during the winter months, contribute over one-half the cost of the camps, a large sum is needed to supplement their payments. The cost per boy is about 15*s.* Thus every pound contributed will enable three boys, who would otherwise perforce spend such holiday as they receive in listless idleness in the hot and arid streets of the metropolis, to join with their comrades in the joys of a week by the sea." The advantages of a holiday of this kind are too obvious to need any comment and we trust the brigade will receive the support which it certainly deserves.

---

[1] Seven Days' Hard Labour: The Bitter Cry of the Sunday-less. By T. Bowick. London: The National Hygienic League. Price 6*d.*

## A CASE OF CEREBRO-SPINAL MENINGITIS POSSESSING MEDICO-LEGAL INTEREST.

EPIDEMIC cerebro-spinal meningitis is fortunately somewhat rare in London, only seven deaths from this very fatal disease having occurred within the metropolitan area during the month of May. The most recent case to which public attention has been directed presents some remarkable features. The patient was a costermonger, aged 28 years, who was assaulted by roughs in Radnor-street, St. Luke's, on June 16th, and received lacerated wounds of his head and face, for which he was surgically treated. He was afterwards admitted to St. Bartholomew's Hospital with symptoms which, in conjunction with his other injuries, were supposed to indicate fracture of the skull. Death took place on June 27th but at the necropsy there was no evidence of fatal lesions due to the assault. A diplococcus was, however, discovered in the cerebral fluids or membranes and in the result the jury returned a verdict to the effect that death was caused by cerebro-spinal meningitis, or "spotted fever." One of the men who attacked the deceased received a sentence of two months' hard labour and no doubt his associates are relieved to find that a charge of manslaughter will not be preferred against them.

## MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-sixth annual meeting of this association will be held on Thursday and Friday, July 25th and 26th, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. P. W. MacDonald. There will be a meeting of committees previously, on Wednesday afternoon. The council will meet at 9.30 A.M. on Thursday morning and the annual meeting will commence at 11 A.M. After the election of officers for the ensuing year, the adoption of reports, and other formal business has taken place in the morning the President will deliver his address in the afternoon and Dr. Charles C. Easterbrook will read a paper entitled "The Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air." In the evening the annual dinner will take place at the Whitehall Rooms, Hôtel Métropole, at 7.15 for 7.30 o'clock. Tickets £1 1*s.*, wines included. On Friday morning Dr. T. S. Clouston will introduce a discussion upon Psychiatry as a Part of Public Medicine; Dr. Albert Wilson will give a clinical demonstration and read a paper on the Psychology of Crime; and Dr. Henry Devine will read the notes of a case of katatonia in a congenital deaf-mute, illustrated with lantern slides. In the afternoon Dr. W. Ford Robertson and Dr. G. Douglas McRae will communicate "Observations on the Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Anti-sera," and Dr. Lewis C. Bruce will read a paper entitled "Clinical Observations on Certain Cases of Mental Depression." Members are requested to notify their intention of dining to the honorary general secretary, Dr. C. Hubert Bond, at 11, Chandos-street, Cavendish-square, London, W.

## WORKMEN'S COMPENSATION ACT, 1906.

THE Home Secretary has made the following regulations as to examinations of a workman by a medical practitioner provided and paid by the employer under the provisions of the First Schedule to the Workmen's Compensation Act, 1906:—

1. Where a workman has given notice of an accident or is in receipt of weekly payments under the Act, he shall not be required to submit himself, against his will, for examination by a medical practitioner provided by the employer except at reasonable hours.

2. A workman in receipt of weekly payments shall not be required, after a period of one month has elapsed from the date on which the first payment of compensation was made, or if the first payment is made in obedience to the award of a committee or arbitrator, from the date of the award, to submit himself, against his will, for examination by a medical practitioner provided by the employer except at the following intervals: Once a week during the second, and once a month during the third, fourth, fifth, and sixth months, after the date of the first payment or the award, as the case may be, and thereafter once in every two months.

Provided that where after the second month an application has been made to the county (in Scotland, the sheriff) court or to a committee for a review of the weekly payment, the workman may be required, pending and for the purposes of the settlement of the application, to submit himself to one additional examination.

The suggestions seem to us to be quite reasonable and satisfactory.

## THE CHAIR OF PATHOLOGY, OXFORD.

THE electors have appointed Dr. George Dreyer to this newly founded and important chair at the University of Oxford. Dr. Dreyer is a lecturer on pathology in the University of Copenhagen, where he is chief assistant to Professor Salomonsen, and is well known for his able researches on bacteriology, pathological histology, and the complex problem of immunity. Those who were at the meeting of the pathological section of the British Medical Association at Oxford will remember the able part which he took in the discussion on immunity and will remember that he speaks English with great facility. Dr. Dreyer worked for some time with the late Sir John Burdon-Sanderson and is very well known to the younger Oxford men, a number of whom have carried on researches with him at Copenhagen. Dr. Dreyer is the son of Captain Dreyer of the Danish Navy and was born at Shanghai in 1873, and it is probable that his comparative youth, his other claims being very strong, helped to determine the issue of the election.

IN consequence of the death of Sir William Broadbent, senior consulting physician to St. Mary's Hospital, the presentation of prizes to the successful students of the medical school by Professor W. Osler, which had been arranged for Thursday, July 11th, was postponed.

THE distribution of prizes gained by the students and nursing probationers of the London Hospital and Medical College will be made by Mr. Hudson E. Kearley, M.P., on Wednesday, July 17th, at 3.30 P.M., in the library of the Medical College.

WE note with pleasure the grant of a Civil List Pension to Dr. Charles Creighton, the author of the "History of Epidemics in Britain."

A LOCAL Government Board inquiry was held at Bude on July 3rd into the application of the Stratton and Bude urban council to borrow £14,000 for sewage disposal.

# DECENNIAL SUPPLEMENT FOR 1891-1900 TO THE SIXTY-FIFTH ANNUAL REPORT OF THE REGISTRAR-GENERAL.

## Part II.

Continuing our notice of this report, certain portions of which were considered in The Lancet of June 29th, we observe that the progress of sanitation is seriously impeded by reason of the overlapping and confusion of administrative areas which still unfortunately persist. There are now in this country about a dozen urban sanitary areas, including three county boroughs, which extend not only into more than one registration district but into more than one registration county as well. No organised attempt has hitherto been made to coördinate the Poor-law unions—on which the system of registration districts is founded—and the urban and rural districts, which are the units of area for sanitary purposes. Such coördination is doubtless hindered by practical difficulties, but its advantages are so great and so obvious that Dr. Tatham rightly protests against indefinite delay in attempting to secure it.

Ever since the passing of the first Public Health Act a steady growth of public interest has been maintained in the cause of sanitary reform, the progress of which has doubtless been encouraged by the popular, though erroneous, belief that the reports of the Registrar-General furnish an accurate and sufficient measure of the health of every administrative area in England and Wales, as well as the means of testing the effect of works undertaken from time to time for the improvement of local sanitary conditions.

In his previous decennial supplement Dr. Tatham expressed regret that although since the year 1847 particulars of mortality had been published decennially with respect to the causes of death in each of more than 600 registration districts, nevertheless this elaborate series of tables could seldom be utilised for purposes of public health administration because of the overlapping of areas above referred to. At the end of the year 1906 the number of urban districts in England and Wales was 1166 and yet only 149 of these were co-extensive with the registration areas to which alone these statistics relate.

For the purpose of comparing English mortality in the urban with that in the rural districts for the decennial period 1881–90 the urban area was represented by the 78 largest towns and the rural area by the remainder of England and Wales, the death-rates in these areas being approximately corrected by the indirect method employed in the annual summary when the local death-rates at the several age-groups are not known. For the present report the mortality has been calculated on an improved method for every registration district and every registration county of England and Wales. In order to emphasise the great differences still obtaining between the mortality of the towns and that of the country a selection has been made from among the English and Welsh counties showing in one group the counties which are mainly urban in character, containing the chief centres of industry, and in another group the counties which are mainly rural in character—the latter group contrasting strongly in this respect with the former. As the urban area contains a population of 16,500,000 and the rural area a population of 4,250,000, we see that urban and rural England are fairly represented by the selections made. For these areas respectively the death-rates in 1891–1900 have been corrected for age differences of population, and the results of this correction are illustrated in a table inserted in the report. From this table we learn that while the crude (i.e., the uncorrected) death-rates show a difference of only 2·46 per 1000 as between the urban and rural areas, the corrected rates show a difference of not less than 5·46 per 1000.

That local differences of mortality are in some way related to varying degrees of density of population is matter of common knowledge. For the national statistics prove that the areas with the highest death-rates are, as a rule, the densely populated industrial centres, while the sparsely peopled rural districts show almost invariably the lowest death-rates. The late Dr. William Farr devised a formula showing approximately the relation subsisting in 1861–70 between density and mortality in the districts of England and Wales. But in these days the relations existing have become too complex to admit of expression by any known formula. That mortality does still increase as density increases is shown by tables in the report, but this increase may with much probability be accounted for by other factors directly due to excessive overcrowding rather than by increased density *per se*. In this connexion it may be mentioned that whilst the mean density of the English population rose from 471 persons to the square mile in 1881–90 to 525 persons in 1891–1900, the death-rate fell from 18·73 per 1000 living to 18·19 per 1000.

Recent statistics show that whilst in 1881–90 no English district had a corrected death rate below 12 per 1000, in the following decennium there were 27 districts in which the mortality fell below that limit. The number of districts with rates between 12 and 13 per 1000 rose from 33 in the former decennium to 112 in the latter. Altogether, in the first-mentioned period there were 417 districts, with 9,000,000 inhabitants, that had corrected death-rates below 17 per 1000, as against 461 districts, with 12,000,000 inhabitants, in the period last mentioned. At the opposite end of the scale there were in 1881–90 not fewer than 41 districts, containing 5,500,000 people, that experienced death-rates above 23 per 1000, whereas in 1891–1900 the number of districts thus heavily rated did not exceed 20.

The proportion of deaths registered as uncertified varies enormously in different parts of the country. In Herefordshire the proportion in 1891–1900 was 5·2 per cent. of the total deaths, and in North Wales it was 4·8 per cent. On the other hand, the percentage did not exceed one in Middlesex, Wiltshire, or Monmouthshire. In relation to this subject attention is drawn to the fact that in many cases inquests are held on the bodies of persons who had been actually under medical care at the time of death. Such deaths are placed under the head of "inquest cases," and are excluded from the list of deaths medically certified. In many instances medical evidence is undoubtedly given at the inquest; but except in cases where a necropsy has been made there are no means of ascertaining whether or not medical evidence has been given. The medical evidence concerning the cause of death is often obscured by the manner in which the verdicts of coroners' juries are worded and consequently this information is lost for purposes of vital statistics. It is much to be regretted, writes Dr. Tatham, that the trustworthiness of the national registers should be thus impaired, for a large share of the time of the Registrar-General's official staff is occupied in the endeavour to maintain the efficiency of registration.

In the year 1881 a useful system of confidential inquiry was established for ascertaining the true cause of death in the large number of instances in which the cause had been certified so vaguely as to be useless for purposes of classification. The gradually increasing work of the statistical department has hindered the full development of this system; nevertheless, in the decennium ended 1900 more than 39,000 answers were received to letters addressed to medical practitioners as compared with 22,000 in the preceding decennium. In this connexion Dr. Tatham very gratefully acknowledges a substantial improvement in recent years, both in the character of the original medical certificates examined by him and in the value of the replies to his inquiries respecting doubtful cases. As a result of these inquiries there were added to the total mortality from puerperal sepsis and accidents of childbirth 2050 deaths, of which 932 had originally been certified as from peritonitis, 510 as from pyæmia or septicæmia, 151 from metritis, 178 from pelvic cellulitis, and 117 from hæmorrhage, in all these instances without mention of the puerperal condition. The deaths from cancer or malignant disease were increased by 6252, of which 5255 had been returned as from tumour, 574 as from stricture of the œsophagus, 42 as from hæmorrhage, 30 as from dyspepsia, and 22 as from atrophy, whilst 70 had been indefinitely returned as from surgical diseases. The deaths from tuberculous diseases were increased by 1344, of which 717 had originally been certified as from tumour, 193 as from peritonitis, 124 as from atrophy, 52 as from pyæmia or septicæmia, and 36 as from surgical causes. It should be mentioned that with every one of the aforesaid letters of inquiry a circular is inclosed, containing a new list of diseases based on the recently issued nomenclature of the Royal College of Physicians of London, so that medical practitioners have ready at hand the latest official information respecting the classification of causes of death.

*(To be concluded.)*

# MIDDLESEX HOSPITAL CANCER RESEARCH LABORATORIES: SIXTH REPORT.

THE laboratories which have been established in connexion with the cancer wards of the Middlesex Hospital are carrying out many important investigations concerning malignant disease, and this, the sixth, report contains quite as much that is worthy of notice as any of its predecessors. While all the papers contained in it are valuable some of them are naturally of more interest than others. With the paper on the trypsin treatment of cancer we hope to deal next week.

Dr. Archibald Leitch has been working on the question of the presence of micrococci in tumours. Rapin in 1887 first described micrococci in carcinomata and Motz discovered them in sarcomata in 1894. In 1904 Doyen reported that a special micrococcus was to be found in tumours both malignant and simple. Metchnikoff has confirmed these observations and Dr. Leitch's paper is an account of the attempts which he has made to isolate this particular micro-organism from new growths. In all 33 tumours were examined; of these 15 were unulcerated mammary carcinomata; three were cases of carcinomata which were either ulcerated or which had been on an exposed surface; three specimens were sarcomata; four were simple tumours, two of them fibro-adenomata of the breast and two fibro-myomata of the uterus; and eight of the specimens were taken from animals, one being a breast carcinoma, two were tumours containing cartilage, one was an enlarged lymphatic gland, one a breaking-down granuloma, and three were transplanted tumours from mice. It will be seen that there was great variety in the tumours examined. Great care was taken that no infection of the tumours took place from without and culture tubes were inoculated. From these tubes a micro-organism was obtained, which was definitely a staphylococcus without any very special characters—at least, its characters are not sufficient to specify it. It was found in a very large proportion of the specimens examined, and except in the ulcerated or surface-exposed tumours it was a nearly pure growth. The real point of importance is that a coccus of certain characters is found in neoplasms. The question of the relation of this micrococcus to the new growth is entirely another matter. At present it can only be said that in a very large proportion of tumours, both innocent and malignant, a special micrococcus exists.

Dr. J. J. Douglas, working in the Middlesex Hospital Cancer Research Laboratory, showed three years ago that the blood of patients suffering from cancer has a lower specific gravity than the blood of normal individuals, the average difference being 0·007. Mr. C. W. Rowntree in the present report records some observations which he has made as to the difference of the specific gravity of the solid tissues in the bodies of cancerous patients and of those dying from other causes. The method employed was devised by Dr. W. S. Lazarus-Barlow. It consists in having layers of a watery solution of gum arabic with a little formalin to prevent the growth of moulds. The layers, which contain more or less gum, have different specific gravities and have very little tendency to mix, and to distinguish them alternate layers are stained with methylene blue. There is a difference of 0·002 in specific gravity between adjoining layers. A small piece of tissue is snipped off with sharp scissors, care being taken to bruise it as little as possible in order that the tissue fluids shall not be squeezed out. The piece of tissue is then placed in the uppermost layer of a series of gum solutions; it sinks rapidly at first and then more slowly until at last it comes to rest in the layer which has the same specific gravity as itself. The chief differences were found to exist in the case of spleen and voluntary muscle. Each of these tissues was found to have diminished about 0·003 in specific gravity. Mr. Rowntree comes to the conclusion that this reduction in specific gravity in cancerous cases depends not upon any specific change in the tissues themselves but upon the changes in the blood which have been shown to be present in carcinoma of all forms.

Dr. Victor Bonney, who is the Walter Emden Research Scholar, contributes a valuable paper on the connective tissues in squamous-cell carcinoma and in leukoplakia. He finds that in the earlier or more acute stages of leukoplakia there are large numbers of lymphocytes in the subepithelial tissue, especially at the tips of the interpapillary downgrowths of the epithelium, but their distribution is somewhat irregular. These lymphocytes invade the epithelium, intercalating themselves between the individual epithelial cells, especially in the Malpighian layer. In quiescent states the lymphocytes disappear. In squamous-cell carcinoma the lymphocyte is still more prominent, but its distribution is similar to that found in leukoplakia. Dr. Bonney does not think that these lymphocytes are derived from the pre-existing connective-tissue cells, as division by mitosis or amitosis is never to be observed in them. He considers that they are brought to the spot by the lymphatic capillaries. As to what happens to them he is in more doubt; certainly they take no part in the formation of the stroma of the growth. He thinks that the lymphocytes are pushed back by the advancing epithelial cells. In the acute stages of leukoplakia and in squamous-cell carcinoma Dr. Bonney finds plasma cells present in great numbers, mixed with the lymphocytes. The plasma cells proliferate, chiefly amitotically, but the proliferation is best seen at a little distance from the epithelial cells. He is unable to suggest any very likely source for the plasma cells, but he feels sure that a local proliferation is responsible for the great number present, for delicate processes unite them to other plasma cells and therefore it is very improbable that they have been brought to the affected spot. The plasma cells probably become fibrous tissue cells and the dense fibrous tissue is probably largely due to the deposition of collagenous material around a framework of elongated plasma cells and fibroglia fibres. Dr. Bonney thinks that the fixed connective-tissue cells play an unimportant part in the tissue reaction accompanying leukoplakia and squamous-cell carcinoma, though it is possible that they give rise to plasma cells. The other chief changes seen in the invaded tissues affect the fibrous tissue. There is a disappearance of much of the collagenous matrix; this rarefaction is mainly due to the plasma cells, which by their proliferation produce rifts in the homogeneous collagenous matrix. This occurs at some little distance in advance of the epithelial downgrowths. Both in leukoplakia and in squamous-cell carcinoma there is an early and permanent disappearance of the yellow elastic tissue. These histological results are of great importance and increase our knowledge greatly of the changes occurring in the tissues invaded by leukoplakia and by carcinoma.

Dr. Lazarus-Barlow has contributed a very elaborate paper on the Retardation of Electroscopic Leak by means of recognised radio-active and certain other substances which have been supposed to bear a causal relationship to definite varieties of cancer. The paper is based on an enormous number of experiments and we have only space for the chief conclusions. An aluminium disc which has been placed in proximity to a recognised radio-active substance has acquired a retarding action on the leak of an electroscope, and this is independent of the character of the electricity with which the gold leaves are charged. He has also shown that cholesterin, gall-stone, and paraffin wax have a similar effect, but pipe-clay accelerates the leak.

Dr. Lazarus-Barlow and Mr. Cecil R. C. Lyster have also made observations on electroscopic leak in the presence of aluminium and glass plates that have been exposed to x rays. They conclude that there is no alteration in the rate of leak.

We have given the substance of the chief papers in this report in order to show the importance of the investigations which are being carried out in these laboratories. The exact relation of many of these observations to the production or extension of cancer may not be obvious, but the more we learn about cancerous processes the more we are likely to become acquainted with the true etiology of malignant disease.

---

THE CUMBERLAND INFIRMARY.—The sixty-sixth annual report of the Cumberland Infirmary shows that that institution is in a prosperous condition, the debit balance on the general account having been reduced to £179, whilst the capital account received an addition in legacies during last year of £1624. 1127 in-patients and 2540 out-patients were treated; the cost per bed per day has been reduced from 3*s*. 3¾*d*. to 3*s*. 0½*d*. It is proposed to institute an ophthalmic department of the infirmary and two surgeons are to be appointed to it. The vacancy in the presidency of the infirmary caused by the death of the late Sir Wilfrid Lawson, Bart., has been filled by the election to the post of the Right Rev. the Lord Bishop of Carlisle.

# THE PAYMENT OF MEDICAL MEN SUMMONED BY MIDWIVES TO THEIR ASSISTANCE.

THE attention of medical men has frequently been called to the grave defect in the working of the Midwives Act of 1902, caused by the fact that although a midwife is bound by the Act to summon a medical man to take charge of a case of difficult labour, yet no provision is made under the Act for the payment of his services. In cases of poverty, where the patient is entitled to charitable relief, the difficulty has not been so serious, but in many instances medical men have attended knowing full well that no fee would be recoverable and have given their services as charity with the knowledge that if they failed to do so they would risk public censure for heartlessness. Certain boroughs, such as Liverpool and Cardiff, have adopted schemes by which, in some circumstances, the borough became responsible for the fees due; in this they have more freedom than the county councils the accounts of which are under strict central control. The latter have only been able to suggest that medical men should seek to recover from local boards of guardians, a very feeble guarantee of repayment. The latest council to take action is that of the borough of St. Helens which has adopted the scheme which we print below, the power for which it finds under Section 133 of the Public Health Act:—

The council of the county borough of St. Helens is prepared to make certain payments to medical practitioners called in under Section E 18 and E 19 of the rules framed by the Central Midwives Board, under Section 3, I., of the Midwives Act, 1902. (2 Edw. 7.c.17.) These payments will be made only on the written application of the medical practitioner after consideration and investigation by the health committee of the council. In determining which cases shall come under this scheme the health committee will take into consideration: 1. Nature of case. 2. Inability of medical man to recover his fee.

1. *Nature of the case.*—The expenses of medical attendance will be paid only when there is great urgency, and under Section E the cases of urgency will include: 19 (1) The whole sub-section; 19 (2)b when there is loss of blood; 19 (3) the whole sub-section; 19 (4) secondary post-partum hæmorrhage; 19 (5) dangerous feebleness of the child; but all other cases when there is undoubted urgency and danger to either mother or child shall be included whether mentioned in the foregoing list or not.

2. *Inability of medical man to recover his fee.*—The medical man is required to take reasonable means to secure his fee before applying to the health committee. The fee will be paid only on the written declaration of the medical attendant that he has been unable to obtain the whole or any part of it from the patient, and shall be wholly or partly repayable by the medical attendant to the council if subsequently whole or part payment be made by or on behalf of the patient. The medical attendant shall also be required to give a description of the case, and the treatment adopted, on a prescribed form. (Copy attached.) The fee for attendance on all cases of urgency and danger to either the mother or the child shall be on the scale of 5*s.* for a visit, or £1 1*s.* when operative interference is required and has been carried out. The fees are not cumulative and the fee in any one case shall not exceed 5*s.* when operative interference is not required and £1 1*s.* when an operation has been required and carried out. Any claim for an additional fee must be made in writing, and will be considered by the health committee on its merits. Nothing in this scheme shall be held to bind the health committee or the council to pay the fees of any medical attendant in cases which they, after investigation, shall for any reason whatsoever deem unsuitable. The health committee reserve to themselves the right of withdrawing or amending the scheme. W. H. ANDREW, Town Clerk.

Town Hall, St. Helens, June 5th, 1907.

The following is the form that must be filled up and returned to the council by the medical man who makes the claim.

THE MIDWIVES ACT, 1902.

*To the Health Committee of the County Borough of St. Helens.*

I hereby certify that on..............................................................

at..................P.M. A.M. I was called in at the instance of a midwife ...........

to attend......................................at ...............................................

The reason given on the paper furnished by the midwife for calling me in was...................................................................................

The case was one of urgency and I found the following conditions requiring medical assistance:—.......................................................

.............................................................................................

The treatment which I adopted was briefly as follows:— ...................

.............................................................................................

.............................................................................................

I hereby declare that I have failed to obtain my fee in whole or part for this attendance, and that I have taken reasonable means to secure it. I further undertake to refund to the council any payment made to me with respect to this attendance, should whole or part payment be made to me by or on behalf of the patient.

.......................................................................

Address.......................................................

Date...............................................

This form duly filled up and signed by the medical practitioner must be sent to the Medical Officer of Health, Town Hall, St. Helens, within six months of the date of the attendance.

# THE HAMPSTEAD GENERAL HOSPITAL.

RECENT events in connexion with the constitution of the staff at the Hampstead General Hospital have led to a situation that threatens to become almost an *impasse* and as they involve principles of the greatest importance to all suburban hospitals and to medical men a short statement of the facts will be useful.

The Hampstead Hospital was founded in 1882 as a small nursing institute, with the title of the Hampstead Home Hospital. The late Dr. Heath Strange associated with himself several local medical men as a staff and until his recent death took the greatest interest in the affairs of the institution. There were no free beds until 1893, when a few were added, and three years later an out-patient department was started which was the first step that brought on the institution the criticism of practitioners in the neighbourhood who were not on the staff. In 1905 the hospital was moved into a fine new building that had been erected on Haverstock-hill with 64 beds but the move had not the cordial support of the local profession, many of the members of which consider that Hampstead does not require so large a hospital. In spite of this feeling the council of the hospital—as the board of management is styled—during 1906 proceeded with the erection of two new wings, which was made possible by a donation of £20,000 from Sir Henry Harben, and one of £5000 from King Edward's Hospital Fund for London, and new out-patient buildings were also erected. The hospital is administered by the council, on which all the six members of the medical staff have seats, although of course the lay representation has a strong majority. The staff consists of four medical officers and two assistant medical officers, all of whom are local practitioners and make no claim to what is generally known as a purely "consultant" practice. It must be said at once that on all sides it is admitted that these gentlemen carry out their duties in an exceedingly efficient and skilful manner and the question at issue is one of principle entirely and not of personality. Up to the present time they have had exclusive charge of the free beds and the out-patients but have shared the right of treating their own private cases in the dozen or so paying beds with any other practitioner who chooses to apply for such a bed in which to treat a private case, preference being given to patients coming from Hampstead, Highgate, Hendon, or the neighbourhood. The new wings when open will give a total accommodation of about 110 beds and the number of paying beds will be increased.

It is about the free beds that the chief trouble is centred. When the hospital was moved to its present site a good deal of local feeling arose on several counts; one was that the staff derived an undue local prestige from their official position, but the chief trouble was the hostility of the local profession against the out-patient department. During May, 1906, the local branch of the British Medical Association convened a meeting of neighbouring practitioners who carried the following motions and a committee was formed to promote their enforcement:—

1. That an out-patient department in Hampstead is unnecessary.
2. That the casualty department be kept distinct from any other department and that casualty patients, if not suitable for admission, be seen once, and thereon be referred to private practitioners, provident dispensaries, or Poor-law authorities.
3. That there be greater facilities for general practitioners of the neighbourhood to attend in-patients.
4. That there should be a service limit, as well as an age limit, to appointments to the medical staff.
5. That the outside medical profession be adequately represented on the board.
6. That it is desirable, both in the interest of the district and of the hospital itself, that the Hampstead Hospital be carried on as a purely local institution, and not as a large general hospital, and that therefore an acting staff of consultants is not in accordance with the spirit of its constitution.

These were forwarded to the council of the hospital but they did not receive the support of the hospital staff and they cannot be said in themselves to have carried much weight. Neither can the indefinite expression of opinion in answer to a circular sent out by the council to the local profession asking for an expression of opinion on the constitution of the staff be said to have influenced the result materially. It will be seen that the last resolution deals with the introduction of a staff of consultants, and it is over that point that the present critical position has arisen; it is the point that makes the situation a test-case for similar hospitals. Up to the present there have been a few consultant members of professional eminence on the Hampstead staff, but their office has been just as much of a sinecure as that of a consultant member of the staff of any London general hospital. The King Edward's Hospital Fund for London had intimated to the council of the hospital when it attained its present importance that it would be well advised to change the constitution of its staff from local practitioners to "consultants," although it is noteworthy that the Fund has never committed itself to the definition of a consultant. During 1906 the council considered the matter and it was this event that brought about the meeting and resolutions to which we have referred above. The council appointed a special committee to consider the subject, which reported on February last "that this committee is of opinion that it is desirable to appoint a staff of four consultants of high standing (two surgeons and two physicians), but that under the special circumstances of the Hampstead General Hospital it is important to retain the coöperation on the medical staff of medical men residing in the neighbourhood of the hospital." At the end of last year matters were hurried on by a new factor. The North-West London Hospital was in such severe financial difficulties that it was suggested to close it. The King's Fund, however, took the matter in hand and proposed to the Hampstead Hospital that they should amalgamate and carry on their out-patients department at the North-West London Hospital, where there had been an out-patient practice of about 123,000 a year, whilst the Hampstead attendances of out-patients did not much exceed 21,300. The Fund promised the Hampstead Hospital £1500 a year and other benefits resulting from the amalgamation, but the offer was absolutely conditional on the replacement of the staff by the undefined "consultants" and the inclusion of certain members of the North-West London Hospital staff. After much negotiation the Fund agreed to retain the present medical officers for a period of 18 years from the time of their original election, giving them terms of from five to seven years to run, but it would not agree to the subsequent promotion of the assistant medical officers, although one of these gentlemen holds the Fellowship of the Royal College of Surgeons of England. In fact, it laid down the absolute rule that in future the staff must be "consultants" and not local practitioners, however capable these may be. The hospital council, without referring the matter of amalgamation or staff constitution to the general body of governors, has accepted the terms, including the appointment of three members of the North-West London Hospital staff. The condition precluding the present assistant officers from promotion was the last concession made to the King's Fund and was only carried by one vote, and subsequent events have proved that the council was divided on many points. Meanwhile the local profession as represented by the British Medical Association had been active; a conference was held between its 1906 committee and members of the staffs of the two hospitals concerned, where it was agreed that there was no objection to amalgamation under certain very clear conditions regulating the out-patients and insuring a good local professional representation on the staff and the committee. A meeting of the profession was convened on May 24th to consider these recommendations and so far from supporting them unanimously a motion that the amalgamation was undesirable was only lost by the casting vote of the chairman. At this time the staff of the hospital were trying to support their council as far as they reasonably could in a most trying and delicate position and the local profession were handicapped in their endeavours by not having the staff with them. When, however, the council made its final surrender to the King's Fund the staff decided to make common cause with their outside brethren and at a well-attended professional meeting on July 3rd, under the auspices of the local branch of the British Medical Association, Dr. E. Collingwood Andrews on behalf of the staff rehearsed the position and announced that his colleagues and he had decided to support the motion before the meeting:—

> That this meeting considers the Hampstead General Hospital should always have a staff of local practitioners, and in consideration of this opinion calls upon the members of the medical profession to refuse to accept any office on the staff on terms which are not considered satisfactory by the local profession.

He, moreover, announced that a special meeting of governors and subscribers of the hospital had been convened for July 16th who would be asked to rescind the council's decision and to vote for the continuance of an acting staff of local men with an increased consulting staff. Dr. Andrews, it is suggested, minimised the financial support brought by the North-West London Hospital to the amalgamation scheme, but though an important matter it does not affect the position brought about by the proposals. If these are not carried the staff will resign in a body; if they are carried it appears that the amalgamation scheme will fall to the ground, but we understand that the hospital will not thereby lose the support of the King's Fund. The meeting received the attitude of the staff very favourably, although one or two gentlemen tried to confuse the issue with the out-patient controversy. The resolution was carried *nemine contradicente* and there the matter rests until the meeting of hospital governors has been held. We have only had space to indicate the outline of the matter and shall acquaint our readers with the issue in due course. It is impossible to foretell what this may be as the situation is one of extreme difficulty. There is no doubt, however, that the local profession has had its influence greatly strengthened by the support of the hospital staff. We trust that the governors at the approaching meeting will not be swayed by personal considerations but will record their decision in what they conceive to be the true interests of the hospital's welfare.

## MEDICINE AND THE LAW.

*Attempted Suicide and the Police at Chelmsford.*

A CURIOUS and unaccountable attitude appears to have been adopted by the police authorities at Chelmsford, according to the evidence given at an inquest held there recently. The deceased, a carpenter, had become insane and had cut his throat in the street. He was taken by the police while still alive to the Chelmsford Infirmary and was there attended to, but was not allowed to remain as an in-patient because the police authorities at Chelmsford refuse to permit a constable to remain in the infirmary in charge of a person who has attempted suicide and the authorities of the Chelmsford Infirmary naturally and rightly decline to entertain such patients without police assistance. On the occasion in question the deceased, after receiving surgical aid at the infirmary, was taken by the police to the workhouse infirmary, but there he was refused admission, equally rightly, because he was not a proper subject for poor relief. A medical man who appears to have been summoned to attend him at his home found that his condition required that he should be treated in a hospital, and interesting himself vigorously in the matter persuaded the guardians to stretch a point and to allow him to be admitted to the workhouse infirmary. The guardians passed a special resolution that he should be taken in, but an hour after his arrival he died. The jury at the inquest had before them correspondence between the infirmary board and the police which passed in 1904, in which the board intimated that it could not undertake the care of those who had attempted to commit suicide without the assistance of the police, to which the chief constable had replied that he could not instruct the police not to take a patient whose life was in danger to the infirmary if that was the nearest available place, but that it would be detrimental to the public service to allow his men to remain there. They had also evidence to the effect that the institution had no male attendants to take care of such cases as that described and that would-be suicides were admitted to London hospitals only because the police always remained in charge of persons for whose safety they were directly responsible. In reply to this the deputy chief constable is reported to have made the statement that "there is no power to put the police in charge." The jury at the conclusion of the inquest returned a verdict of suicide during temporary insanity, with a rider that the guardians should have been notified of the correspondence between the police and the infirmary, that the guardians were greatly to blame, and that the relieving officer was not to blame as he had only done his duty. Such censure seems to be undeserved and misplaced. The guardians of the union appear to have acted with humanity and to have done their best for the deceased when they were fully informed that his life was in danger, although, strictly speaking, he would not in other circumstances have constituted a case for treatment under the Poor-law. The cause of the delay in placing this unfortunate man where he could best be taken care of seems to have been due to the attitude of the police, which must surely be unusual. It is their duty to remain in charge of a person who is in their custody in consequence of the crime he has committed in attempting to take his own life and it is equally their duty to afford him the best chance possible of having his life saved. A visit to a few of the London hospitals would soon convince the police of Chelmsford that there is "power to put the police in charge," and that it is very frequently done in the metropolis, where the Home Office would quickly interfere if such a course were a wrong one to adopt and detrimental to the public service. Even with a constable remaining present to render assistance if needed the desirability of admitting an insane patient must be one for the consideration of the hospital committee, to be determined according to the patient's condition. Without such assistance it would be wrong for the hospital to undertake a responsibility to a large extent outside its province.

### *Parental Liability.*

The *Journal of the American Medical Association* records an interesting case in regard to the liability for fees incurred by a parent who had requisitioned the extraordinary services of a medical man on behalf of his adult son. The plaintiff sued for $16,000 as a reasonable remuneration for having been in constant and exclusive attendance on the defendant's son for 40 days before his death. He had been summoned for this purpose by an urgent telegram from the father, which the plaintiff contended constituted an implied contract of liability for reasonable fees. The defence was that from $4000 to $6000 was an ample fee for the services rendered. The plaintiff secured a verdict for $12,666. The defendant, however, moved for a new trial on the ground of error in the instructions and that the verdict was excessive, and this was sustained by the trial court. The Supreme Court has affirmed this order. The decision was embodied in a lengthy judgment which affirmed, *inter alia*, that the jury had been wrongly instructed when told to take into consideration the defendant's wealth and the plaintiff's general professional reputation when assessing the award.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, July 11th, 1829.

### REMUNERATION TO MEDICAL WITNESSES.

*To the Editor of* THE LANCET.

SIR,—Can you or any of your numerous readers inform me, whether a regularly educated medical man, a member of the College, &c., who is called to the case of a drowned person, uses every means to restore to life the said drowned person, and afterwards is obliged to attend the inquest upon the body; whether this medical man is not entitled by law to some remuneration? In asking the question, I speak feelingly, having been called to several cases of this kind, and, indeed, I was called up in the middle of the night to one, only the early part of this week.

I remain, Sir,
Your obedient servant,
HORATIO COLLMAN.

6, London Terrace, Hackney Road,
June 27th, 1829.

Such is the disgraceful state of the law regarding the medical profession, that a medical man, thus circumstanced, cannot legally recover compensation for his time and trouble!—ED. L.

# VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8255 births and 3853 deaths were registered during the week ending July 6th. The annual rate of mortality, which in the successive weeks of last quarter had declined uninterruptedly from 17·9 to 12·5 per 1000, was again 12·5 in the week under notice. During the 13 weeks ending June 29th the death-rate in these towns averaged 15·1, the rate in London during the same period being 14·6. The lowest rates last week in the 76 towns were 4·1 in Walthamstow, 5·2 in Hornsey, 6·0 in Northampton, and 6·2 in King's Norton; the highest rates were 18·4 in Sunderland, 18·5 in Bolton, 18·6 in Bury, 18·9 in Blackburn, 19·6 in Burnley, and 20·0 in Middlesbrough. The 3853 deaths in the 76 towns were seven in excess of the number in the preceding week and included 366 which were referred to the principal epidemic diseases, against 430, 365, and 427 in the three preceding weeks; of these, 130 resulted from measles, 109 from whooping-cough, 47 from diarrhœa, 41 from diphtheria, 32 from scarlet fever, and seven from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered in Willesden, Southampton, Plymouth, Northampton, Devonport, or in ten other of the 76 towns; the annual rates from these diseases, however, ranged upwards to 3·1 in Blackburn, 3·3 in Derby, 3·7 in Bolton, 5·3 in Wigan, and 5·4 in Walsall The 130 fatal cases of measles showed a decline of 28 from the number in the previous week, the highest annual rates therefrom being 1·8 in Hull, 2·3 in Bolton, 2·5 in Derby, 3·5 in Wigan, and 4·9 in Walsall. The 109 deaths from whooping-cough were 27 fewer than the number in the preceding week, the death-rates from this disease ranging upwards to 1·0 in Leeds, 1·1 in Bolton, 1·4 in Merthyr Tydfil, 1·8 in Wigan and in Bury, and 1·9 in Tynemouth. The fatal cases of diarrhœa, which had been 50, 53, and 51 in the three preceding weeks, declined to 47 in the week under notice. The 41 deaths from diphtheria exceeded by 11 the number in the preceding week, the greatest proportional mortality from this disease being recorded in Huddersfield. The deaths from scarlet fever, which had been 32 and 40 in the two preceding weeks, declined again last week to 32. The seven fatal cases of "fever" included two in Liverpool and two in Burnley. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2936, 2985, and 3022 at the end of the three preceding weeks, had further risen to 3193 at the end of last week; 504 new cases were admitted during the week, against 389, 414, and 422 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 156 in each of the two preceding weeks, declined last week to 148, but were 18 in excess of the corrected average number in the corresponding week of the previous five years. The causes of 31, or 0·8 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, and in 56 other of the 76 towns; the proportion of uncertified deaths, however, showed a marked excess in Liverpool, Birmingham, Sheffield, Gateshead, and St. Helens.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 17·3 and 15·0 per 1000 in the two preceding weeks, further declined to 14·5 in the week ending July 6th, but was 2·0 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·2 in Greenock and 11·7 in Aberdeen to 15·3 in Glasgow and 19·3 in Leith. The 504 deaths in the eight towns showed a decline of 18 from the number in the preceding week, and included 59 which were referred to the principal epidemic diseases, against 84 and 76 in the two preceding weeks. These 59 deaths were equal to an annual rate of 1·7 per 1000, which exceeded by 0·5 per 1000 the rate from the principal epidemic diseases in the 76 English towns; they included 18 which were referred to whooping-cough, 18 to "fever," 10 to diarrhœa, six to diphtheria, five to measles, and two to scarlet fever, but not any to small-pox. The deaths from whooping-cough, which had declined from 57 to 34 in the four preceding weeks, further fell last week to 18, of which ten occurred in Glasgow, three in Edinburgh, three in Dundee, and two in Aberdeen. The fatal cases of "fever," which had been 14 and 21 in the two previous weeks, declined again to 18 last week, and included ten of cerebro-spinal meningitis in Glasgow, three in Edinburgh, and three in Leith. The deaths from diarrhœa, which had been 23 and 13 in the two preceding weeks, further fell last week to ten, of which six were registered in Glasgow and two in

Leith. The six fatal cases of diphtheria showed an excess of three over the number in the previous week, and included four in Glasgow, where the five deaths from measles also were recorded. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had declined from 106 to 72 in the four preceding weeks, rose again last week to 80, and exceeded by 28 the number in the corresponding period of last year. The causes of 24, or 4·8 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·8 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 24·3, 20·8, and 19·5 per 1000 in the three preceding weeks, further declined to 18·3 per 1000 in the week ending July 6th. During the 13 weeks ending June 29th the death-rate averaged 25·4 per 1000, the rates during the same period being 14·6 in London and 17·1 in Edinburgh. The 137 deaths of Dublin residents registered during the week showed a decline of nine from the number in the previous week, and included 19 which were referred to the principal epidemic diseases, against 19 and 11 in the two preceding weeks; of these, nine resulted from whooping-cough, six from measles, two from scarlet fever, one from diphtheria, and one from "fever," but not any from small-pox or from diarrhœa. These 19 deaths were equal to an annual rate of 2·5 per 1000, the death-rate last week from the principal epidemic diseases being 1·1 in London and 0·5 in Edinburgh. The deaths from whooping-cough, which had been five and eight in the two preceding weeks, further rose last week to nine; while the deaths from measles numbered six, against three, nine, and one in the three previous weeks. The 137 deaths from all causes in Dublin last week included 24 of children under one year of age and 32 of persons aged upwards of 60 years; the deaths of infants were equal to the number in the preceding week, while those of elderly persons were slightly in excess. Four inquest cases and four deaths from violence were registered; and 59, or 43 per cent., of the deaths occurred in public institutions. The cause of one death in Dublin last week was not certified; in London also only one death was uncertified; while in Edinburgh the proportion was 5·5 per cent. of the total deaths. The 144 deaths in Belfast last week included five which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon: C. M. Beadnell to the *President*, additional, for three months' course at West London Hospital. Surgeon: M. J. Laffan to the *Speedwell*, lent, temporary.

### ROYAL ARMY MEDICAL CORPS.

The notification regarding the retirement on retired pay of Lieutenant-Colonel John L. Hall, which appeared in the *Gazette* of June 7th, 1907, is cancelled.

### ROYAL ARMY MEDICAL CORPS (MILITIA).

Thomas Price Thomas to be Lieutenant (dated June 18th, 1907).

### VOLUNTEER CORPS.

*Royal Garrison Artillery (Volunteers)*: 2nd Durham (Seabam): Surgeon-Major David Todd, from the 1st Durham Royal Garrison Artillery (Volunteers), to be Surgeon-Major (dated May 29th, 1907).

*Rifle*: 3rd Volunteer Battalion, The Prince Albert's (Somersetshire Light Infantry): Surgeon-Lieutenant P. G. McReddie resigns his commission (dated June 4th, 1907). 2nd (Angus) Volunteer Battalion, The Black Watch (Royal Highlanders): Supernumerary Surgeon-Lieutenant-Colonel J. K. Anderson (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Black Watch Volunteer Infantry Brigade), is granted the honorary rank of Surgeon-Colonel (dated June 6th, 1907).

### NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on July 9th, Sir Inigo Thomas in the chair, the sum of £60 was distributed among the several applicants.

### EXAMINATION OF MAJORS OF THE ROYAL ARMY MEDICAL CORPS FOR PROMOTION.

The subjects selected for the year 1908 for the examination of Majors, R.A.M.C., for promotion to the rank of Lieutenant-Colonel are as follows: Subject 3 (*a*): The medical history of the more important campaigns and the lessons to be learnt therefrom; the medical history of the Afghan Campaign, with especial reference to the march from Cabul to Candahar; and the medical history of the advance of Lord Roberts to Bloemfontein. Books recommended: "Diary (Medical) of the March of the Field Force of Lieutenant-General Sir Frederick Roberts, V.C., G.C.B., from Cabul to Candahar" (Army Medical Department Report for 1879); "Special Report on the Hospital Organisation, Sanitation, and Medical History of the Wars in Afghanistan, 1878–79–80" (Army Medical Department Report for 1880); "Forty-one Years in India," by Lord Roberts, V.C., chapters 59–62 (thirty-fifth edition, 1902, Vol. II.); "Report on the Medical Arrangements in the South African War," by Surgeon-General Sir William D. Wilson, K.C.M.G., first 44 pages; "The *Times* History of the War in South Africa, 1899–1900," Vol. III., chapters 12 to 15 and chapter 17. Subject 3 (*b*)—A knowledge of the Army Medical Services of the more important Powers: The medical organisation of the French and Italian Armies, as described in the "Handbook of the Medical Organisations of Foreign Armies, 1902."

### ROYAL ARMY MEDICAL CORPS IN INDIA.

Under the Indian commands reorganisation scheme it is ordered that: (*a*) The appointments of principal medical officer, personal assistant to the principal medical officer, sanitary officer, and staff officer, Army Bearer Corps, in each command, and of sanitary officer and staff officer, Army Bearer Corps, in the Secunderabad Division and Burma will be abolished. (*b*) The principal medical officers of the three divisions will be surgeon-generals, their pay being fixed at 2200 rupees per mensem, consolidated. (*c*) Two temporary administrative posts will be created, each to be held by a colonel—viz: one for the Allahabad and the second for the Secunderabad brigades, infantry and cavalry. (*d*) A colonel will be appointed deputy to the principal medical officer of His Majesty's forces in India, his pay being fixed at 1800 rupees a month, consolidated. (*e*) A sanitary officer will be appointed in each office of the nine divisions and in Burma, the staff pay being fixed at 300 rupees per mensem. (*f*) A staff officer for medical mobilisation stores will be appointed in each of the nine divisions (excluding Burma), the staff pay being fixed at 300 rupees per mensen. (*g*) Owing to the above changes the establishments of medical services in India will be reduced by a number of officers corresponding to the number of cadre appointments abolished. (*h*) Existing lady superintendents will, under the orders of the principal medical officer of His Majesty's forces in India, be distributed to the charge of four circles, as follows: First Circle, comprising Peshawur, Rawul Pindi, and Lahore Divisions; Second Circle, comprising Meerut and Lucknow Divisions; Third Circle, comprising Quetta, Mhow, and Poona Divisions; Fourth Circle, comprising Secunderabad Division and Burma. (*i*) Orders regarding the disposal of clerks and establishments of the medical division officers at command headquarters will be issued by the principal medical officer, His Majesty's forces in India.

WEST AFRICAN MEDICAL STAFF.—The first dinner of the West African Medical Staff took place on July 3rd at the Trocadéro Restaurant. There was a large attendance of medical officers, including Dr. W. T. Prout, C.M.G., late principal medical officer of Sierra Leone, who presided; Mr. W. H. Langley, C.M.G., principal medical officer of the Gold Coast; Mr. R. M. Forde, principal medical officer of Sierra Leone; Dr. Hood, principal medical officer of Gambia; Mr. E. Langley Hunt, C.M.G., and others. After the toast of "His Majesty the King" had been honoured, Dr. Prout proposed, "Success to the West African Medical Staff dinner and prosperity to the Staff," and briefly pointed out the advantages of such social gatherings in promoting a feeling of union and cohesion among the members of the staff. It was decided that a dinner should be held twice a year, the next one to take place on the last Wednesday of January, 1908.

# Correspondence.

"Audi alteram partem."

## THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

*To the Editors of* THE LANCET.

SIRS,—In 1884 it occurred to some medical men that the too frequent sending round of the hat on behalf of members of the profession who were incapacitated by illness or accident could best be obviated by the founding of a society formed for, and managed by, medical men only.

Accordingly the Medical Sickness and Accident Society was started. Membership was confined to registered medical men and licentiates of dental surgery practising in the United Kingdom. For an annual contribution, varying with the age of entry from about £6 at the age of 21 years to about double that amount at the age of 50 years, members secure a weekly allowance of £4 4*s.* while they are prevented by any kind of illness or accident from performing professional work. The full amount may be drawn for 26 weeks and after that half pay is allowed for any period of disablement right up to the age of 65 years. From the commencement the society has been a great success. Over 400 members joined at once in 1884 and the membership has grown until last year it amounted to 2488. The society was registered under the Friendly Societies Act and thus has no shareholders, so that all the funds belong to the members. The committee of management, selected by the members, give their services gratis, and in every way the society is worked with great economy. It has paid to its members over £100,000 in sickness claims and has now a reserve fund of over £200,000.

It would be difficult to estimate the amount of benefit which the members have derived from its operations. Year by year the amount of sickness pay disbursed has grown from a few hundreds in 1884 to £11,494 in 1906. Letters received at the office show how much this sick pay is appreciated by the members. In all cases it lessens the inconvenience caused them by the loss of professional earning; in not a few it has saved them from serious embarrassment; and in some it has stood between them and actual privation. More particularly is it found valuable in those cases where there is little or no hope that the member will ever again be able to do professional work. In such cases the society provides a practically permanent provision generally amounting to £109 4*s.* a year, and over a score of members are now drawing these annuities. Less than 5 per cent. of the premium income has been spent in management and the savings thus effected enable the committee to pay a handsome cash bonus to members reaching the age of 65 years. In all more than £12,000 has been returned to the members in cash bonuses.

The society has no agents and pays no commission for new business. It has grown steadily through the natural canvassing of the many members who have enjoyed its benefits. The registered office is at 33, Chancery-lane, London, W.C.

I am, Sirs, yours faithfully,

Walthamstow, July 2nd, 1907. ST. CLAIR B. SHADWELL.

## THE SANDGATE "SANATORIUM."

*To the Editors of* THE LANCET.

SIRS,—You will understand that as one of the persons mainly responsible for the Sandgate Sanitary Powers Act I have been greatly interested in your recent articles upon this subject.

I should like in this place to repeat the advice which I gave to the Sandgate council—viz., that their proper course was to refuse to license the hospitals. I am convinced that if this course had been followed the present nuisance would by this time have ceased to exist and that the fear of compensation which dominated the minds of the council would have been found to be as groundless as most fears which are met boldly and conscientiously. Unfortunately, in the face of ignorant and captious criticism within and without the council, the latter lacked the courage of what I believe to have been their convictions.

My main object in writing to you is, however, to comment upon the last paragraph of the article in THE LANCET of June 29th. An ironical excuse is there made for the masterly inactivity of the Local Government Board, and my fear is lest the matter-of-fact mind should fail to perceive the irony. In Sandgate a special law prevails, made specially for Sandgate in circumstances confined to Sandgate. The object of the particular legislation was to get rid of a nuisance; the machinery to be employed was a code of regulations. Private interests were safeguarded by a compensation clause in the special Act. If, therefore, the regulations proposed by the council would result in closing the homes, where would be the objection in principle? What general precedent would this establish? Surely none except that a law made avowedly for a specific purpose should be honestly enforced. The excuse put into the mouth of the Local Government Board that "regulations which would have led to the closing of all homes at Sandgate, if applied generally, would cause the abolition of half the hospitals for tuberculosis in the country" rests for its speciousness upon the words *if applied generally* and therefore ex-hypothesi the excuse fails.

The fact is that the Local Government Board has made up such mind as it possesses that the Act shall remain a dead letter until such time as the Board shall see fit to bring forth a general measure of its own. I ask, is this honest? People complain of so-called judge-made law: with how much more reason might they complain of departmentally stifled laws?

What has Sandgate, what has the nation at large to expect between departmental dishonesty and departmental ineptitude? The fault lies, as your Special Commissioner long ago pointed out, in the political and partisan constitution of the Local Government Board.

I am, Sirs, yours faithfully,

Sandgate, July 2nd, 1907. L. J. D. BROCKMAN.

## SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.

*To the Editors of* THE LANCET.

SIRS,—I have pleasure in answering the queries which Dr. J. Cunningham Bowie has put to me at the conclusion of his letter to you which appears in THE LANCET of June 29th.

1. The current for the primary is from the main and its voltage is 250. The ampèrage to the primary varies, not only according to the amount of output desired but also according to the form of interrupter used. When a fairly full dose is to be given I use my Gaiffe jet interrupter with a current of from two and a half to three ampères. When a specially small or specially large dose is required I use the friction break, with a minimum of two or a maximum of six ampères.

2. The maximum voltage of my high-frequency apparatus I calculate at about 80,000, whilst the maximum current obtainable is from 700 to 800 milliampères. I seldom apply more than 500 milliampères.

3. When measuring the potential difference between any two points of the body, as hand and forearm or neck and groin, a metallic electrode is applied to each point, and these are connected by a wire to either side of the spinthermeter, and the greatest distance across which a spark can leap is taken as the potential difference in millimetres between these parts of the body of the patient. In measuring the current to zero from any region of the body a metallic electrode is applied to that region and connected by a wire to the water main of the house, the high frequency milliampère meter being in series—that is, between the electrode and the water pipes.

4, 5, and 6. It may simplify matters and prevent repetition if I reply to these questions together. In the case of the potential difference measurement the external circuit is, of course, in parallel with the circuit between the points being measured. In the case of the measurement of the current to zero the external circuit is shunted off to earth from the point which is having its milliampèrage measured and therefore this circuit may be said to be in parallel with the parts of the body of the patient beyond this point. It is possible that a diagram may be necessary to explain this fully, but I hardly think so.

Dr. Bowie must have observed that I have dealt in my paper with the effects of high-frequency currents not according to either the quantity or the quality—voltage, &c.—of

the current but simply as high-frequency currents, and have shown that the physiological effects may differ with varying conditions of the patient. The question as to the effects of various kinds of current I have referred to as important; but I have not attempted to discuss this point, preferring to leave it for future investigation by others as well as by myself. Dr. Bowie's knowledge of the subject and his obvious interest in it lead me to hope that he may help in this. Criticism of what has already been done is a good beginning.

I am, Sirs, yours faithfully,

SAMUEL SLOAN.

Glasgow, July 1st, 1907.

## THE SURGICAL TREATMENT OF CONSTIPATION.

*To the Editors of* THE LANCET.

SIRS,—The letter of Mr. J. Hopkins Walters in THE LANCET of July 6th, p. 48, would deserve a full reply if it were not intended as a defence of an author well able to take care of himself. Mr. Walters will see that if I allow myself to be drawn into a controversy with him, next week some fourth person may come forward, some unsilent worshipper of Mr. Walters, to declare that I have "utterly misconceived or misrepresented" his letter, that I "cannot have read" that letter, that I have placed him "on a pillory to be stared at or stoned," and so on. Then, in spite of the "rectitude" and "angularity" with which Mr. Walters credits me (why not call it "rect-angularity"?), I am really a very polite man and might reply to number four, which would call up number five, and so the struggle continue, descending from "great surgeons" to small, then to still smaller, until in ages to come microscopical surgical knights-errant might be bombarding a myth with emanations, infinitesimal but warm, like those of radium.

It is this consideration which prevents me from more than briefly referring to Mr. Walters's own interesting case. I note that in it the obstinate constipation seems to have come on immediately after a "nervous breakdown." I do not suppose, therefore, that Mr. Walters attributes it to any mechanical obstacle presented by the colon. It was with especial reference to excision of the cæcum that I said that "the condition of the appendix vermiformis" should be "always carefully noted." This is made clear by the context, from which Mr. Walters has removed the words, tacking them on to a preceding paragraph, and putting all between one set of inverted commas. This enables him to report with, as it were, a "there now!" that the appendix was found healthy in his case of simple ileo-sigmoidostomy. He has no wish to misrepresent, I am sure, it is merely a specimen of the light and careless touch by which "rectitude" and "angularity" can be avoided.

In reply to his question whether appendicostomy would have produced excellent results in this case I think it would. With regard to my admission that after appendicostomy the opening should be regularly catheterised he should remember that the mere use of the appendicostomy provides this catheterisation automatically. It is no more a serious drawback than the aperients and enemata to which his patient seems to have had to return after ileo sigmoidostomy.

I am, Sirs, yours faithfully,

C. B. KEETLEY.

July 6th, 1907.

## GROCCO'S TRIANGLE: PHYSICAL AND ANATOMICAL EXPLANATION.

*To the Editors of* THE LANCET.

SIRS,—I have read with pleasure Dr. F. W. Forbes-Ross's article on the above subject in THE LANCET of June 29th, p. 1773, and do not think that he need in any way apologise as a surgeon for his possession of a general knowledge of medicine. It is to be hoped that the specialist who prides himself upon his ignorance of matters beyond the sphere of his principal activity will become rare among us—is, I would fain hope, not common now. There are a few points in Dr. Forbes-Ross's paper and Dr. W. Ewart's letter in THE LANCET of July 6th, p. 49, which provoke comment.

In the first place, and with every disposition to do homage to those who add to our knowledge, there is manifestly an inconvenience in the use of a patronymic nomenclature of structure or disease. Surely it would be more informing were a term used which denoted a presumably recurrent condition rather than that such should be only appreciated by reference to a biographical dictionary or by more or less archæological research. "Grocco's triangle" is represented as being an area of communicated percussion dulness beyond or beside a medium of lower vibrational capacity than that through which it is conducted to the surface. I am aware that I am rather at variance with Dr. Forbes-Ross on this question of physics but do not propose discussing this point at present, as it is not material to the remarks I propose making.

"Grocco's triangle," if it be such as it is represented as being, is a *parachumatic* percussion dulness. I hope I may be forgiven for using so uneuphonious, yet, I think, quite correct a term, denoting beside or near (*παρα*) an effusion (*χυμα-ατος*). Parachumatic percussion dulness may be an all-important or an altogether subsidiary sign. In the cases referred to by Dr. Forbes-Ross and Dr. Ewart it is, I think it will be admitted, of little importance. The conditions stated to manifest it are abundantly evident from other signs. The cases mentioned by Dr. Ewart in which "amounts of (fluid) too small to be identified by any other means," are only thus discoverable must be of rare occurrence. The diagnosis, again, of enlarged bronchial glands in the posterior mediastinum in "incipient cases of tuberculosis" by a "sudden spread" of Grocco's triangle, as pointed out by Dr. Forbes-Ross, is, I confess, a refinement of diagnosis which extorts my admiration but also one which I should hesitate to accept as correct without more definite and other evidence. The chief circumstances in which parachumatic percussion dulness in the thorax may be of great importance are, in my experience, those attendant upon some cases of *subdiaphragmatic suppuration*. An abscess creeping up behind or above the liver and raising the diaphragm (as in Dr. Ewart's cases of ascites showing symmetrical paravertebral triangles of dulness) may be associated with parachumatic dulness at the right pulmonary base posteriorly and with obscuration of the respiration in the area of such dulness. The discrimination of this state from one of primary pleural or pleuro-pneumonic disease lies chiefly in the fact that the constitutional disturbance is out of all proportion to the local thoracic signs, while hepatic and abdominal evidences of the causal condition may be altogether absent. In these circumstances this parachumatic dulness, whatever its shape, is frequently pathognomonic of the serious subdiaphragmatic condition in question and a reliable guide to the measures indicated for the relief of the patient, which are, of course, surgical. In conclusion, Sirs, I hope these remarks will in no wise be regarded as expressing any want of appreciation on my part of the interest of Dr. Forbes-Ross's communication which has the charm of all anatomical elucidations.

I am, Sirs, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley street, W., July 6th, 1907.

## PROPOSED AMALGAMATION OF THE NORTH-WEST LONDON HOSPITAL WITH THE HAMPSTEAD GENERAL HOSPITAL.

*To the Editors of* THE LANCET.

SIRS,—I venture to ask if you will kindly allow me to correct the statement which Dr. E. Collingwood Andrews is reported to have made in his speech at the meeting of the Hampstead division, Metropolitan Counties Branch, British Medical Association, on July 3rd in reference to the assets which the North-West London Hospital might be expected to bring into the proposed partnership. Dr. Andrews would have his supporters believe that the only financial help to be given by the North-West London Hospital would be "to the extent of about £200 a year by subscribers." In this Dr. Andrews is very wide of the mark, and it is to be regretted that apparently there was no one at the meeting sufficiently well informed to correct this mis-statement.

As a matter of fact, my committee is prepared at this moment to hand over investments and cash balance at the bank to the amount of over £5500, with "stock in trade," which includes surgical instruments valued at £400. Last year (an average year) our annual subscriptions were £754, donations (apart from the King's Fund, the Hospital Sunday and Saturday Funds) £1128. Many of these donations may be regarded as regular income, although they do not appear under the heading of annual subscriptions. The average annual income for the past few years has been nearly £5000.

Besides all this there is the very generous promise of support from the King's Fund, in the event of amalgamation, by (1) contributing for five years the annual sum of £1500; and (2) guaranteeing the rent of the premises of the North-West London Hospital in the Kentish Town-road for ten years, and paying the cost of adapting these premises as an out-patients' department to the amount of £2000.

The question as to whether or not the Hampstead practitioners would suffer by the transaction is not one which should influence the public in their decision. The point at issue is, Will these charitable institutions, to which the public have so generously subscribed, be thereby benefited? To the unprejudiced mind there can be but one answer: both institutions will undoubtedly in the truest sense be strengthened and their sphere of usefulness extended. It should be remembered that in carrying out a scheme such as this there must of necessity be changes involving cases of individual hardship; this is especially the case here at the North-West London Hospital. But it is gratifying to know that every one whose personal interest is at stake, be he doctor or layman, is prepared to stand on one side rather than put the smallest hindrance in the way of an undertaking which we all believe to be on the whole a wise and beneficent one. I am, Sirs, yours faithfully,

ALFRED CRASKE, Secretary.

North-West London Hospital, Kentish Town-road, N.W.,
July 8th, 1907.

## PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

*To the Editors of* THE LANCET.

SIRS,—In your report of the proceedings of the Standing Committee on Mr. J. Wilson's Public Health Bill in THE LANCET of July 6th, p. 67, I am reported, probably owing to necessary condensation, as opposing the examination of children in elementary schools for infectious disease by the medical officer of health.

Clause 82 was so drawn that power would be given to the medical officer of health to make an extended physical examination of every child as well as to examine it for infectious disease. This was objected to, and Sir William Collins put down an amendment requiring that before any physical examination was made the written consent of the parent or guardian should be obtained. In supporting this amendment I pointed out that such written consent had usually to be obtained in secondary schools and I was opposed to the children of the poor being made to submit to a physical examination while the child of the richer parent would escape.

I am, Sirs, yours faithfully,

July 6th, 1907. GEORGE COOPER.

## AN ASPECT OF VACCINES AND ANTITOXINS.

*To the Editors of* THE LANCET.

SIRS,—The halo of individuality which modern science sheds round the agents submitted for special uses tends to limit observation within the lines suggested. It is open to doubt whether this is entirely good. Specially is it questionable in such remedies as are derived from the blood of man or animals. The vaccines, serums, and antitoxins may contain recognisable individual products which have specific uses, but their life-history and the mode of their production class them with possible family associations which may be serviceable under other and not always allied conditions. It is now everywhere admitted that the lymph which Jenner used in his vaccinations was not even bacteriologically pure; the admission is ample reason for all the research which has placed his operation on the sound basis which is the foothold of its present advocates. One, perhaps two, observations must have fallen to the lot of most medical men; the first, that vaccination performed in the early stages of some previously existent disease was frequently delayed, or prevented, in its evolution; secondly, that infantile eczema or impetigo was not a bar to successful vaccination, but rather that the successful vaccination was sometimes followed by a disappearance of the eczema. My own experience would tend to show that this result followed more frequently after the use of humanised lymph than with the more pure and individualised calf products. The eldership of vaccinia should have placed it in the forefront of individuality as regards its scientific purity. My object in this note is to call attention to some possible bye-products, or nuclein derivatives, which may exist in the next elder of the serums.

Some years since I was called upon to give a protective dose of the antidiphtheritic serum to several members of a family, one of whom was the subject of persistently recurring boils. To my great satisfaction the boils ceased immediately after the injection. The observation was too trite to be neglected. I offered to repeat the experiment in other cases of the same nature, as well as in cases of carbuncle. The results have convinced me that it is of great value and is usually successful. In some of my cases there was evidence of sugar in the urine, but I have not had the opportunity to use the serum in the carbuncles of confirmed diabetes. I tried it without success in the pustular rash which sometimes attends the continuous administration of bromides. We see so little septic disease in Guernsey that one's stock of antistreptococcic serum is apt to grow stale. Once I required some under these conditions and was shut off by a Sunday's post from obtaining more till the Tuesday. As a "do-no-better" I used the antidiphtheritic serum and with such good result that no other was required.

My first, and accidental, result was obtained from the use of 500 units, but in the selected cases I have used 2000 units. I have no hesitation in asking for an extended trial of it in cases of boils and carbuncles; all my patients have been most grateful. Once again, the use of antistreptococcic serum is somewhat disturbing in early childhood. An infant was born of a mother who died 14 days later from puerperal septicæmia in India. The child had an abscess opened near the anus before it fell under my care, and it had a purulent discharge from the ear as well as a maintained temperature, which if it seldom reached above 100° F. also failed to touch the normal lower temperature of the day. After consultation with the uncle (who is an M.D., T.C.D.) I injected 500 units of the antidiphtheritic serum and the result was satisfactory. The ear discharge ceased, the temperature became normal, and the division of a small sinus near the anus restored the infant to perfect health. There is no finality in these results; they only raise the question of a limited individuality of the serums and perhaps suggest the lines of search for their family relationships.

I am, Sirs, yours faithfully,

Guernsey, June 21st, 1907. J. AIKMAN, M.D. Glasg.

## MSS. OF JOHN HUNTER'S LECTURES.

*To the Editors of* THE LANCET.

SIRS,—I possess a volume described on the back as "Hunters Surgery MS." which appears to be different from any which you have mentioned. It is written throughout in the first person (and beautifully written), contains 67 lectures, 422 quarto pages, with five more pages of index. The only indication of its date might be found in the following passage in the beginning of the first lecture: "This course will consist of about eighty lectures in wch (*sic*) I shall differ very much from what is taught in books upon this subject. I do not undertake to advance anything but what is built upon my own observations made in an attentive practice of 40 years and upwards." The index is a most careful *précis* of each lecture—for example, lect. 13—

> Acquir'd Hereditary causes (of disease), Effects of y$^{e}$ mind on disease, Involuntary act$^{n}$ of voluntary parts, Symptoms, Anomalous symptoms, the difference in y$^{e}$ power of resist'g disease in y$^{e}$ different Structure of parts.

I would not like to part with the volume, which I regard as a precious heirloom, but if it is original the R.C.S. must have it. I am, Sirs, yours faithfully,

Southport, July 6th, 1907. COLIN CAMPBELL.

## THE APOTHECARIES ACT, 1907.

*To the Editors of* THE LANCET.

SIRS,—In view of the numerous inquiries I am receiving from those holding the diploma of the Society of Apothecaries as to the effect of the Act upon their diploma, may I be allowed to state that the result of the Act, so far as concerns those who have obtained the "L.S.A." since June 30th, 1887, is to enable them *on application to the Society* and on payment of the prescribed fee to have granted to them a diploma conferring the qualification of "Licentiate in Medicine and Surgery of the Society of Apothecaries." Subject to obtaining this new diploma from the society the qualification can be entered upon the Medical Register. The form of the new diploma and other matters connected therewith are at the present time under the consideration of the Court of Assistants of the Society, and I hope to be in a position to make a definite statement as to the Society's requirements in the course of next month.

I am, Sirs, yours faithfully,
A. MOWBRAY UPTON,
Clerk to the Society.

Society of Apothecaries of London, Blackfriars,
London, E.C., July 9th, 1907.

# SOME TURKISH LAZARETS

## AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(*With Reproductions of Photographs taken by the Author.*)

### X.[1]

### THE ABU-SAAD LAZARET.

*Position and Object of the Lazaret.—Question of its Transfer Elsewhere.—Proposed Annexe on the Mainland.—Statistics of Pilgrims Quarantined there.—Means of Landing; Sambouks and Tug; Landing Piers.—Disinfecting Pavilion.—Need of Wire Fencing Round the Different Cordons.—Stone Houses for Pilgrims.—Total Capacity of Lazaret.—The Drinking-water Supply; New Distilling Apparatus; Mode of Distribution.—Sea-water Supply.—Latrine Jetties, Old and New.—Absence of Hospitals; New Hospital for Ordinary Diseases to be Built on Abu-Saad; Space for a Second One left on Wasta; Infectious Diseases Hospital on Abu-Ali.—Staff of the Lazaret and Mode of Lodging them.—Other Buildings.—Estimated Cost of New Works.—Return of the Pilgrims from Mecca to Jeddah and their Departure for Yanbo or for their Own Countries.*

THE lazaret of the port of Jeddah is commonly known as the Abu-Saad lazaret, that being the name of the principal of the three islands upon which it is built. The others are named Wasta and Abu-Ali. The so-called "port" of Jeddah is merely an anchorage, or rather two anchorages, an "inner" and an "outer port," among the shoals and coral reefs which characterise the whole of this coast. These reefs are very irregular but their long axes run more or less parallel with the coast. The "outer port" is about two and a quarter sea-miles from the shore and the "inner port" about one and a quarter miles in a straight line, but no boat, however shallow its draught, could reach the shore by following a straight line, and the only available channel takes an extremely zigzag course among the reefs. From the inner port to the island of Abu-Saad the distance is three and three-quarters sea-miles, from Abu-Saad to Wasta it is one and three-quarters miles, and from Wasta to Abu-Ali one and a quarter miles. The three islands lie to the south of the town and are roughly about two miles from the mainland. Ships in quarantine remain in one or other of the anchorages at Jeddah and their pilgrims are transferred to the lazaret in sambouks.

The Abu-Saad lazaret was brought into existence in 1882 as a "succursale" of the much larger institution at Camaran. It is intended for the use of ships carrying not more than 5 per cent. of their net tonnage coming either from the north or from the south. Ships with a larger number of pilgrims are liable to be sent to Camaran, but this usually happens only in the case of ships from the south. The latter are always subject to from five to ten days' quarantine, and they have in any case to pass close to Camaran on their voyage to the Hedjaz. But ships from the north are only liable to quarantine when Egypt or some of the countries on the Mediterranean are infected with plague or cholera. This happened in 1902–03, in 1905, and again in 1906–07 (the Haj just completed). On the two earlier of these three occasions the Egyptian lazaret of El Tor was used for pilgrims going to the Hedjaz from the north by agreement with the Alexandria Quarantine Board. In the present Haj, however, the pilgrims have been sent to the Abu-Saad lazaret. The Commission of Inspection has gone very carefully and fully into the figures, and these show that when there is not more than two days' quarantine in force against Egypt or other "northern" country the Abu-Saad lazaret is capable of providing sufficient accommodation, but when the quarantine extends to five days then the accumulation of pilgrims is likely to be such that the Abu-Saad institution is quite inadequate to hold them.

It has more than once been proposed to transfer this lazaret to a spot where more ample accommodation could be provided than is possible on the three small islands named above. Unfortunately, no other suitable spot has yet been found; to this point I shall have occasion to refer again in the article dealing with El Wej. For many reasons the entire transfer of the lazaret is undesirable and as there are equally cogent reasons against the use of Tor (for pilgrims going *to* the Hedjaz) and against the repulsion of ships from the north to Camaran the Commission proposes to meet the difficulty by providing an annexe on the mainland to the lazaret on the three islands near Jeddah. Such annexe would only be required on the occasions when there was a quarantine of more than two days against Egypt, and then only for the two or three weeks immediately preceding the fêtes at Mecca, in which the Haj culminates. At other times the three islands should suffice.

The lazaret of Abu-Saad differs from that of Camaran, firstly, in being open all the year round, and secondly, in the very wide fluctuations in the number of pilgrims it may be called on to receive in the year (depending mainly upon the presence or absence of quarantine against Egypt or other "northern" country). These fluctuations are shown in the following table:—

*Table giving the Annual Totals of Pilgrims Interned in the Abu-Saad Lazaret.*

| Year. | | Pilgrims. | Year. | | Pilgrims. |
|---|---|---|---|---|---|
| Of the Hegira. | A.D. | | Of the Hegira. | A.D. | |
| 1299 | 1882 | 5,435 | 1312 | 1895 | 9,437 |
| 1300 | 1883 | 4,894 | 1313 | 1895–1896 | 23,304 |
| 1301 | 1884 | 3,988 | 1314 | 1896–1897 | 13,076 |
| 1302 | 1885 | 3,286 | 1315 | 1897–1898 | 1,766 |
| 1303 | 1886 | 2,181 | 1316 | 1898–1899 | 1,852 |
| 1304 | 1887 | 3,519 | 1317 | 1899–1900 | 3,726 |
| 1305 | 1888 | 2,578 | 1318 | 1900–1901 | 1,103 |
| 1306 | 1889 | 4,021 | 1319 | 1901–1902 | 21,625 |
| 1307 | 1890 | 12,862 | 1320 | 1902–1903 | 3,662 |
| 1308 | 1891 | 4,602 | 1321 | 1903–1904 | 2,733 |
| 1309 | 1892 | 4,574 | 1322 | 1904–1905 | 10,209 |
| 1310 | 1893 | 6,525 | 1323 | 1905–1906 | 2,524 |
| 1311 | 1894 | 5,567 | — | — | — |

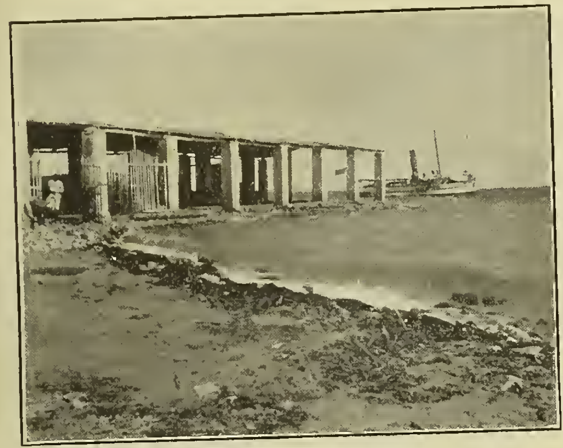
The three islands on which (or, to speak more accurately, on two of which) the lazaret is at present built are typical small coral islands. Abu-Ali is smaller than Wasta but larger than Abu-Saad. The disadvantages arising not only from the smallness of the islands, but also from the fact that the lazaret is thus split up into sections, separated by wide stretches of water, are too obvious to need dwelling on. For the purposes of communication between the lazaret and the town and between the different portions of the lazaret the sanitary authorities possess a steam-tug, the *Zulal*, a small steam launch, and a four-oared sailing boat. The steam launch, however, can never with safety leave the "port" of Jeddah, and it and the sailing boat are practically limited to carrying out the requirements of the service in the port. The *Zulal* is a small but powerful steam-tug; it is used for towing the sambouks in which, as already stated, the pilgrims are carried to the lazaret from their steamers. The Commission finds that there is need for additional means of establishing communication between the different parts of the lazaret and its recommendation for the purchase of another large four-oared boat has been already carried out.

There is a stone landing-stage at Abu-Saad and another at Wasta, but none at Abu-Ali. Both the existing stages were found in a bad state of repair and to need lengthening; the necessary works were put in hand during the past summer and both have now been thoroughly repaired and prolonged to a point where the water is deep enough to allow boats to come alongside. The Abu-Saad pier as it was before the repairs were begun is seen in Fig. 34. It is covered with a roof, supported on stone pillars, and this also has been thoroughly repaired. The absence of a landing-pier at Abu-Ali has hitherto rendered that island useless; the Commission's recommendation to construct there a pier 35 metres long and three wide is now being carried out. The amount of superficial space being extremely limited, even taking all the three islands together, it is a matter for regret that many of the existing buildings have been put up with very little thought of symmetry or of any general plan of the institution as a whole. In this way some valuable space has been lost. It is too late to remedy this defect now and all that can be done will be to employ the land still remaining free to the greatest advantage and to establish the best general plan of the lazaret that can be attained without removing existing buildings. The island of Abu-Saad is now very largely built over; on that of Wasta there is a considerable amount of space left, but the presence of two old and six new houses for pilgrims—the former irregularly placed and the latter occupying a line running down the middle of the island—compels the adoption of a plan for this island which lacks symmetry (as shown in the accompanying sketch) but which is the best possible in the circumstances. On Abu-Ali no buildings have as yet been put up and here it is proposed to build the hospital for cholera or plague, to be mentioned later.

---

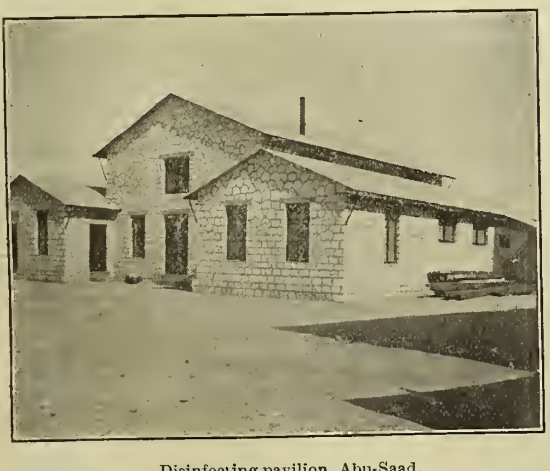
[1] Nos. I., II., III., IV., V., VI., VII., VIII., and IX. were published in THE LANCET of April 27th (p. 1188), May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), June 1st (p. 1518), 8th (p. 1607), 22nd (p. 1741), and 29th (p. 1810), and July 6th (p. 51), 1907, respectively.

FIG. 34.



Landing pier at Abu-Saad and steam tug *Zulal.*

FIG. 35.



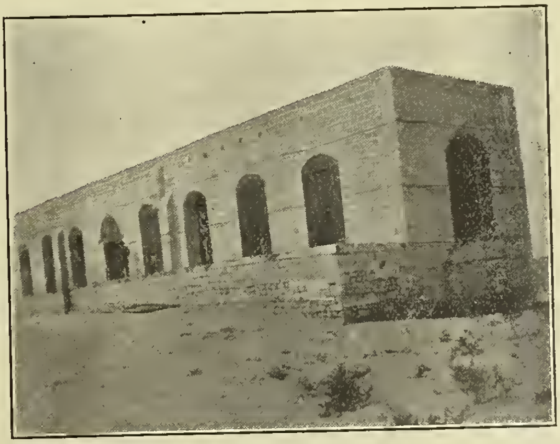
Disinfecting pavilion, Abu-Saad.

There is at present only one disinfecting pavilion for this lazaret. It is seen in Fig. 35. It is a masonry building recently constructed; the ground plan of it is excellent. It is much smaller than the corresponding buildings at Camaran described in an earlier article. On the male side there are 16 douche baths and on the female side six. There are two steam disinfecting stoves. A number of improvements in detail of this pavilion are recommended in the Commission's report, but they scarcely need be mentioned here; most of them have been already, or are being, executed. In the plan of Wasta prepared by the Commission a space is left near the landing jetty for the future construction of a second disinfecting pavilion. This will do away with the necessity of landing pilgrims destined for Wasta at Abu-Saad to undergo their disinfection, after which they have again to be put on their sambouks and towed from that island to Wasta.

Perhaps the most serious defect of this lazaret in its existing state is the lack of separation between different groups of pilgrims interned there at the same time. Hitherto the most that has been done in this respect has been to fix some posts in the ground and run a cord between them. It is obvious that this constitutes no real separation of any kind. The Commission's recommendation to divide the islands up into "cordons" or camps and to surround these by high wire fences will very shortly be carried out. The fences will be of the same character as those recommended for Camaran and described in an earlier article. The lines which these fences will follow and the shape and size of the cordons thus established are seen in the accompanying sketch plans of Abu-Saad and Wasta. (Plan V.)

The pilgrims are lodged either in stone houses or in tents, the "arish," or mat-and-thatch house in use at Camaran being almost unknown in the Jeddah neighbourhood. There are four large stone houses on the Abu-Saad island, each capable of holding 80 pilgrims; on Wasta there are two old houses of the same kind and size as those at Abu-Saad, and six new smaller houses. The latter were in course of construction when the Commission visited the lazaret; they have since been completed, as also three quite small single-roomed houses on Wasta and two on Abu-Saad. These latter were intended to serve as kitchens, but as the Commission pointed out, land is too scarce and valuable to permit of using so much of it for kitchens, more particularly as most of the pilgrims carry portable cooking stoves with them or are adept at improvising kitchens on the sand. The five small houses in question have consequently been modified in the course of construction and been converted, some into houses "of distinction," one into a lodging for the sanitary guards, and one into the office of the lazaret.

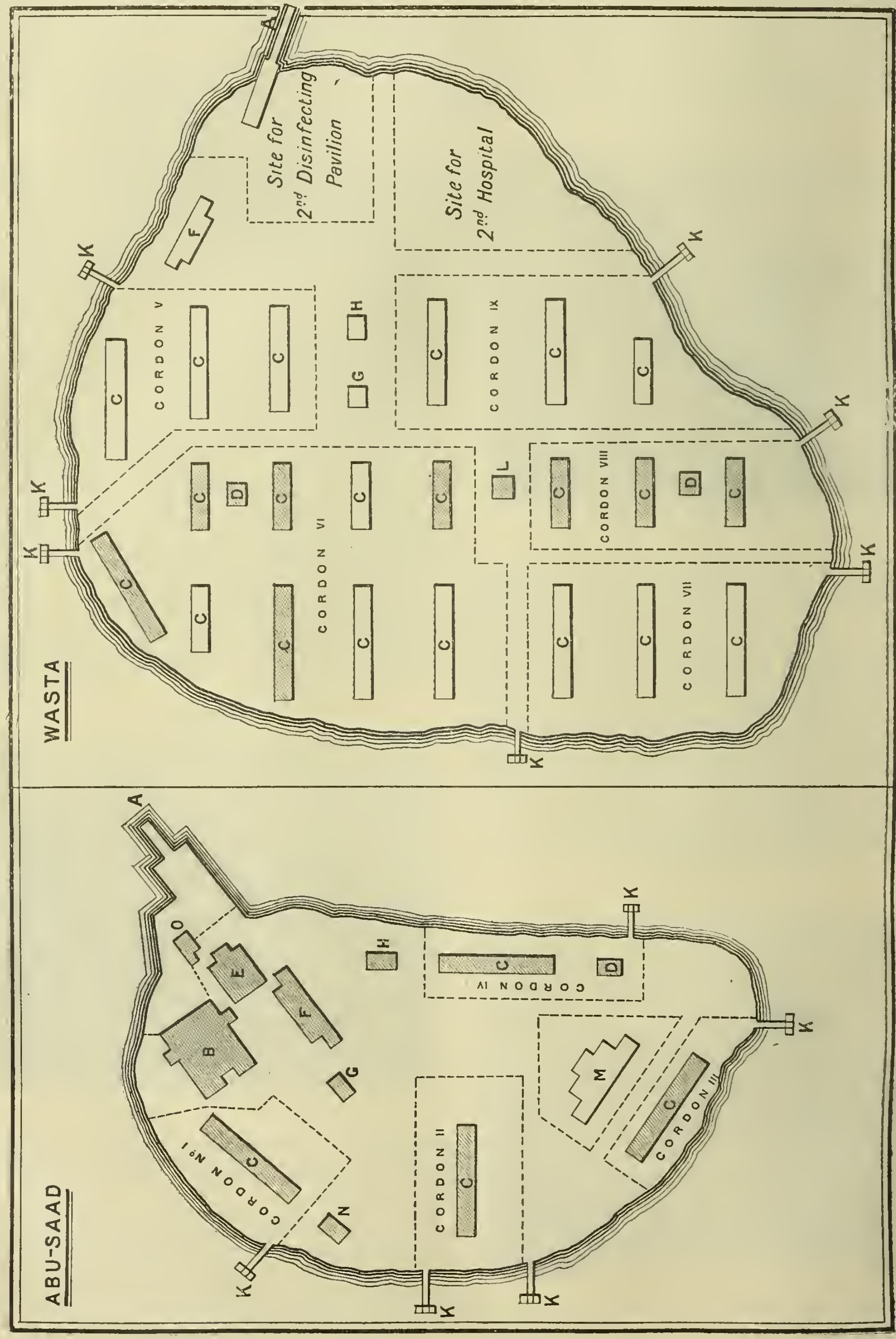
FIG. 36.



House for pilgrims in quarantine, Wasta.

The old houses for pilgrims are 31 metres in length and 6·10 metres in width. They are built of the madreporic stone which is found in abundance in the neighbourhood of Jeddah. The roof is of "tap-tap," the nature of which was described in Article III. They all require thorough repair, and it has been decided not only to strengthen and to repair the walls but also to add a parapet round the flat roofs, with an outer stair at one end of the building to give access to the roof; to replace the rough stone flooring of the interiors by a flooring of cement; to add a covered verandah along one side at least of each of the houses; and to carry out certain other

PLAN V.



Sketch plans of the islands of Abu-Saad and Wasta, showing existing buildings (shaded) and projected buildings (unshaded). A, A, Landing piers. B, Disinfecting pavilion. C, C, Houses for pilgrims. D, D, Houses of "distinction." E, Distilling apparatus. F, F, Residences for staff. G, G, Provision dealer. H, H, Barracks for military guard. K, K, Latrine jetties. L, House for sanitary guards. M, Hospital. N, Office. O, Depôt. - - -, Wire fencing. The plans are drawn roughly to scale, one inch representing approximately 112 feet.

measures intended to increase both the comfort and the durability of these structures. The exterior of one of the houses at Wasta is seen in Fig. 36.

At Abu-Saad there is no room left to put up any new houses for pilgrims; the four old houses existing there are capable of holding 80 pilgrims each, or 320 in all. At Wasta, in addition to the two old houses and the six large and three small new houses just completed, the plan proposed provides for 13 new houses, of which nine would contain 80 pilgrims each, one would contain 70, and two 60 each. There would thus be in all in Wasta 12 houses for 80 pilgrims each, one for 70, and eight for 60; or accommodation for 1510 persons. These houses would be grouped in five cordons, as shown on the plan, capable of holding respectively 240, 630, 240, 180, and 220 pilgrims. The four houses at Abu-Saad, it should have been stated above, will each form a separate small cordon for 80 pilgrims; this is practically necessitated by the position they occupy, but fortunately, as statistics show, the majority (57·5 per cent.) of ships coming to this lazaret carry less than 80 pilgrims each. On Abu-Ali it is proposed to cut off the north end of the island by a double wire fencing, to the north of which will be constructed the infectious diseases hospital, while to the south there will be room for one or two cordons holding about 650 or 700 pilgrims. Thus the maximum number of pilgrims that this lazaret can accommodate, so long as it is confined to these three islands, will be about 2500, distributed as follows: Abu-Saad, 320; Wasta, 1510; Abu-Ali, say 670. At present it will be seen that only some 840 pilgrims can be lodged in stone houses. The remainder have to be put under tents. The tents belong to the Turkish Government and are usually sent down from Mecca to Jeddah when they are required at the lazaret.

The present drinking-water supply of this lazaret is provided by a distilling apparatus. This was put up last year in a building near the jetty on Abu-Saad which was formerly the disinfecting pavilion. The apparatus is of the "Weir" type. The total cost, including transport to the lazaret, was about £660 sterling. It is capable of producing 15 tons of fresh water in 24 hours. The machine was being put up when the Commission visited the lazaret and had not begun to work. During the season just completed it is said to have worked well and given satisfactory results.

When this lazaret was first brought into existence it was intended to use rain-water for the pilgrims. A large masonry reservoir was constructed by the side of each of the stone houses which have been described. But rain is extremely rare in these regions and it is said that these reservoirs have never held any water at all. The lazaret has consequently been dependent hitherto upon a small distilling apparatus mounted on the tug *Zulal* already described or on water from Jeddah. The distiller on the *Zulal* is capable of producing only three or three and a half tons of water per day, an insufficient quantity when the lazaret is anything like full. The Jeddah water is, as was shown in a previous article, of the very worst quality possible. Consequently there was abundant reason for putting up the new distilling apparatus.

The existing method of distributing the water through the lazaret was found to present many grave drawbacks. At Abu-Saad there is a cemented masonry reservoir of ten tons on the jetty and at Wasta there are two iron reservoirs on the sand by the side of the jetty. Twice a day the groups of pilgrims were allowed to leave their cordons in turn and come to these reservoirs where they filled their jugs or tins with the amount of water allotted to them (two and a half litres in the morning and the same quantity in the evening). It is obvious that such an arrangement infringes the principles of the complete isolation of each group from the other and of the thorough security of the central water-supply from contamination. It was bad enough at Abu-Saad where the reservoir has a tap; it was still worse at Wasta where the pilgrims dipped their vessels into the reservoirs themselves. It has now been decided to have five large galvanised iron central reservoirs of ten tons each, one at Abu Saad, three at Wasta, and one at Abu-Ali; from these the water will be conducted to each cordon in underground pipes and in each cordon there will be a tap under the control of an employee of the lazaret, where the pilgrims will take their water twice a day, as at present, but without leaving their cordons.

Salt water is supplied to the disinfecting pavilion in Abu-Saad by a pump which aspirates the water from the sea and distributes it to two small reservoirs of one and a half tons each. At present the salt water goes no further, but piping is now to be laid down which will conduct it to the latrines in the new hospital to be put up at Abu-Saad and also to those of the lodging for employees to be referred to later.

The latrines for pilgrims at this lazaret are situated at the end of long wooden jetties running out into the sea. It will be recalled that similar jetties exist at Camaran and that it was necessary to condemn roundly their use at that lazaret.[2] The conditions, however, at the three islands near Jeddah are different. There the tide does not run out a long way, leaving a wide expanse of sand and the latrines dry, as at Camaran. On the contrary, with comparatively short jetties it is possible to put up the latrines where there will always be water below them. Moreover, there are very strong currents which carry away the solids immediately and the sea swarms with fish which apparently devour them. Consequently the lazaret employees declare the existence of these latrine jetties at Abu-Saad and Wasta has hitherto never given rise to the highly unpleasant conditions which rendered their condemnation necessary at Camaran, nor indeed to any complaint of any kind. In view of the small area of the islands it is not only advantageous but almost necessary to continue the use of latrines at the end of jetties.

In place of the old wooden jetties several new ones consisting of wooden beams and planks supported on concrete and masonry piers have been put up during the past year, and several others are projected, so that in all there will be five such jetties at Abu-Saad, seven at Wasta, and one (or two) at Abu-Ali. In the new hospital at Abu-Saad and in the residences for the staff on that island it has been decided to put in water-closets with flushing cisterns and drains to the sea.

A very serious defect in this lazaret is the entire absence of proper hospital accommodation. Hitherto if any cases of illness occurred among the pilgrims they were treated either in an empty house for pilgrims (if there happened to be one empty) or in a tent, or very often in the cordon to which they belonged, without removing them from the healthy pilgrims. The Commission naturally condemns such an arrangement and urges the immediate construction of two hospitals, one for ordinary diseases, the other for infectious diseases.

The ordinary diseases hospital will be built on Abu-Saad on a roughly triagular area near the southern end of the island. The plan proposed for this hospital is furnished in the report of the Commission. It provides for two wards capable of holding some 12 patients, a bacteriological laboratory, pharmacy, bath-room, two water-closets, and a room for the attendants.

In the plan of the island of Wasta (Plan V.) a space has been left for the future construction of a second hospital for ordinary diseases, so as to avoid the transport of the sick from this island to Abu-Saad. Finally, the infectious diseases hospital will be built at the northern end of the Abu-Ali island; it will be capable of holding 12 patients and will be provided with the usual annexes.

The staff of this lazaret consists of the following: one permanent medical officer, to whom during the height of the pilgrim season a second, and even a third, may be added; one clerk; one "étuviste" to work the disinfecting stoves; a head-disinfector and two disinfectors (increased in case of necessity); a head-guard and four permanent guards; and a number of temporary guards varying with the number of pilgrims interned in the lazaret. In addition there are two "mécaniciens," a first and second, who are in charge of the tug *Zulal*, the small launch, and the distilling apparatus and disinfecting stoves; a pilot, two sailors, and two stokers on board the tug; and four boatmen for the sailing boat. To lodge all these employees there exist a small residence on the island of Abu-Saad, another one on Wasta, and four rooms in the old disinfecting pavilion, by the side of the central chamber in which the new distilling apparatus has been put up. The residence on Wasta is a two-storeyed building, with two rooms and a vestibule on each floor. The Commission found it in an extremely bad state of repair and practically uninhabitable. It will therefore be demolished and another building—the plan of which is furnished in the Commission's report—will be put up instead, on a site near to the landing jetty.

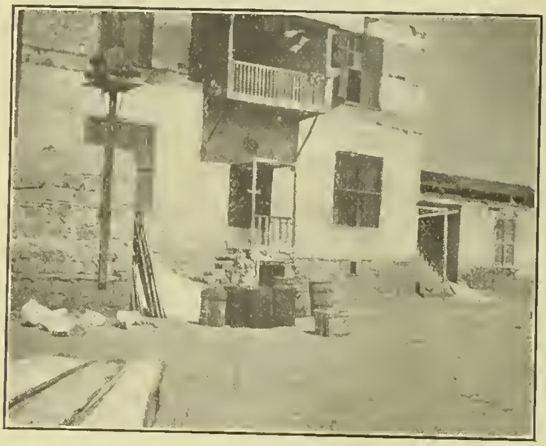
The residence on Abu-Saad, which is shown in Fig. 37, is a similar building but in a better state of repair. It has been decided to restore thoroughly this building and to add two new rooms at each end of it; there will thus be four rooms on the ground floor and four on the upper floor, or eight in all. With these additions and the new house at Wasta there will be a sufficient accommodation for the existing staff. The crew of the tug sleep on board, where there are bunks for ten persons.

---

[2] Article V., THE LANCET, June 1st, 1907, p. 1521.

There remain to be mentioned a few other buildings that form part of this lazaret. On Abu-Saad, close to the landing jetty, is a masonry structure with galvanised iron roof, about 32 feet long by 20 feet wide, which constitutes the only depôt or storeroom that the lazaret possesses. It is rather small for the purpose, but it is difficult to find room for another on any of the islands. It is therefore proposed to build one in Jeddah itself adjoining the sanitary office there, and it will thus serve for the purposes of the office and the lazaret combined. Annexed to the store is a small room in which are a forge, a lathe, and some other machines. On Abu-Saad a stone house to lodge the military guard has recently been built and a second one is provided for in the plan of Wasta.

FIG. 37.



House for staff, Abu-Saad.

Both at Abu-Saad and at Wasta there are small wooden houses occupied by the provision dealer from whom the pilgrims buy their food and various other articles at a fixed tariff. The same dealer, an Arab, has provided the lazaret for the last 18 years. He or his employees remain interned in the lazaret so long as there are any pilgrims quarantined there. The house he occupies on Abu-Saad is in fair repair but that on Wasta is a mere skeleton of wood, and is to be rebuilt on another site, as shown in the sketch map of that island.

There is no railway in this lazaret, as at Camaran, nor is there any need of one, the islands being so small. At present also there is no telephone, and this is a serious disadvantage, in view of the distance of the lazaret from the town and of the individual islands from each other. It has been decided, therefore, to establish telephonic communication both between Jeddah and Abu-Saad and between the different islands.

The total cost of the new works proposed by the Commission for the completion of this lazaret is estimated at about 13,000 Turkish liras (say, £12,000). The more urgently needed works require an expenditure of about 5000 liras, and of these about one-third have already been put in hand since the return of the Commission to Constantinople; the others must of necessity wait until fresh credits can be voted by the proper authority. The works just mentioned as being already put in hand are the following: the construction of a landing-stage at Abu-Ali, the building of one of the hospitals, the putting up of wire fencing on all the islands, so as to establish definitely the plan of the lazaret and the shape and size of the cordons, the carrying out of certain modifications in the disinfecting pavilion, and the introduction of pipes to distribute the fresh water throughout the islands of Abu-Saad and Wasta.

I have now completed the description of the lazarets of Camaran and of Jeddah. These both serve for the quarantining of pilgrims on their way to the Hedjaz. Before passing on to consider some subsidiary ports of pilgrimage in the Red Sea and some quarantine institutions connected with the return of the pilgrims from the Hedjaz a word or two may be said as to the movements of the pilgrims themselves between their arrival in, and departure from, that province. I have already described the nature of the fêtes at Arafat and Mina in which the Haj or pilgrimage culminates[3] and the sanitary measures taken in connexion with those fêtes. As soon as they are completed the pilgrims begin to leave Mecca as rapidly as the authorities and the supply of camels permit them to do so. As a matter of fact, a few days generally elapse between their return from Mina to Mecca and the departure of the first caravan from the latter town, either for Jeddah or Medina. Sooner or later two streams of caravans form, the one flowing westwards to Jeddah, only 45 miles distant, the other northwards to Medina, at a distance of 12 days' journey in the desert. The delay in starting either of these streams is connected with the chaffering and bargaining inseparable from the hiring of camels for two such journeys.

On returning to Jeddah the pilgrims again split up into numerous groups, but these may be roughly divided into two—those going to Yanbo in order to continue their pilgrimage to Medina and those returning to their homes. The latter comprise, of course, a vast variety of pilgrims, and they leave Jeddah to disperse to all parts of the Moslem world as rapidly as steamers can be provided for them. The former also constitute a very varied and numerous group, their total frequently running up to five figures. At this period the town of Jeddah is in the intensely overcrowded condition described in an earlier article. A delay of some days generally occurs between the arrival of the first caravan from Mecca and the departure of the first steamer. During this interval there is for a day or two much uncertainty as to the price the pilgrims will be charged for their return journey. Several large shipping companies are concerned in the pilgrim traffic, and in some years open competition prevails between them, while in other years a pool or syndicate is formed by mutual arrangement between the companies who then agree to charge the pilgrims the same price all round. When open competition prevails the prices are lower and the conditions more favourable for the pilgrims. A certain number of pilgrims—notably those from the Dutch East Indies—have return tickets and can regard with indifference the question whether competition or the pool is to carry the day. But these are the exception.

Among the pilgrims accumulated at this period in Jeddah there are always many in an almost or quite penniless condition. Some are more or less in that condition from the time they set out on the Haj; others have spent all they had during their stay in the Hedjaz. There is always a difficulty in getting these indigent pilgrims back to their own countries. Generally—and more particularly when the "pool" system prevails—the shipping companies consent to carry on their ships a certain percentage of such pilgrims gratuitously. Others are paid for by their respective Governments or out of charitable funds. And so, little by little, the port of Jeddah empties itself of ships and of pilgrims, and enjoys a few months of repose before the first arrivals of the succeeding Haj. The numbers leaving Jeddah are always rather less than those that arrived there. Some pilgrims have died in the Hedjaz; others have gone from Mecca overland to Medina and return thence to Yanbo (though this group is compensated by another group of pilgrims, who follow the reverse route, landing at Yanbo and leaving the Hedjaz by Jeddah); and some have settled in Mecca for a year or two or even for life.

*(To be continued.)*

# BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *The University.*

Degree Day, which was held on Saturday last, terminated the work of the summer term, which has been even more than usually extensive and successful. The Degree Congregation was held in the town-hall and fortunately the weather was fine during the passage of the procession from the University buildings in Edmund-street to the hall. The spectacle inside the hall was brilliant, the decorations blending charmingly with the pretty dresses of the ladies and the varied gowns of the teachers and graduates. After the Vice-Chancellor (Alderman C. G. Beale) declared the Congregation open little or nothing was heard except the noises made by the students as they welcomed and congratulated the various recipients of degrees. No one seemed to mind the noise, which rose to crescendo whenever a particular favourite approached the rostrum, and indeed it mattered little, for everyone knows the formula of presentation and that of reception, and there were no speeches. Professor Sir Edward Elgar, who was presented for the degree of Master of Arts, received a great ovation, and Professor Kirkaldy, who was obviously also a favourite of the students, received the degree of Master of Commerce. 29 graduates in arts were presented by Professor Fiedler, 43 graduates in science by Professor Poynting, 12 graduates in medicine by Professor H. Gilbert Barling, and one in commerce by Professor Ashley. Mr. Sidney S. Dawson, F.C.A., has been appointed to the chair of Accounting, which became vacant by Professor Dicksie's resignation, and Mr. A. W. Wellings, B.D.S., has been elected lecturer in Dental Histology and Pathology in the place of Dr. H. P. Pickerill, who has accepted the appointment of director of the Dental School of New Zealand.

---

[3] THE LANCET, Feb. 16th, 1907, p. 464.

### *Annual Report of the Medical Officer.*

With the exception of two points Dr. J. Robertson's report of the health of the city during 1906 is very satisfactory but the infant mortality and the death-rate from zymotic disease were not what could be desired, for the former was 163 per 1000 and the latter 2·78 per 1000. So far as the infant mortality is concerned it may be allowed that the summer of 1906 was, to a certain extent, exceptional and no doubt the death-rate, high as it was, would have been much greater under similar conditions a few years ago; we may, therefore, hope for still better results in the future but we shall only get the better results when the mothers understand their duties. It has been frequently urged that the milk-supply is mainly the cause of excessive infant mortality but those who have seized upon that one point will have to reconsider their position, so far as deaths from diarrhœa are concerned, for, as Dr. Robertson points out, with respect to Birmingham, all the deaths occur in one moiety of the population and the other is practically immune, and the milk-supply is practically the same. The exceptional summer of 1906 does not account, however, for the increase of the zymotic death-rate and the cause of the rise from 1·94 in 1905 to 2·78 is not at present readily explainable on any definite grounds. With the exception, however, of the two sets of unsatisfactory conditions above mentioned the general health of the city during 1906 was extremely good. There was no small-pox, the deaths from typhoid fever were very few, and the total death-rate only amounted to 16·8 per 1000, or very slightly higher than the record year 1905, when it was only 16·1 per 1000. The birth-rate varies in the different wards from 18·6 to 37·3 per 1000 and averages 29·3 per 1000, as against 29·2 in 1905. On the whole, therefore, the city compares favourably with many other large towns and as the improvements which have been initiated begin to tell we shall gradually occupy a more and more enviable position in the general mortality returns.

### *Birmingham Lunatic Asylums and the Cost of Pauper Lunatics.*

From the annual report of the asylums committee it appears that the number of patients in the asylums has been reduced during the year from 2029 to 1998. At first sight this may appear to be satisfactory but further consideration will diminish any congratulatory thoughts for, according to the report, the discharges from the asylums include 199 recovered, 39 relieved, and 74 not improved, and a little consideration will show that many of the so-called recovered will return at a future day and both they and the relieved will in the meantime beget children who, even in the most favourable circumstances, will help to swell the record of the lunatics of future years. It would be costly in the first instance to prevent this, but it would be economical eventually, and though it would inflict some hardship in a number of cases it would be good for the race as a whole, and some time it will have to be done. In the meantime the ratepayer will be glad to know that we are to pay a little less for our pauper lunatics, the price per head being reduced from 11*s.* 11*d.* to 10*s.* 6*d.* per week.

### *Exhibition of Hand Loom Weaving by Crippled Girls.*

Some five years ago a school of hand-loom weaving was established in association with the Birmingham Crippled Children's Guild, the object being to provide some crippled girls with a means of making a living. It was commenced on a small scale but it was soon seen that the scheme was capable of expansion, and last year the school was moved to more commodious premises. At first it was not a financial success but now it pays its way on sound commercial lines both as regards the sale of its work and the pay of the workers. It utilises ten looms and gives congenial employment to 12 crippled girls, and it is rapidly establishing an excellent reputation which is being won in open competition, for at the exhibition held at the Albert Hall in London this year 29 of the 30 exhibits sent by the school secured awards. Although the work done pays working expenses the profit is not at present sufficient to pay off expenses incurred in establishment and more money is needed for the provision of some new English looms. It is to be hoped that this will soon be provided, for an institution which enables afflicted girls to earn a living by work which is not beyond their restricted capabilities is surely worthy of support. Mrs. Kirkaldy, the president, and the members of the committee working with her wish to develop the enterprise on coöperative principles and they are anxious in the first instance to clear off the debt. Some of the materials shown at the recent exhibition at Queen's College were excellent examples of their class and those who wish to utilise artistic and durable materials cannot do better than communicate with the school authorities.

### *St. John Ambulance Brigade: Birmingham Corps.*

The recent inspection of the Birmingham corps of the St. John Ambulance Brigade was held in the Botanical Gardens and in spite of the very bad weather passed off successfully. The total number at the parade, including two companies of nurses, was 180. In the evening, after the inspection, Colonel Elliston, the inspector, distributed the certificates and complimented the brigade upon the way in which it had turned out and upon the character of the work which it had done during the afternoon. He also expressed the hope that the brigade would respond heartily to the offer that they should serve as a reserve to the Army Medical Corps under the new scheme.

### *Wolverhampton Annual Health Report.*

Though Wolverhampton may not seem a very desirable place to live in to the passing stranger, more especially if he passes only along the railway lines, nevertheless the annual report of Dr. H. Malet shows that the health of the borough compares very favourably with the health of other large industrial centres. During 1906 the total death-rate was only 14·8 per 1000 and the birth-rate was 27·5 per 1000. Small-pox was absent and typhoid fever was rare, but measles and diphtheria were more than usually prevalent.

July 9th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *Hospital Sunday and Saturday Funds: First interim Distribution of £10,000.*

THE distribution committee of the above-named funds met at the town hall on July 1st, when the treasurer announced that an interim distribution would be made to the various charities of £10,000 on the same basis as last year. The Royal Infirmary will receive £2125, the Royal Southern Hospital £1475, the David Lewis Northern Hospital £1275, and the Stanley Hospital £800. The other charities will receive smaller amounts proportionate to the number of beds in each. The honorary treasurer said that with regard to the guarantee of the 10 per cent. gift by Alderman Cohen and his ten friends the Sunday Fund so far showed an increase over last year of £882. The Saturday Fund is not expected to be any less than last year, so that the committee anticipated asking the 11 guarantors of 10 per cent. for £88 each, or £968 altogether.

### *The Liverpool Water-supply.*

In his annual report the water engineer of the Liverpool corporation stated that Liverpool is now supplying more than 1,000,000 people with water and the sources are so abundant that to add Birkenhead to the list could not seriously affect the supply. The water is supplied by the river Vyrnwy.

### *Presentation to Mr. James Taylor of Chester.*

In the council chamber of the Chester town-hall on July 4th a presentation of suitable gifts, subscribed for by the people of Chester, to Mr. James Taylor, F.R.C.S. Eng., took place on the occasion of his retirement from the post of honorary surgeon to the Chester Infirmary. Mr. Taylor had been connected with the infirmary for 40 years, first as house-surgeon and afterwards as honorary surgeon. The Mayor of Chester presided over a large and representative gathering. The honorary secretary announced that the amount of subscriptions was £448 8*s.* 6*d.*, and the expenditure £249 5*s.* 4*d.* The mayor asked Mr. Taylor's acceptance of an illuminated address, which read as follows:—

To JAMES TAYLOR, ESQ., F.R.C.S., J.P.

DEAR SIR,—The occasion of your retirement from the position of senior honorary surgeon to the Chester Infirmary is an opportune time in which to bear public testimony to the exceptional services you have rendered to this city and neighbourhood during the last 40 years. All that period you have been connected with the infirmary as house surgeon, then honorary surgeon, and ultimately senior honorary surgeon, and we fully recognise that you have partaken in so auspicious a degree in all the works and efforts that have been undertaken to promote the usefulness of that valuable institution since 1866. It is absolutely accurate to say that your services in this direction have been unique. Many of us are members of the honourable profession which you so greatly adorn by your widely acknowledged skill, your cultivated ability, and your abounding labours. Many of us are numbered among the great company of the grateful patients, and all of us are comprised in the wide circle of your friends and admirers. We beg to ask you to accept this clock and candelabra, illuminated address, and cheque as evidence of our affection and best wishes. We earnestly trust you may be long spared to pursue your useful and beneficent course, and that you, Mrs. Taylor, and your family may be abundantly blessed.

Yours truly,
JOHN JONES (Mayor),
EDWARD EVANS LLOYD (Chairman of the Board of Management of the Chester Infirmary,
G. WRIGHT, M.D. (President of the Chester Medical Society),
JOHN ROBERTS, M.D. (Honorary Treasurer),
A. G. HAMILTON, M.D. (Honorary Secretary).

Mr. J. R. Thomson, on behalf of the Chester Infirmary management committee, presented Mr. Taylor with a clock and candelabra and Mrs. Taylor was presented on behalf of the subscribers with a silver tea and coffee service. The fourth presentation, consisting of a cheque for £199 10*s.* 8*d.*, was made to Mr. Taylor by his old friend and fellow student Dr. John Roberts. Mr. Taylor, who received quite an ovation, expressed his thanks in suitable and feeling terms.

### *Opening of the New Infirmary at the Clatterbridge Workhouse.*

The extensive buildings and improvements carried out at the Clatterbridge workhouse were formally opened last week. The new infirmary affords accommodation for 46 patients, having four large wards with ten beds in each and six separate wards. The brick walls have high dadoes of glazed tiles and the floors are of polished wood. The whole premises are admirable as far as ventilation and cleanliness could make them. Besides the wards there are day rooms and wide airy balconies. The new infirmary is connected with the older building by means of a covered way. The nurses' home and laundry are also thoroughly up-to-date.

July 9th.

---

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

### *Midwives in Swansea.*

THE Swansea corporation, as the supervising authority under the Midwives Act, has appointed a woman inspector of midwives, and during the few months she has been in office a great improvement is said to have taken place in the methods and equipment of the registered but uncertificated midwives who practise in the town. Of the 88 midwives who are on the Swansea register only nine hold certificates from institutions or societies recognised by the Central Midwives Board. The inspector of midwives, jointly with the woman sanitary inspector employed by the corporation, visits the homes of newly born children in Swansea to ascertain the conditions of their feeding and to render advisory help where needed. There would appear to be plenty of work for these two officials, for the infantile mortality rate in Swansea has averaged for many years 160 per 1000 births. In the year 1906, of the 501 deaths of children under one year of age, as many as 141 died before reaching the age of one month, while in some parts of the town more than one-third of the deaths under one year of age occurred before the end of one month.

### *Newport Port Sanitary Authority.*

In his annual report to the Newport (Mon.) Port Sanitary Authority the medical officer of health (Dr. J. Howard-Jones) draws attention to the unsatisfactory accommodation provided for the crew in many of the new British ships. Although vessels are now built of greater tonnage than formerly, inadequate provision is made for the needs of the crew in order that as large an amount of cargo may be carried as possible. After the vessels have been passed by the Board of Trade and arrive at a British port during a voyage they come under the notice of the port sanitary authority and it is not an uncommon occurrence, Dr. Howard-Jones declares, for structural alterations to be insisted upon in order to remedy nuisances quite soon after the vessel has been passed by the Board of Trade. This action is naturally a source of annoyance and expense to the owners and he suggests that there should be some recognised responsible authority whose duty it would be to make definite regulations, when better accommodation for the crew would frequently be provided without any extra cost.

### *A Low Birth-rate and Plumbo-solvent Water.*

The birth-rate in Pontypridd has always been high and during the past few years the steady fall in the birth-rate which has been such a noticeable feature in other parts of the country has been entirely absent from the Pontypridd records. The reverse, indeed, has been the case for during the five years 1901–05 the Pontypridd birth-rate averaged 37·1 per 1000, while in the preceding five years it averaged 30·1 per 1000. In 1905 it was 36 per 1000, and in 1906 there was a sudden drop to 29·7 per 1000. In his annual report the medical officer of health (Mr. Howard Davies) says that it is difficult to say how far this low birth-rate was prejudicially affected by the injurious influences of the public water-supply. Examinations of the water which were made at different times during the year revealed the presence of one-fourteenth of a grain of lead per gallon. Mr. Davies urges that steps should be taken to counteract this plumbo-solvent action of the water which is obtained from high moorlands situated some 12 or 14 miles from Pontypridd.

### *Presentation to Dr. George Crowe.*

The members of the Worcestershire and Herefordshire branch of the British Medical Association entertained Dr. George W. Crowe of Worcester at a dinner at Malvern on June 27th. The occasion was marked by the presentation to Dr. Crowe of a piece of plate by Mr. T. Bates on behalf of the members of the branch. Dr. Crowe was the first secretary of the branch upon its formation in the year 1880 and was continuously re-elected each year until 1906. He represented the branch upon the council of the Association from 1884 until two years ago when owing to the alteration in the constitution the representation upon the council was linked with that of Gloucestershire.

### *Winsley Sanatorium.*

The annual meeting of the subscribers to the Winsley Sanatorium was held on July 3rd under the presidency of Dr. Lionel A. Weatherly. The medical report was satisfactory and the financial statement showed that the adverse balance on the year was £180, compared with an adverse balance of £650 on the previous year.

### *A Portrait of Dr. John Beddoe.*

On July 5th the Right Hon. Lewis Fry formally presented to the city of Bristol a portrait of Dr. John Beddoe, who formerly practised at Clifton and now lives in retirement at Bradford-on-Avon (Wilts). The portrait was painted by Miss E. B. Warn and was purchased by subscription; it will be placed in the art gallery of the city. The frame of the painting has the following inscription: "John Beddoe, M.D., F.R.S., by Miss E. B. Warn, presented by some of his friends, 1907." Mr. Fry, in the course of his speech, alluded to the distinguished career and high scientific attainments of Dr. Beddoe, who they were all proud to think of as a Bristolian. Dr. Beddoe made an interesting little speech, in which he said that he had striven to do his duty for the city and hoped that he had not altogether failed.

July 9th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Channel Fleet in the Firth of Forth.*

THE presence of the Channel Fleet in the Firth of Forth has been taken advantage of by the Royal College of Physicians of Edinburgh to entertain the medical officers of the fleet. The entertainment took the form of a luncheon given on July 6th, in the hall of the College, presided over by the President of the College, Dr. C. E. Underhill. Owing to the shortness of the notice many of the Fellows of the College who might have been present were unavoidably absent.

### *Centenary of the Royal Edinburgh Asylum.*

The Royal Edinburgh Asylum completes the 100th year of its existence, having received its Royal Charter on May 2nd, 1807. In view of this invitations have been issued to a garden party to be held at Craig House on July 12th. The east house was opened for patients on July 9th, 1813, and a west house was determined on in 1837. The first physician-superintendent was Dr. Mackinnon appointed in 1840. The following year it became a Royal asylum, Queen Victoria becoming its patron. In 1846 Dr. S. Rae was appointed physician-superintendent. In 1873 he was succeeded by Dr. T. S. Clouston who still occupies the position with undiminished vigour and whose administrative and clinical abilities have so largely contributed to give the asylum the distinguished position which it occupies.

### *The Discussion on General Paralysis at the Edinburgh Medico-Chirurgical Society.*

As will be seen from the report of the meeting of this society held on July 3rd Dr. W. Ford Robertson and Dr. G. D. McRae have carried their investigations into general paralysis an important step further. Unfortunately, there was no attempt on the part of the officials of the society to ensure a full discussion of this work. The communication was preceded by an interesting surgical paper which gave rise to some discussion which would have been added to had there been time. Short as the discussion was it encroached upon the time allowable for the more important paper which followed. The discussion, it will be seen, was confined to alienists, while not a general physician, pathologist, or bacteriologist took part in it. The subject is so very important that it is a matter of great regret that it was not fully and freely threshed out. Such a discussion might have been invaluable to the investigators themselves.

### *School of Medicine of the Royal Colleges, Edinburgh.*

At a meeting of the governing board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary and registrar, Mr. R. N. Ramsay, reported that the number of students attending the school during the winter session, 1906–07, was 1048, and during the summer session, 1907, the number was 961.

### *Kingseat Asylum.*

The estimate of the maintenance account issued in connexion with the City District Lunacy Board for the year ending May 15th next shows a total of £11,556, compared with £10,380 last year. The account is based on the average number of patients in Kingseat Asylum for the year ending May 15th last being 414, and the probable number of admissions for the year ending May 15th next being 86, giving a total of 500, less 80 as the probable number of deaths and discharges during the year, and an average number of 10 boarded out, reducing the average number to 410, or with 70 officials and attendants added to 480. From the estimated expenditure of £11,556 falls to be deducted the balance of £485 at the credit of the account for the past year, leaving the sum to be provided at £11,070. The estimated average cost per head per annum on 410 inmates is £27. Last year the receipts were made up as follows: balance at credit of close of last account £665; board of patients, £10,358; and farm and garden, £3403; making with receipts not falling under the above heads a total of £14,439. The payments were: maintenance of patients and expenses, £10,381; furnishings and furniture, £267; farm and garden, £3303; and balance at credit at May 15th last, £485. At a committee meeting of the Aberdeen District Lunacy Board it was agreed that the cost for maintenance of inmates of Kingseat Asylum should be fixed at £27 per annum for the current year in place of £25 last year. A "vidimus" was submitted showing the sum to be raised by assessment under the heading of "providing accounts" for Kingseat Asylum to be £10,000—an increase of about £500 on the sum required for last year, and it was agreed to intimate to the General Board of Lunacy that this amount would have to be rated for. The present rate is 1·735*d.* both to owners and occupants and the increase will be a mere fraction. This rate is levied by the town council.

### *Dundee Sanatorium for Consumptives.*

At the annual meeting of the supporters of the Dundee Sanatorium it was reported that the average number of patients in the sanatorium during the year was 36. The average sum received per patient throughout the year was one guinea per week, while the cost to the institution was 38*s.* The chairman stated that the accounts had closed with a deficit of £670, which had, however, been entirely cleared off by an anonymous London friend. The deficit was due to the fact that the cost per patient was much in excess of the average sum received from local patients whom the committee felt it was bound to admit to the benefits of the institution.

### *Aberdeen University Anatomical and Anthropometrical Society.*

A meeting of this society was held in the anatomical department of Marischal College on July 6th, Professor R. W. Reid presiding. Intimation was made by the chairman of the presentation to the museum of a short cist by Mr. W. Bean Moir of Scotstown. Dr. A. Low gave a short description of the cist and its contents. Papers on anatomical subjects were read by Mr. J. Fettes and Mr. S. G. Trail. The following office-bearers were appointed for the ensuing year:—President: Professor R. W. Reid. Vice-Presidents: Dr. Alexander Low, Dr. R. W. Salmond, and Mr. James Watt. Secretary: Mr. N. J. Calder. Recording secretary: Mr. J. W. Fiddes. Treasurer: Mr. R. Richards.

### *The Montrose Asylum Tragedy: the Official Inquiry.*

The result of the inquiry by the house committee of the Montrose Asylum into the circumstances connected with the recent tragedy was submitted to the managers for their approval at a meeting held last week. The report stated that the committee had carefully inspected the scene of the tragedy and had taken the evidence of Dr. J. G. Havelock and various other officials. The committee was of opinion that no blame could be attached to any of the officials. It was clearly proved that Simpson was a well-conducted and peaceable inmate and that he was in feeble health at the time of the fatal occurrence. Searching inquiry was also made into the management of the male part of the hospital during the night, and the committee recommends: (1) that instead of one night attendant there should be two, with the view of giving increased inspection to the various wards in the hospital; (2) that another sub-matron should be appointed to supervise the night attendants in the whole of the various buildings; and (3) that night attendants should not be allowed to undertake any work during the day without the sanction of the medical superintendent. In the course of the inquiry it was elicited that the night attendant had been working on a farm for a number of hours every forenoon. The report was unanimously approved of by the managers.

July 9th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Rainfall in June in Ulster.*

JUNE has been the wettest month, it is said, for 20 years, rain falling on 26 days to the amount of 5·63 inches. In June, 1906, the rainfall was only 1·23 inches, and in the same year up to the end of June 15·43 inches fell, while this year, for the same period, 20·62 inches have fallen. In 1889 the rainfall in June was only 0·3 of an inch. An inch of water represents 100 tons per acre.

### *Cerebro-spinal Fever in Belfast.*

During the week ending June 29th 11 cases of "spotted fever" were notified, as against 16 in the previous week. Since the meeting of the public health committee on June 27th up to the next meeting on July 4th only five cases had been notified, as against 14 in the previous week, and for the week ended Saturday, June 29th, six deaths were reported, as against 20 in the week ended June 22nd. Of 87 cases in the fever hospital at Purdysburn 37 were on July 4th suffering from cerebro-spinal meningitis.

### *The Mater Infirmorum Hospital, Belfast.*

As a result of the Saturday collection (June 29th) a total of £1142 (including £120 handed in at the hospital) was obtained, a sum larger than that of last year.

### *Cowan Heron Cottage Hospital, Dromore.*

At the seventh annual meeting of the governors and subscribers held on July 4th, references having been made to the gratifying results of the year's working and to the increase in last year's subscriptions, Mr. W. C. Heron, D.L., who presided, stated that he was anxious to assist still further the good work being done and to that end was at present having plans prepared for the extension of the hospital buildings by the erection of two convalescent wards.

### *The Belfast Asylum.*

At present there are 678 patients in the Belfast Asylum, 398 at Purdysburn new asylum, and at the Ballymena annexe 62. At a meeting of the asylum committee held on July 8th it was decided, at the request of one of the members, to make out a list of the paying patients.

July 9th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *A Monument to Professor Brouardel.*

A VERY influential committee has been formed for the purpose of erecting in Paris a monument to Professor Brouardel who died about a year ago and an obituary notice of whom appeared in THE LANCET of August 11th, 1906. Professor Brouardel was for many years a representative figure in the medical profession in France and his numerous writings, as well as his occupancy of important positions in international congresses, made his name universally known in medical circles. The committee has the patronage of the President of the Republic, the Minister of the Interior, and the Minister of Public Instruction. The President of the committee is M. E. Loubet and the list of vice-presidents contains more than a hundred names of persons eminent both in science and in public life. Subscriptions to the fund are received by MM. J. B. Baillière et Fils, 19, Rue Hautefeuille, Paris.

### *Proposed Non-medical Control of Medical and Surgical Work in the Paris Hospitals.*

The general council of the Sociétés Médicales d'Arrondissement de Paris et de la Seine has been recently considering a somewhat unusual question. The council had heard that M. Soller had offered to provide a fund for the creation of special departments which, though under non-medical direction, would have control over the medical and surgical work of the Paris hospitals. The council was of opinion that scientific knowledge could not be usefully applied in medical questions except by persons who had received a medical education, and in the interests of the patients it was necessary that the physicians and surgeons should be at liberty to employ whatever treatment they conscientiously believed to be best. A medical man was legally responsible for any imprudent or culpable act (*faute lourde*) committed in his professional work. The council was therefore strongly opposed to the suggested creation of a controlling authority composed of persons who had not received a medical training.

### *The Death of the Princess Henrietta, Daughter of Charles I. of England.*

In a paper read at a recent meeting of the Société de Médecine de Paris Professor Pozzi discussed some very interesting questions connected with the last illness of the Princess Henrietta, daughter of King Charles I. of England and wife of the Duke of Orleans. He said that the principal explanations which had been suggested were poison or acute peritonitis which might have proceeded either from perforation of a gastric ulcer or from perforation of a gangrenous appendix. Professor Pozzi, however, from an examination of the clinical and anatomical references in contemporary accounts of the case, has come to the conclusion that the death of the Princess in nine hours was due to profuse internal hæmorrhage caused by the rupture of an extra-uterine pregnancy in the first or second month. He drew attention to the complete agreement of the classical symptoms of this condition with those which were observed in the Princess's illness. He said that the absence of vomiting was fatal to the hypotheses of poisoning or peritonitis. As the lower part of the abdomen was not examined at the necropsy out of respect for the rank of the deceased, it was not surprising that pelvic hæmorrhage was overlooked.

### *Appointments.*

At a meeting of the Academy of Medicine held on July 2nd M. Bar was appointed a member in the section of obstetrics in succession to the late Professor Budin. The council of the Faculty of Medicine have made the following appointments to vacant chairs: M. Bar to the chair of clinical obstetrics, in succession to Professor Budin; M. Quénu to the chair of *médecine opératoire*, in succession to Professor Terrier; and M. Prenant of Nancy to the chair of histology, in succession to M. Mathias Duval.

July 9th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

### *Researches on Cancer.*

Professor von Leyden and Dr. Bergell, writing to the *Deutsche Medizinische Wochenschrift*, have made an interesting communication on cancer. They said that the endeavours to destroy cancer by certain ferments, such as pancreatin, were of no practical use, as by injections of this substance not only cancerous but also healthy tissue was attacked. During the course of their experiments they also examined other ferments of animal origin and in the liver they found one which acted on peptones which were resistant even against pancreatin. Injections of small quantities of this ferment into malignant growths produced a quickly progressive necrosis of the tissue. The naked-eye appearances consisted in softening and liquefaction of the tissue; microscopically it was seen that necrosis had occurred and that the nuclei of the cells had lost their staining capacity. Caseous degeneration was not observed, except in malignant growths occurring in mice. The principal feature of the injection was the selection made by the ferment between cancerous and healthy tissue, the necrosis being limited only to the malignant growth. It was not yet possible to use this procedure for therapeutic purposes, but the discovery was very important from a theoretical point of view. There was a marked difference between pancreatin and the liver ferment. Pancreatin digested the isolated albuminous substance of cancer and also the growth in the test-tube but produced only a small circumscribed solvent effect in the living growth. The liver ferment acted neither on the isolated albuminous constituents of cancer nor on the growth in a test-tube, but it had an extremely powerful action on the living growth, on carcinoma as well as on sarcoma. This fact led to the conclusion that the normal organism contained a specific hydrolytic ferment, deficiency of which caused the growth to increase.

### *The Treatment of Syphilis by Atoxyl.*

Professor Lassar has given in the *Berliner Klinische Wochenschrift* some details of the treatment of syphilis by atoxyl. He said that the efficacy of atoxyl against sleeping sickness, a disease caused by a protozoon, led to the conclusion that this remedy might be equally efficacious against other protozoal diseases. As the protozoal nature of syphilis has been acknowledged since the discovery of the spirochæta pallida by the late Dr. Schaudinn, atoxyl was tried as a remedy against this disease. Following the method recommended by Dr. Salmon of Paris, 0·5 gramme of atoxyl in a solution of 10 per cent. strength was injected every second day, the result being that the symptoms of recent syphilis disappeared. Undesirable complications, however, were caused by the cumulative action of the drug, especially disturbance of the patient's general health, but this ceased at once when the administration of atoxyl was stopped. A smaller dose was therefore used by Professor Lassar with excellent results in 25 cases of both recent and long-standing syphilis. Primary ulcers healed, papules underwent a regressive metamorphosis, annular forms of the exanthem faded, and gummatous infiltrations dried up. The effect of this treatment was, just as in the case of mercurial treatment, different in individual patients, showing itself sometimes quickly and sometimes slowly. In one case only no effect at all was observed, so that a course of mercury had to be given. It was remarkable that the spirochætæ continued to be present in the cases treated successfully by atoxyl.—The atoxyl treatment of syphilis was also discussed by Professor Lesser before a meeting of the Berlin Society of Internal Medicine. He first spoke against excision of the primary chancre and against the administration of mercury previously to the appearance of the secondary symptoms, both of these procedures being inadvisable in his opinion. He recommended the intermittent treatment according to Fournier's method during the first years after the infection. According to him the spirochætæ were not destroyed by mercury, although their virulence became diminished. Injections of atoxyl in large doses (six grammes have been administered) had a beneficial effect. The action of atoxyl was especially remarkable in "galloping" syphilis, where an improvement was obtained much more quickly than by mercury. He had also observed undesirable symptoms, especially albuminuria, so that caution in the use of the drug was absolutely necessary.

### *The Prevention of Tuberculosis.*

The annual conferences of the German committee for the prevention of tuberculosis and of the medical men holding appointments at sanatoriums connected with the anti-tuberculous movement were held at Berlin on May 20th and on May 24th and 25th respectively. Count Posadowsky presided over the meeting of the committee and Professor Fraenkel over that of the medical men. At the meeting of the committee Herr Kehl read a paper on the Struggle against Tuberculosis in the Country, explaining the reasons why the mortality of tuberculosis in the country exceeded the average mortality of the disease. He strongly recommended the establishment of small hospitals in rural districts where these institutions were evidently not numerous enough to meet the wants of the population. In addition to the hospitals he recommended that nurses brought up in the country and trained for a shorter period than those working in the towns should be appointed in rural districts. There ought to be courses of instruction for nurses and lectures for ladies who might eventually desire to act as honorary nurses in case of need, and a system of dispensaries ought to be established all over the country districts which hitherto had been left somewhat in the background as compared with the amount of work done for the towns. Another subject discussed in the meeting concerned the sanatoriums which were recently so unfavourably criticised, as reported in THE LANCET of May 11th, 1907, page 1328. All the speakers agreed that these attacks were quite unfounded. In the meeting of medical men addresses were delivered on the genesis of pulmonary tuberculosis from the bronchial glands through the lymphatics, and radiograms were shown in which the progress of tuberculous processes was seen. The principal subject of discussion was the tuberculin treatment. It was generally agreed that good results were obtained, especially by the old tuberculin of Professor Robert Koch; whilst some of the speakers preferred Marmorek's serum. Dr. Neissen of Stettin recommended the administration of an emulsion of tubercle bacilli in severe cases. The tuberculin treatment must of course be combined with hygienic and dietetic measures. Prejudicial effects due to the administration of tuberculin were not observed. No trustworthy report could be obtained on the effect of Professor von Behring's tularg, as he distributed the compound only under the condition that reports were to be made exclusively to himself.

### *Bad Brückenau.*

The Royal State Ministry of Finance, which has charge of the Royal Bavarian Baths, invited the medical men of Munich to pay a visit of inspection to the Royal Mineral Baths of Kissingen and Brückenau. These gentlemen therefore travelled on June 24th in a special train placed at their disposal to Kissingen and thence by automobile to Bad Brückenau. They especially visited the Wernarzer, Stahl, and Sinnberger springs which are renowned for their healing properties and entirely approved of the accommodation provided there; not a small amount of their praise was expended on the carbonic acid baths which are made as efficient as possible. In the afternoon a dinner was given by Kgl. Kommerzienrat Roth to the medical men and was attended by His Excellency Herr Kgl. Staatsminister von Pfaff and by other Government officials, altogether about 100 persons. Just after 5 o'clock in the evening the medical men travelled back to Munich by special train after expressing the greatest satisfaction with their visit to Bad Brückenau.

July 8th.

## COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

### *Appointment of an Englishman as a University Professor in Sweden.*

IT would seem that some dissatisfaction has been aroused in Swedish medical circles on account of the Medical Faculty of the University in Lund having decided to offer the recently established chair of pharmacology to a foreigner, Mr. Ernst Overton, Ph.D. Mr. Overton is by birth an Englishman but he completed his academical career in Zürich, where for some time he lectured on biology. His latest appointment was as assistant to the famous physiologist, Professor von Frey, in Würzburg. The fact that no Swedish pharmacologist was available at the time in question forced the Medical Faculty of the University of Lund to look abroad for a suitable man, and considering the excellent scientific qualifications of Mr. Overton, there can be no doubt that the choice has been very fortunate. The objectors to his appointment, however, lay stress on the circumstance that he has not passed any medical examination, as also on the regulation providing that foreigners appointed to chairs in the Swedish universities must profess the pure evangelical doctrine in religion. The first objection will undoubtedly form no serious obstacle as Mr. Overton's work in biology and physiology is an excellent preparation for the modern teaching of pharmacology; and the second will probably be met in a way suggested by the Chancellor of the University, Bishop Billing—namely, that the question be left undecided until Mr. Overton has acquired Swedish nationality when the difficulty will cease to exist.

### *The Treatment of Tuberculous Laryngitis.*

Dr. S. Bang, the medical director of the Tuberculosis Sanatorium of Silkeborg in Denmark, has constructed an apparatus for the treatment of tuberculous laryngitis by means of the electric light. Five or six years ago, when a member of the staff of the Finsen Light Institute, he made the preliminary experiments that have resulted in the simple and efficient apparatus which he has now been using for the last three years. As it is necessary to employ only "cold light" the source of light that has been selected is the arc lamp with iron electrodes, originally devised by Dr. Bang. The rays of this lamp are received by a rectangular quartz prism placed at the narrow end of a metal funnel which the patient takes into his mouth and from the hypotenuse of this prism the rays are totally reflected into the larynx. As with a current of 10 or 12 ampères about two minutes suffice to produce a very strong typical light reaction on the interior of the larynx, the surgeon can manipulate the apparatus during the whole exposure and can make sure that the rays really reach the diseased parts of the larynx. Dr. Bang thinks that the method will prove useful only in those cases in which it is possible to direct the reflected rays at a right angle to the affected area.

July 1st.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *Diagnostic Injection of Tuberculin in an Infant.*

AS medical men very seldom have an opportunity of witnessing the infection of a patient with tuberculosis and the subsequent development of the disease the following case, shown by Dr. von Perquet at a meeting of the Gesellschaft der Aerzte, possesses considerable interest. A child of five weeks of age was brought to him with eczema of the right cheek. This soon improved but an ulcer remained for some time, the child began to lose weight, and the family history revealed the influence of pulmonary tuberculosis. Three weeks later the glands of the neck became markedly enlarged, bronchitis followed, and when the child was 16 weeks old both the mother and the child were inoculated with tuberculin as a diagnostic measure with a positive result. This is the youngest patient on record in whom the injection of tuberculin proved the presence of tuberculous material in the system. When the child was five months old a tuberculous manifestation called tuberculid appeared on the skin, so that the infection was now proved even clinically. The site of the diagnostic injection, which at the same time is used for therapeutic injection, is a small pale red papule about a quarter of an inch in diameter.

### *A Case of Complicated Cataract.*

Professor Königstein showed at the same meeting a man who was suffering from cataract of the left eye and who had been sent to him from a distant country. The patient, whose right eye was very myopic, had six years ago sought relief for his cataract, but operation was refused on account of the perception of light being unsatisfactory. The vision subsequently improved a little, but he wished to be cured of his cataract. The appearance of the eye was very unusual and interesting. The entire anterior chamber was filled with glittering points, especially during lateral illumination, as if the cornea were studded with gold-dust. Most likely the reason of this remarkable phenomenon was to be found in very small particles of cholesterin lying in close apposition to Descemet's membrane and probably imbedded in the corneal parenchyma also. The pigmentation of these particles was due most likely to hæmoglobin. The formation of these bright points might be explained on the hypothesis that some time ago the capsule of the lens had burst and the substantia propria of the lens had undergone a regressive metamorphosis which produced the cholesterin. Bleeding often occurred in degenerated eyes and thus the pigmentation was easily accounted for.

### *The Collection and Disposal of Household Refuse.*

The question of dealing with the household refuse produced in a city of 2,000,000 inhabitants has for some time been engaging attention and the following results have been obtained from the experiments conducted by the municipal authorities. As regards the disposal of the dry material collected in the dustbins, the method giving the best result has been combustion. The refuse is collected by carts provided with special receptacles. All the dustbins are covered square boxes of a uniform shape and size, about 75 centimetres long, 50 centimetres high, and 50 centimetres wide. These boxes are pushed into the receptacle of the car, which is then closed by a lid, and the box is uncovered and emptied by turning a handle without any dust escaping into the street. The refuse is then conveyed to the "combustorium," where it is burned, except such portions as can be used otherwise. Old metal, tin ware, and glass are melted down in a special apparatus and used for industrial purposes, whilst the combustible material is used to generate steam for driving two dynamos for lighting the building. As yet these trials have been conducted on a small scale, but if the system is approved of and the refuse collected from the whole city is treated in this way the amount of energy obtained will be very considerable. The treatment of wet refuse, especially of an organic nature, has not hitherto yielded satisfactory results, and another series of experiments with this material has been instituted in the hope of using it as manure. The cost of refuse disposal on the system above described is very small and the process is even expected to be profitable for the municipality if conducted on a large scale, whilst it is undoubtedly the best way from the standpoint of hygiene and medicine. In particular, the method of collecting refuse without scattering dust is sure to be imitated by many corporations, whilst a fruitful source of contamination of the air, especially during the busiest hours of the day, is thus easily done away with.

### *Professor Chrobak's Resignation.*

Professor Chrobak, the celebrated gynæcologist, some time ago announced his intention of retiring from his academic position, but illness has unfortunately compelled him to hasten the preliminary stages and a few days ago, when the lectures of the summer term were concluded, he took leave of his pupils and his clinic. A large number of students, former and present assistants, and friends of the professor assembled in the lecture room of the gynæcological clinic to pay their respects. Representatives of the students and of the clinical staff bade the eminent teacher farewell and dwelt in their speeches on the great influence which he exercised on the minds of his surgical contemporaries. His conservative mind, his promptitude in action, his precision, and his interest in both patients and pupils were sufficient to impress his personality on the memory of every one of his friends. In his reply Professor Chrobak confessed that his one ruling principle which he wished to leave to his pupils was, *Primum non nocere* (first of all not to do any harm). This maxim ought to be kept in mind by every member of the profession, and especially by the obstetric surgeon, who was so often called on to assist nature in a physiological, not a pathological, condition. He admitted that he found it very hard to relinquish his post, to which he had devoted so many years, but failing health now left him no option. Meanwhile, until the successor of Professor Chrobak takes over the new clinic in the newly built General Hospital Dr. Peham, the last assistant of Professor Chrobak, will temporarily carry on all his official duties, including the examination of the candidates at the so-called "rigorosum" or severe final examination for the degree of M.D. This "interregnum" will continue for at least a year, as Professor von Rosthorn is not expected to relinquish his present position before the summer of 1908.

### *A Case of Malformation of the Skull and Clavicles.*

A rare combination of rudimentary clavicles and anomalies in the conformation of the skull, described by Santon and Pierre Marie under the name of "*dysostose-cléido crânienne*," was shown by Dr. Fuchs at a recent meeting of the Neurological Society. The patient was a man, 23 years old, and was being treated for catarrh of the eyes, when the remarkable conformation of his skull attracted attention. He was one of twins, but no other member of the family was abnormally developed; on the contrary, they were all tall and well built, whilst he was less that 5 feet (148 centimetres) in height. His head was disproportionally large, measuring 24 inches in circumference, 16 inches in length, and 17 inches in breadth. The fontanelles and the sutures were still open. His clavicles were represented only by short floating, moveable, osseous bands, about two inches long, so that his shoulders could be brought together to meet in front. The upper and lower jaws were also rudimentary, containing only ten teeth in all. X-ray photographs showed that the rest of the skeleton presented no abnormal formation. The man's intellectual and psychical faculties were not impaired and he was better educated than a person of his station in life usually was. His infraspinatus muscles were in a condition of aplasia so that his shoulder blades were more visible than normal.

July 8th.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

### *The Water-supply of Constantinople.*

CONSTANTINOPLE is supplied with drinkable water from several different reservoirs, some of which are of very large dimensions. These reservoirs are commonly called "the bends," and the chief and most important among them are seven in number. The best known are the "bends" of Topouzlou, Validé-Sultane, Sultan-Mahmoud, Belgrad, Aïvala, and Tonourlou. The first two, constructed two centuries ago, supply with water the European quarter Pera and its adjoining districts. The numerous fountains of Stamboul receive their water from the other four reservoirs. The largest "bend" is that near the village of Belgrad, several hours distant from the metropolis. It receives water from three different rivers and requires one hour and a half to be visited in all its length. It is situated in a most picturesque locality and forms in the spring and summer months a much-frequented and sought-after place for excursions. Nearer to the capital are the reservoirs of Validé-Sultane, Sultan-Mahmoud, and Topouzlou. The first is 114 years old and is very solidly built. Its height is over ten metres. The thickness of its walls is seven metres. It bears an inscription giving the name of the foundress and reproduces in chronograms the year of the *hegira* 1211. The most modern "bend" is that constructed by Sultan-Mahmoud (the "Reformer"), who reigned from 1808 till 1839. It is considerably larger than the former reservoir, its height measuring about 16 metres. The waters of the "bends" come out through numerous taps, pass through elaborate wire gratings, traverse an aqueduct, and are then gathered up in subterranean conduits for final distribution. At present all the reservoirs are well filled with water in consequence of the late frequent rains. As a rule, not all the taps are working at a time. Of the 60 taps, for instance, supplying Pera with drinkable water only 25 are opened. The supply is, however, perfectly sufficient for the needs of the population. The quality of the water is not always of a high standard of purity. On several occasions chemical and microscopical analyses have been made with unsatisfactory results. It has been found that the distant sources especially are frequently contaminated. Some time ago a special commission was instituted for the purpose of investigating the matter, so important for the health and well-being of the general public.

### *Regulations Concerning the Sale of Fish.*

The municipality of Constantinople has considered and accepted the following proposals concerning the sale of fish on the fish markets submitted by the commission on public hygiene. The measures, which, if properly executed, will prove of great benefit to the general health of the population, are as follows: 1. Fish must henceforward never be exposed for sale in the open street in receptacles of doubtful cleanliness. 2. Fish must be sold only in shops paved and tessellated with marble (which is so cheap in the East) or with plaques of the so-called Malta stone. 3. The fish must be washed and kept fresh for consumption by a special wire system devised by the commission on public hygiene. 4. The municipal inspectors will visit the fish shops every day and will confiscate and throw into the sea any fish of doubtful freshness, inflicting at the same time severe punishments on contraveners. The municipality has also decided to erect spacious fish markets in the principal quarters of the capital as well as in some suburbs and in Cadikeuy (the ancient Chalcedon) on the Asiatic shore.

### *Miscellaneous Notes.*

Butter, whether of native origin or imported from other countries, will henceforward be submitted to a strict chemical and microscopical examination at all the custom houses, as it has been found almost always to be adulterated. —The large population of Aleppo will be provided with canalisation works and good drinkable water from the reservoir near Heilani. A "mazbata" has been signed by Nazim Pasha and submitted to the Sublime Porte.—From the mortality returns of last week it appears that no case of cerebro-spinal meningitis occurred anywhere in Constantinople or its suburbs. Scarlet fever, however, is still raging in some districts on the Golden Horn.

July 2nd.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

### *The Reduction in Plague Mortality.*

THE recrudescence of plague this year, the severest which India has experienced, has during the past few weeks rapidly abated. At the end of May 52,098 deaths in one week were recorded but a rapid drop has brought the mortality during the past week to less than 30,000. The decline is general but the chief centres are still in the Punjab and the United Provinces. The disease has sunk into comparative insignificance in the Bombay Presidency where formerly it was so extensive and so virulent.

### *A Dangerous Plague Scare in the Punjab.*

A plague scare of a serious character has recently occurred in the Punjab. Two men were charged with having circulated false reports with intent to cause alarm to the public to the effect that plague was being widely spread through the instrumentality of agents of the Government who were employed in poisoning wells and streams with plague germs. One man at a public meeting stated that plague was in reality non-existent but that the Government was putting poison into wells and streams in order to kill off the surplus population. About the same time the people of the district were thrown into a wild state of excitement by the finding of some balls of flour or similar substance in various tanks and fountains which was the work of an accomplice. The chief culprit was sentenced to two years' rigorous imprisonment and the accomplice to 18 months.

### *Cholera in Kashmir.*

In addition to plague Kashmir has been experiencing a severe epidemic of cholera. For the week ending June 10th no less than 2293 cases and 1315 deaths were reported.

### *The Practice of "Sati."*

The practice of sati still survives in some parts of India though the cases reported are few and far between. Though prohibited by law the practice is apparently upheld even by educated Indians. In a Calcutta native paper there was recently given an account of a case and the editorial article was couched in the most approving tones. A Hindu in bad health went to Puri and died there. His wife when she heard of his death poisoned herself with opium, but before taking this course she wrote a note to her brother: "Don't grieve for me, brother. I follow him to whom I was intrusted by my parents." Satis by poison, known as "cold" satis or "white" satis, are far more common in India, particularly in Bengal, than is generally believed. It is argued that there is something pathetic and noble in the attitude of a wife who refuses to outlive her husband. The writer goes on to say: "Before the law interfered the burning alive of widows was considered obligatory by certain castes, and in view of the opinions expressed by educated Bengali gentlemen the question arises whether sati would not be introduced as one of the consequences of swaraj." I may add that this swaraj is a sort of reaction to old Indian ways and traditions as against the adoption of anything belonging to Western civilisation.

### *The Grant Medical College, Bombay.*

The annual report of the Grant Medical College, Bombay, for the year 1906–07 states that the new M.B., B.S. degrees were passed by the senate of the university and sanctioned by the Government during the year, and the courses of study for these degrees have been begun at the college since January last. At the examinations for the diploma of L.M. and S. in June and November, 1906, there were 195 candidates, of whom 55 passed; six of the successful candidates were females. For the degree of M.D. there was one candidate, and he was successful. The total number of students is 638, including 100 Christians, 260 Hindus, 252 Parsis, 21 Mahomedans, and five Jews. A minor chair in bacteriology, to which Dr. N. F. Surveyor has been appointed, and two additional tutorships, one in pathology and the other in anatomy, have been sanctioned by Government. Lady Moore's bequest of £2000 has been utilised in constructing an operation theatre in connexion with the Sir Jamsetji Jeejeebhoy Hospital to be named the Sir William Moore operating theatre. The foundation stone of this theatre was laid by Lord Lamington, Governor of Bombay, in September, 1906, with Masonic rites. On the same day Lord Lamington also laid the foundation stone of the Sir Cowasji Jehangir Ophthalmic Hospital extension, to which Sir Cowasji Jehangir has contributed a munificent donation of 30,000 rupees.

June 20th.

THE PREVENTION OF CRUELTY TO CHILDREN.—On July 4th a meeting was held at Terry's Theatre, Strand, W.C., with the object of forming a committee for the Strand district to work on behalf of the National Society for the Prevention of Cruelty to Children in connexion with the Westminster branch. Colonel Clifford-Probyn, L.C.C., presided, and was supported by, among others, Mr. Edward Terry and Mrs. Terry, the Rev. J. H. S. Pennington and Mrs. Pennington, and Mr. R. J. Parr, director of the society. Mr. Parr pointed out that the objects of the society were to prevent the public and private wrongs of children and the corruption of their morals, and to enforce the laws which have been made for their protection. Last year the society dealt with 40,000 cases affecting 115,000 children. There was not the same amount of cruelty now as there was 23 years ago, but still the facts which came under the notice of the society were appalling. A society which preserved infant life and protected children from suffering had a strong claim on all men and women who believed in the future supremacy of the race. They were anxious to extend the web of their organisation throughout the country and he hoped that the meeting would result in a further extension of their work. On the proposition of Mr. Edward Terry, who incidentally mentioned that he belonged to societies which were responsible for some 3000 children, it was unanimously agreed that a committee of the National Society for the Prevention of Cruelty to Children should be formed for the Strand division.

# Obituary.

## SIR WILLIAM HENRY BROADBENT, BART., K.C.V.O., M.D. LOND., F.R C.P. LOND., LL.D. EDIN. & ST. AND. & TORONTO, D.SC. LEEDS, F.R.S.

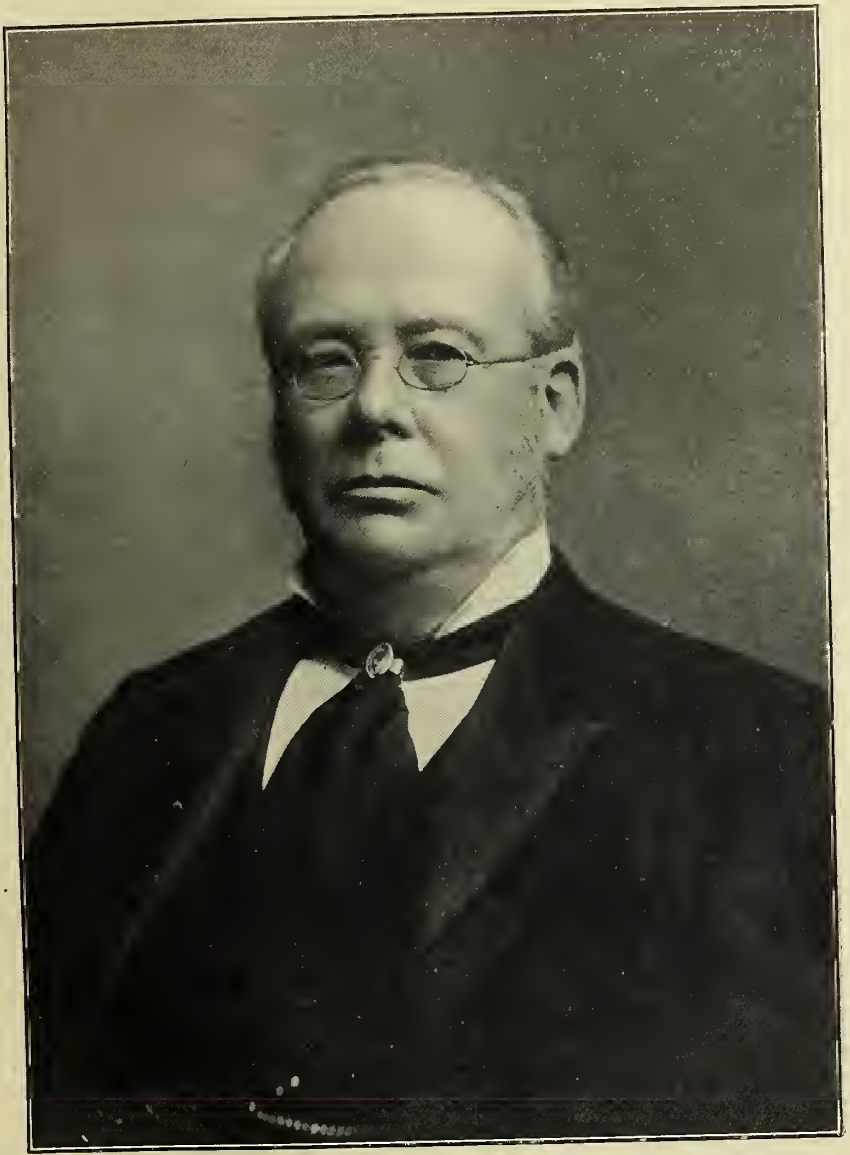
COMMANDER OF THE LEGION OF HONOUR; PHYSICIAN IN ORDINARY
TO H.M. THE KING AND H.R.H. THE PRINCE OF WALES;
CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL,
THE LONDON FEVER HOSPITAL, AND THE
NEW HOSPITAL FOR WOMEN.

THE hand of death has been heavy in the ranks of the most honoured of the medical profession during this year. It has been our sad duty to chronicle recently the loss of Dr. Robert Barnes, Sir Joseph Fayrer, Sir William Gairdner, and Dr. E. H. Bennett, and now is added the no less painful task of writing the last record of another great and strong man whose influence made a deep mark on the practice of medicine during the nineteenth century—a mark that will remain indelible, for the subject of this memoir up to the illness that led to his death evinced the strongest and most practical interest in many of those beneficent movements for united national and professional action in the battle against disease that form such a hopeful feature of the present times. Sir William Broadbent well deserved the titular distinction that came to him as a direct result of the gratitude of his Sovereign no less than of his distinguished professional ability, but we may begin our review of his career by stating that in the minds of his many friends there will be uppermost just now not the long list of professional and official honours that he so worthily earned, but the remembrance of a kind, genial, upright gentleman of whom it may be said with literal accuracy that he was the friend of the fatherless and the afflicted. To all these friends, and in still greater degree to his immediate family, we offer on behalf of our readers the expression of our deep sympathy in their irreparable loss.

Sir William Broadbent was the son of John Broadbent of Longwood Edge, Huddersfield, where he was born on Jan. 23rd, 1835. He was educated at Huddersfield College, which institution he left at the age of 16, intending, in deference to his father's wishes, to embark on a business career. Commerce, however, was not congenial to his tastes, and being permitted to follow his bent, which was towards medicine, he proceeded to the Owens College, Manchester, subsequently entering the Royal School of Medicine in that town. His student career was a brilliant one, and this was all the more creditable to him because he had no great advantages at starting. It was then the days of apprenticeship and while a mere lad with very little money to spare, and working in the distracting surroundings of a general practice, he gained medals in materia medica, botany, and midwifery in 1855 and in the following year medals in anatomy, physiology, medicine, surgery, and operative surgery. With this record it is not surprising that he gained great distinctions further afield, carrying off the gold medals in chemistry and in anatomy and physiology at the University of London in the first M.B. examination, and in the final in 1858 graduating with first-class honours in medicine and the gold medal in obstetric medicine. Previously to his final examination in London he spent eight months in Paris studying medicine, and he maintained an active interest in French medical affairs until the end of his days. In 1858 he came to London and attached himself to St. Mary's Hospital, a connexion which had a very beneficial effect in shaping the fortunes of that institution, as all those who know the history of the hospital and its medical school will testify. He held the post of obstetric officer there and both then and for some time after showed a marked predilection for that branch of the profession; indeed, nine years later he contributed a paper in the Transactions of the Obstetrical Society of London.

He was, however, destined to turn to medicine for the main business of his life and this decision was, perhaps, due to the stimulating influence of Sibson, to whom he became house physician, and in whose wards he had the privilege of listening to clinical teaching which, at any rate in relation to diseases of the chest, was at that time not to be equalled in London. It is not surprising that a teacher who loved his subject to such an extent that he would spend half an hour listening to a murmur should in some way mould the mind of his brilliant junior, and Broadbent's subsequent work in diseases of the heart was well worthy of his distinguished master. Sibson's influence naturally also turned his thoughts to pathology, for no one was more zealous in correcting the speculations of the wards by the revelations of the post-mortem room; and in 1859 young Broadbent was appointed pathologist to the hospital. The following year he took his doctorate at the University of London and began his long teaching career of 36 years in the medical school of St. Mary's Hospital. The diversity of his scientific attainments is shown by the fact that he successively held the posts of lecturer in zoology, physiology, pathology, and medicine. He was also medical superintendent of St. Mary's Hospital for a time and in 1864 he was elected physician to out-patients at the same hospital. In 1861 he became a Member and in 1869 a Fellow of the Royal College of Physicians of London. He held office on the medical staffs of several other hospitals besides St. Mary's Hospital, being appointed successively out-patient physician to the Western General Dispensary, physician to the London Fever Hospital, and later to the New Hospital for Women. But it is with St. Mary's Hospital that his name will always be associated. For 17 years Broadbent held the post of lecturer at St. Mary's Hospital, first in conjunction with the late Dr. King Chambers, from 1871 to 1877, then alone until 1882, and finally in conjunction with Dr. W. B. Cheadle until 1888. Although his interest naturally embraced the whole of inner medicine at this time he turned his more particular attention to the study of diseases of the heart and of the nervous system. About 1870 he enunciated the hypothesis that gave him his chief prominence in the field of neurology in an article contributed to the *British and Foreign Medico-Chirurgical Review* on the Association of Nerve Nuclei, by which he sought to explain the immunity of the bilaterally associated muscles from paralysis in hemiplegia. The subject of aphasia also arrested his attention and from time to time he published some interesting theories in connexion with that very vexed matter. He maintained his interest in this subject until the end of his life, and one of his most recent publications had reference to the cerebral mechanism of speech production, in which he considered from an original point of view the phenomena of word-blindness, especially in relation to the education of children. In 1888 he resigned his lectureship in medicine to take up that in clinical medicine in his hospital, and his teaching in the wards will be remembered with gratitude by many of his former pupils. After his appointment to the staff of St. Mary's Hospital his own practice as a consultant began rapidly to increase, and it was soon evident that he was destined to attain to professional pre-eminence. In 1887 at the Royal College of Physicians of London he delivered the Croonian lectures on the pulse, and these addresses stamped him as an acute observer and original thinker. They formed the groundwork of a book which he published 13 years later on the same subject, a book that should become a classic as a record of what the unaided finger could appreciate before the days of the clinical employment of the sphygmomanometer. In 1884 he delivered before the Harveian Society a set of lectures on Prognosis in Valvular Disease of the Heart, and in 1891 when it fell to him to deliver the Lumleian lectures he chose for his subject "Prognosis in Structural Diseases of the Heart."

Writing in collaboration with his eldest son, Dr. John Broadbent, in 1896 Sir William Broadbent produced a book on heart disease which is unquestionably one of the best works that has been published on that subject. Although his collaborator has been chiefly responsible for the latest edition, Sir William Broadbent accepted full responsibility for the first, and the manner of his writing gives a good insight into his method of thought and teaching. It was above all things practical and such points of outstanding importance as prognosis and treatment received far more attention than abstruse speculations on doubtful problems in hæmo-dynamics. Sir William Broadbent was content in dealing with any debateable matter to fix upon the explanation that most coincided with his own common sense, and with no more ado to pass on to something of greater clinical import. As an instance of his simple method of dealing with puzzling points we may quote his lucid little discussion on the origin of the presystolic murmur in cases of pure aortic regurgitation, the murmur that is associated with the name of Austin Flint. His classification of mitral stenosis, again, is of real practical



SIR WILLIAM H. BROADBENT, BART., K.C.V.O., M.D., F.R.S., &c.

*(From a photograph by Messrs. Elliott and Fry.)*

value in helping the student to appreciate the natural history of a lesion the correct interpretation of which often causes considerable trouble. The sections on prognosis were founded on matter which in the original lectures was very controversial, and it cannot be doubted that Broadbent's sound teaching on the point considerably helped the profession to the formation of the views which are now generally held. Other official lectures which he delivered were the Lettsomian, in which he considered Syphilitic Affections of the Nervous System, and in 1894 the Cavendish lecture on Some Points in the Treatment of Typhoid Fever. We had the pleasure of publishing all these dissertations in THE LANCET and know fully that their practical value was appreciated by our readers. He held office in many prominent medical societies, being successively president of the Harveian Society of London, the Medical Society of London, the Clinical Society, and the Neurological Society. In 1888–89, and again in 1895–96, he was a Censor of the Royal College of Physicians of London, and on at least two occasions he was within an ace of being elected to the presidency of that distinguished corporation.

In 1892 Broadbent was appointed physician-in-ordinary to H.R.H. the Prince of Wales, now our King, and the following year Queen Victoria conferred a baronetcy on him on the occasion of the marriage of the present Prince of Wales, then Duke of York, whom he had attended in an attack of typhoid fever two years previously. In 1898 he was appointed physician-extraordinary to the late Queen and he was physician-in-ordinary to His Majesty the King and to H.R.H. the Prince of Wales, which offices he held at the time of his death. He was, moreover, the recipient of many academical distinctions, being made an honorary LL.D. of Edinburgh in 1898 and of St. Andrews in the following year. In 1904 the University of Leeds made him an honorary Doctor of Science, and he received his last degree *honoris causâ* as late as the September of 1906, when the University of Toronto in special convocation conferred on him its LL.D. on the occasion of the meeting of the British Medical Association in that city. In 1897 Broadbent received the blue ribbon of the scientific world, when his memoirs bearing on the physiology and pathology of the nervous system and heart and also on the scientific principles of therapeutics gained him the Fellowship of the Royal Society. In 1896 he retired from active service on the staff of St. Mary's Hospital and in the following year he was presented by his former colleagues and students with a handsome service of silver plate in recognition of his merits as a clinician and teacher.

During the best years of his life he took a very active interest in all schemes of a corporate nature to promote either the welfare of his profession or the health of the nation. That by which he best deserves remembrance as showing such a fine side of his character is the British Medical Benevolent Fund, of which he was treasurer and president for many years, and on behalf of which he made frequent appeals in our columns. The problem of tuberculosis greatly occupied his attention. He was chairman of the council of the National Association for the Prevention of Tuberculosis and took a prominent part in connexion with the King's Sanatorium; he was very anxious to see some scheme carried through for the national provision of sanatoriums for workers. Another object which was very close to his heart was the establishment of a central body for the control of the London hospitals that would avert a clashing of interests between the various hospital funds. At one time he devoted a good deal of attention to the question of the duration of quarantine and infectivity in contagious disease and in 1889 he wrote on this important matter. He was a vice-president of the Cancer Research Society, and we may repeat that there was scarcely any great movement organised in behalf of national public health which did not gain his active support. We may quote other instances in the movement in favour of teaching hygiene and temperance on which he both wrote and spoke in 1905 and his support of the colonies for epileptics. He was a governor of Epsom College and he took a keen interest in his old college at Manchester, where he delivered an introductory address in 1892. We have mentioned that he maintained a lively interest in foreign medicine; he was an honorary member of many distinguished societies, such as the Verein für Innere Medicin, Berlin, the Imperial Society of Constantinople, and the Société Médicale de Genève. It was to the medical profession in France, however, that his name was best known. On the occasion of the banquet given to the French physicians and surgeons by their English colleagues when they visited London in the autumn of 1904 Sir William Broadbent made a most admirable and urbane chairman, and at the return visit to Paris during the next year he replied for the English guests at the banquet at the Grand Hotel, under the chairmanship of Professor Bouchard. This occasion must have been to Sir William Broadbent one of the most memorable of his life, for after dinner, amidst a scene of truly Gallic enthusiasm, the chairman announced that he had received a message from the President of the Republic commanding him to bestow the Grand Cross and the Insignia of a Commander of the Legion of Honour on his distinguished guest, and there was such applause consequent on the act that Sir William Broadbent's reply could scarcely be heard.

We have already alluded to several of Broadbent's contributions to literature and do not propose to give a complete bibliography, but we may mention a few more of the most important of his writings, viz.: "Theory of Construction of the Nervous System," "Structure of the Cerebral Hemispheres," "Mechanism of Speech and Thought," "Ingravescent Apoplexy," "Angina Pectoris," "Adherent Pericardium," "The Application of Chemical Principles in the Action of Remedies and Poisons," "Arterial Pressure in Bright's Disease," "The Remote Effects of Remedies," "Word-Blindness and Memory," "Vascular Tension," "Adherent Pericardium," "Myoidema," "Peritonitis," "Blood Pressure," "Aphasia," and others, many of which appeared in the columns of this journal.

The following appreciation of Sir William Broadbent as hospital teacher and member of a hospital staff is from the pen of one of his colleagues at St. Mary's Hospital:—

"It is some ten years since Sir William Broadbent gave up active work at St. Mary's Hospital, but those who have since succeeded him as members of the staff are for the most part his old pupils and they with his former colleagues deeply lament his death. For Sir William Broadbent made the interests of St. Mary's Hospital his interests and there was no movement initiated for the good of hospital or school into which he did not enter with enthusiasm and which did not receive his active support and encouragement. Busy as he was, he ever found time to attend the board of management whenever any matter of importance came up for settlement. He was one of those who provided the residential college for the students of St. Mary's Hospital, and he gave the first of a series of those post-graduate lectures which, instituted at St. Mary's, have become permanently established in London, and it was greatly due to his efforts that the enlargement of the hospital and the addition of the Clarence wing were due. At the various social gatherings and entertainments connected with hospital life, notwithstanding the many calls upon him, Sir William Broadbent always found time to be present, not as a duty but as one who enjoyed them, and brought pleasure to others by his genial presence. Throughout a busy life he never, unless actually away from town, omitted his regular visits to the wards, and it was there that the fruits of his thoughtful labours, more especially in connexion with diseases of the circulation and of the nervous system, were made manifest to those who accompanied him. For his clinical instinct, his delicacy of touch, his grasp of a case, and his remarkable powers of diagnosis were more than marked—they were impressive. Sir William Broadbent at his best was rivalled as a clinician by few in London or anywhere else. Unlike many who devote care to diagnosis, he did not consider he had done his work when he had made his diagnosis, but to the treatment of the case there was always given much care and consideration. As a teacher Sir William Broadbent was not one of those who by rhetorical art and fluent expression attracted large numbers of the type of students whose ambition is to pass their examination without acquiring more than the bare minimum of knowledge; these he did not seek to attract, nor was his teaching of the level of the text-book routine or of the tutorial style, but at the bedside he was ever ready to instruct those who wished to excel and to appreciate those minuter points in the examination and observation which made Broadbent one of the select few. No one privileged to watch his work in the wards could be anything but impressed with his powers of observation and his refinement in diagnostic skill. He was ever fresh in mind, anxious to hear and to give weight to the observations of others, and ever ready to give fair trial to new methods of treatment. He was a good friend with a generous nature, always encouraging to his juniors and active in assisting them. Hundreds of his old pupils and resident officers owe their success to his teaching and example and bear for him an affection which he reciprocated. Others than the writer may remember among his other hospitalities the delightful evening which he afforded to them, and not less to himself, in entertaining at dinner those who had been his house physicians during his 25 years' service at St. Mary's. He was ever a loyal and esteemed colleague, no better testimony of which could be found than the fact that when the period came for his retirement the staff unanimously petitioned the governing board to alter the laws of the hospital that he might benefit the hospital by an additional five years as visiting physician."

The details of Sir William Broadbent's last illness are probably known to most of our readers, for he never desired that any mystery should be made about them. Some nine months ago he had a severe attack of pneumonia. An empyema followed which was successfully relieved by operation, but he did not recover his strength. Latterly, however, he appeared to be making real progress, but at the end of last week symptoms of fever recurred, on Tuesday evening his condition became very grave, and he died on Wednesday morning, July 10th.

Sir William Broadbent married, in 1863, Eliza, daughter of Mr. John Harpin, of Birks House, Holmfirth, Yorkshire, by whom he had two sons and three daughters. His two sons, Dr. John Francis Harpin Broadbent, who succeeds his father in the baronetcy, and Dr. Walter Broadbent, are both members of the medical profession.

It has been arranged that the funeral shall take place on Saturday. The first part of the service will be held at St. Peter's, Vere-street, Oxford-street, at 11.30 A.M., and Canon Page Roberts will officiate. Afterwards the remains will be removed from London for interment at Wendover, Bucks.

## Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the second professional examination in Anatomy and Physiology on June 27th and 28th and July 1st and 2nd 95 candidates presented themselves, of whom 56 were approved and 39 were rejected. The following is a list of successful candidates :—

Rupert Blake Adams, St. Mary's Hospital; Francis Cooke Alton, St. Thomas's Hospital; Dinsha Darasha Baria, L.M. & S. Bombay, Bombay University; Albert Malcolm Barlow, London Hospital; Frank Bashford, St. Mary's Hospital; Maurice Beddow Bayly, Charing Cross Hospital; Edward Charles Beddows, Birmingham University; Guy Capper Birt, St. Thomas's Hospital; William Percy Bonner, London Hospital; Edward Moxon Browne, St. Bartholomew's Hospital; Edward Spencer Calthorpe, Charing Cross Hospital; Ralph George Dainty, Charing Cross Hospital; Samuel Danziger, Victoria University, Manchester; Frederic Nicklin Doubleday, Guy's Hospital; Arthur Downes, St. Bartholomew's Hospital; Frederick Charles Endean, M.P.S., Guy's Hospital; Hugh Arthur Evans, Westminster Hospital; Gilbert James French, Victoria University, Manchester; Gilbert Henry Colling St. George Griffiths, University College, Bristol; Alfred Edward Hamlin, St. Bartholomew's Hospital; Leonard Austin Harwood, Westminster and King's College Hospitals; Charles Ernest Howden, New Zealand University and London Hospital; Herbert Richard Barnes Hull, University College, Bristol; Stanley Gower Johnson, Middlesex Hospital; Homi Dorabji Kanga, B.A., L.M. and S. Bombay, Bombay University; Charles Haley Knowles, Leeds University; John Murgatroyd Land, Leeds University; Manly McWhinnie Lopez, University College, Bristol; Donald McCully, University College; Raymond Gabriel Maglione, Victoria University, Manchester; Philip Stanley Martin, University College; Henry Sinclair Mason, St. Mary's Hospital; Guy Matthews, King's College Hospital; James William Edwin Mendis, L.M. and S. Ceylon, Ceylon Medical College and King's College; Cyril Cassan Messiter, B.A. Cantab, Cambridge University and St. Bartholomew's Hospital; Thomas Alexander Milroy, Otago University and Glasgow University; Robert Sydney Overton, St. Thomas's Hospital; Percy Edward Hughes Patey, Guy's Hospital; Harry Platts, Guy's Hospital; Richard Bancroft Nevil Reade, St. Mary's Hospital; William Alfred Reynolds, University College, Bristol; Ernest Arthur Runting, Middlesex Hospital; Alec Linford Saul, Guy's Hospital; Edward Argent Saunders, Middlesex Hospital; William Shipton, B A. Centab., St. Thomas's Hospital; William Faulkner Valentine Simpson, London Hospital; Reginald Samuel Sherard Statham, University College, Bristol; Martin Phillips Thomas, B.A. Wales, King's College Hospital; Graham Yalden Thomson, Guy's Hospital; Walter Vincent Tothill, London Hospital; Ronsld Herbert Vicary, Cambridge University and St. Mary's Hospital; Percy Boyd Wallis, Cambridge University and King's College Hospital; Alexander Watson, London Hospital; John Ernest Price Watts, Westminster and King's College Hospitals; Gerald Whittington, Charing Cross Hospital; and Frederick Cecil Wright, St. Bartholomew's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated :—

PART I.

*Chemistry.*—H. Cox, Birmingham; V. P. Norman, Durham; and C. B. Welsby, London Hospital.

*Materia Medica and Pharmacy*—W. C. D'Eath, Charing Cross Hospital; and F. S. Hawks, King's College Hospital.

PART II.

*Anatomy.*—T. C. Clarke and W. E. Dimond, Liverpool; W. H. S. Hodge, St. Bartholomew's Hospital; W. S. Hughes, Charing Cross Hospital; E. M. Johnstone, Royal Free Hospital; J. A. Jones, Manchester; L. F. G. Lewis, St. Bartholomew's Hospital; D. J. McKinnon, Aberdeen; and P. E. H. Patey and H. C. Pugh, Guy's Hospital.

*Physiology.*—T. C. Clarke, Liverpool; E. C. Fisher, Royal Free Hospital; W. H. S. Hodge, St. Bartholomew's Hospital; E. M. Johnstone and A. Jonathan, Royal Free Hospital; J. A. Jones, Manchester; L. F. G. Lewis, St. Bartholomew's Hospital; and H. I. Welsh, St. Mary's Hospital.

UNIVERSITY OF BIRMINGHAM: FACULTY OF MEDICINE.—The following is a list of the successful candidates at examinations held in June :—

I. *Degree of Doctor of Medicine.*—Leonard George Joseph Mackey.

II. *Degrees of Bachelor of Medicine and Bachelor of Surgery.*—(*a*) Past student of Birmingham Medical School: William Frederick Ewart Ashton. (*b*) Under Ordinary Regulations: Class II.: Herbert Charles Horace Bracey, *†James Fenton, Philip James Mason, Nevill Coghill Penrose, Arthur Addison Sanders, Arthur John Smith, Rupert Wesley Thompson, and Herbert Henry Warren.

III. *Fourth Examination for the degrees of M.B., Ch.B.*—Class I.: *John Dale. Class II.: John Adams, Charlotte Bailey, George Henry Chavasse Mold, David Priestley Smith, Harold Cairns Terry, and Edward Vernon Whitby.

IV. *Third Examination for the degrees of M.B., Ch.B.—Part I., Pathology and Bacteriology.*—Class I.: *Herbert Henry Sampson. Class II.: Walter Charles Blackham, Norman Alexander Boswell, Harold Gordon Browning, Mary Clarke, John Selwyn Edwards, Harvey Atkins Evans, Humphrey Francis Humphreys, George Frederick Jotham, Violet Maud McCresdy, John Lichtenstein Ritchie, Harold Cairns Terry, Ethel Annie Waldron, and Kenneth Douglas Wilkinson. *Part II., Materia Medica and Pharmacy.*—Class I.: *Herbert Henry Sampson. Class II.: Walter Charles Blackham, Norman Alexander Boswell, Harold Gordon Browning, Mary Clarke, Humphrey Francis Humphreys, George Henry Chavasse Mold, Carl Euclid Molino, John Lichtenstein Ritchie, Ethel Annie Waldron, Harold Arthur Whitcombe, and Kenneth Douglas Wilkinson.

V. *Second Examination for the degrees of M.B., Ch.B.*—Class II.: Eric Walter Assinder, *Oscar Madeley Holden, Elizabeth Stephens Impey, and Ronald Douglas Nelson. Completed Examination: Charles William Hayward and Arthur Harry Newton. Passed in part of the Examination: Arthur McLean Pickup (Physiology and Comparative Anatomy) and (Henry Richmond (Biology).

VI. *First Examination for the degrees of M.B., Ch.B.*—Class I.: George Ernest Elkington. Class II.: Evan Davies, Christopher Charles Cole Court, John Lewis Anderton Grout, Travis Hampson, Charles Crawford Jones, Arthur Christopher Tibbits, Albert Joseph Tonkinson (External), and Alan Ayscough Wilkinson. Completed Examination: Charles Ernest Salt. Passed in part of the Examination: George Herbert Alabaster (External) (Chemistry and Physics, Robert Baxendell Coleman (Physics and Biology), Vivian Francis Eling Fox (Chemistry and Biology), and Percy Alfred Newton (Chemistry and Biology).

VII. *Second Examination for the Diploma in Dental Surgery.*—Alan Ayscough Wilkinson.

VIII. *Diploma in Public Health.—Parts I. and II.:* Ernest Frederick Wharton Bywater. *Part I.:* Tom William Beazeley and Alfred Ernest Remmett Weaver.

* Queen's scholarship. † Ingleby scholarship.

TRINITY COLLEGE, DUBLIN.—At examinations held in Trinity term the following candidates were successful:—

INTERMEDIATE MEDICAL EXAMINATION.

*Part I.*—Adrian Stokes, Charles M. Finny, Marius A. Diemont, Hilgard Müller, Roclif A. Albertyn, Vicars M. Fisher, Beatrice M. Hamilton, Perceval G. Leeman, Victor G. Best, David Duff (Sch.), John H. Woodroffe, Edmund F. Lawson (Sch.), John G. Ronaldson, Arthur C. Hsllowes, Benjamin A. Molyneux, Louis Trichard, John G. Dods, Edward P. Allman-Smith, Edwin B. Bate, Brinsley H. Moore, and Charles Pentland.

*Part II.*—Albert J. Stals, John D. Kernan, Cecil P. Smyly, David Duff (Sch.), Benjamin A. Molyneux, Edwin B. Bate, Alexander K. Cosgrave, Louis Trichard, Hugh S. Metcalfe, and William A. Nicholson.

FINAL MEDICAL EXAMINATION.

*Part I.*—Johannes C. Pretorius, John A. W. Ponton, Richard P. Hadden, Henry H. Ormsby, Charles W. Laird, Albert E. Wynne, William E. Hopkins, Samuel F. Charles, Frank Smartt, David G. Madill, Albert V. J. Richardson, James F. Clarke, George Halpin, Herbert V. Stanley, Gerald G. Mecredy, Dixie P. Clement, Arthur H. Laird, George B. M'Hutchison, Ernest C. Lambkin, Alexander S. M. Winder, James P. S. Dunn, Norman P. Jewell, and William H. M'Carthy.

PREVIOUS DENTAL EXAMINATION.

*Anatomy and Institutes of Medicine.*—George Elliott.

*Physics and Chemistry.*—Arthur A. Campbell and Kenneth C. MacNaught.

AWARDS.

Medical travelling prize: Robert E. Wright. Medical scholarships: Anatomy and institutes of medicine—Adams A. M'Connell (Trinity) and Thomas A. Hughes (Stewart). Physics, chemistry, botany, and zoology—Henry J. Smyly (Trinity) and Herbert de L. Crawford (Stewart). Purser medal in institutes of medicine: Charles M. Finny.

DONATIONS AND BEQUESTS.—Under the will of Mr. John Doyle Fry £1000 are bequeathed to the North-Eastern Hospital for Children to endow a "John D. Fry Cot."

IN the presence of a large gathering the Mayor of Falmouth on July 5th formally opened the new winter gardens which have been provided by the corporation for the town.

MEDICAL MAGISTRATE.—Mr. David Livingstone Davies, L.R.C.P. Lond., M.R.C.S. Eng., of Criccieth, North Wales, has been placed on the commission of the peace for the county of Carnarvon.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN.—Mr. W. Mitchell Roocroft, honorary surgeon to the institution, has been re-elected chairman of the board of management of the Wigan Infirmary for the ensuing year.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At Cardiff on June 28th the members of the class of the St. John Ambulance Association, held in connexion with the Cardiff branch of the National Union of Teachers, presented Miss Erie Evans, M.B. Lond., L.S.A., with a hypodermic syringe, and Mr. Alfred Howell, M.D. Lond., L.R.C.P. Lond., M.R.C.S. Eng., with an auroscope in appreciation of their services as honorary lecturers.

THE PLUMBERS' COMPANY.—At the quarterly court held at the Guildhall on July 6th the freedom of the Worshipful Company of Plumbers was conferred on W. G. Bishop, F. Dewhurst, A. Helsby, E. B. Sawyer, and W. Worthington, young plumbers from Cardiff, Ramsbottom, Leigh (Lancashire), Barry, and Blackpool respectively. They had passed, in honours, the Company's examination in workmanship and technical knowledge and the Master of the Company (Mr. W. D. Caröe), in addressing them on admission, reminded them that they were added to the Company's long roll of craftsmen which always included in earlier times, as at the present day, men distinguished among their fellows. He urged them, as new members of a very ancient body, to respect its best traditions and to realise the growing responsibility of plumbers to safeguard for the public the sanitary and water services that become more complex with the growth of towns, and consequently demand higher craftmanship, as well as closer coöperation between those who represent the plumbing craft and those whose official and professional duty it is to act for the public in framing regulations and specifications relating to plumbers' work. "The Company's mission," he said, "was to extend the principle on which the guild was founded—namely, that craftsmanship and citizenship should go hand in hand. The citizen should recognise and respect the craftsman and the craftsman should remember the duty which he owes to the citizen to give him good work."

PROFESSOR OSLER ON WOMEN DOCTORS.—Professor William Osler, in the course of an address delivered to the students of the London (Royal Free Hospital) School of Medicine for Women on July 4th, observed that women were specially adapted for work in connexion with diseases of women and children, but the trouble was that women did not believe in women and this mistrust was one of the serious problems concerning the progress and evolution of women. One of the most important things for the students to do was so to conduct their lives that other women would have trust in them. On the whole, he considered that medicine was a satisfactory profession and satisfactory for women, but if they entered it with the idea that they were going to get a return in pounds, shillings, and pence for everything they did, they would be making the greatest mistake. People had long learned to look upon the medical profession as something far higher than a mere money-getting affair. An excellent field of work for women was offered in the studies connected with the higher problems of scientific medicine and there were good careers in laboratory work open for women in many parts of the world. Institutions and asylums afforded a line of work for women and he would like to see women physicians connected with every asylum for the insane in the country. General practice was beset with so many hardships that he advised the students to take serious counsel with their teachers, especially those who had been in general practice, before entering upon that work. In India there was ample opportunity for women and he recommended them to consider it favourably.

UGANDA PROTECTORATE.—According to the Blue-book for 1905–06 just presented to Parliament Uganda progresses in prosperity, education, and methods of local administration. It has now reached the advanced stage when the rate of progress is bound to be steady and it exhibits all the evidence of being continuous. No complete census has yet been taken. The estimated population is about 4,000,000 but this is probably too low. 2319 Christian, native, and Mahomedan marriages were celebrated during the year. Amongst Europeans there were two marriages, 12 births, and four deaths. The registration of births and deaths of natives is not yet made compulsory. The medical department is amalgamated with East Africa and is under the charge of Lieutenant-Colonel J. Will, R.A.M.C., who is assisted in Uganda by one senior medical officer and ten medical officers. Six medical officers were also appointed to assist in the new extended scheme for the investigation of sleeping sickness, and four of these have already arrived. The total cost of the medical department was £16,180. The principal medical officer reports that the health of Government officials has been good. Better sanitation, better houses, with the addition of mosquito-proof doors and windows, and extensive clearing operations in the forest and jungle near many of the principal stations have been mainly responsible for this. Three deaths have occurred among European officials—two from injury and one from malaria. Seven officials were invalided. The commonest diseases among officials were malaria, tick fever, and diseases of the digestive organs. One official has contracted sleeping sickness. Among Europeans, official and non-official, 228 have come under treatment for various diseases, fever being the cause in about half the cases. There were three cases of blackwater fever during the year, with no deaths. It is difficult to form an opinion as to the general health of the native population, as only those in the immediate vicinity of the Government stations come in for treatment. Sleeping sickness, though on the decline in some districts, is very prevalent in others and still claims its thousands of victims. 113 natives are known to have died from small-pox. Venereal disease is also very rife. The health of the troops and of the police has been satisfactory. As to sleeping sickness, there was, unfortunately, nothing new in the way of treatment or prevention to report. Taking into consideration the numbers that have fallen victims to this disease in Usoga and North Kavirondo and the reduction in population already caused by it there is reason to believe that it is dying out in these two districts. During the end of the year a scheme of extended investigation of the disease was formulated and six medical officers were appointed to carry out this work. Their investigations up to Dec. 31st were of a preliminary nature and it will take some time before any practical result can be looked for. Each medical officer has been appointed to a district in which the disease is known to exist and the lines of investigation have so far been with the object of defining exactly the tsetse fly areas and the area in which locally infected cases are found, also of studying the habits of the fly. It will be very important in this investigation to win first the confidence of the natives. At Entebbe the most important sanitary measures carried out during the last year have been the provision of mosquito-proof doors and windows to a great many of the houses, extensive clearing operations in the forest and jungle in the vicinity, and the filling in of a large number of cesspools and other places where water used to collect. The new attempt to supply Entebbe with good water by means of two windmills and tanks has proved to be inadequate for the expanding requirements. Something like a small pumping station outside Entebbe, with a delivery tank placed in the centre of the town, would, perhaps, better meet the case. At Jinja better houses have been built and extensive bush-clearing has been carried out. During the year new offices and bath-rooms have been fitted to the large European hospital at Entebbe. The native hospital has been enlarged by the addition of two new wards. The Sleeping Sickness Hospital has been practically rebuilt, the walls having been considerably heightened and a cement floor and tin roof added. The present site of the Sleeping Sickness Laboratory has been thought unsuitable for many reasons. A new laboratory with large out-buildings and houses for the staff are under construction at a spot on the peninsula outside the township boundary. New hospitals and dispensaries have been built at Kampala, Jinja, Hoima, and Mbarara. There are no Government Asylums, poor houses, reformatories, &c., in the Protectorate.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes were awarded for the summer session. Barker anatomical prize (£31 10*s.*): G. S. Levis. Carmichael scholarship (£15): J. Menton. Gold medals in operative surgery: P. G. M. Elvery and T. Sheehy (equal). Stoney memorial gold medal in anatomy: Miss I. M. Clarke and G. C. Sneyd (equal). Practical histology: F. W. Warren, first prize (£2) and medal; and J. S. Pegum, second prize (£1) and certificate. Practical chemistry: H. C. Gilmore and J. Kirker (equal), first prize (£2) and medal. Public health and forensic medicine: H. Hunt, first prize (£2) and medal; and Miss C. F. Williamson, second prize (£1) and certificate. Materia medica: J. Menton, first prize (£2) and medal; and Miss C. F. Williamson, second prize (£1) and certificate. Biology: J. T. Duncan, first prize (£2) and medal; and P. V. F. Crowe, second prize (£1) and certificate. The lectures and practical courses of the winter session will commence on Tuesday, Oct. 15th.

PLAS MARIANDIR.—Some weeks ago it was mentioned by our Manchester correspondent that Plas Mariandir, at Penmaenmawr, had been taken as a seaside home for convalescents by the recently formed "Manchester and Salford Hospital Saturday and Convalescent Homes Fund Incorporated." (Surely the time is ripe for some genius to devise a simpler nomenclature for many of our institutions.) The formal opening by the Lord Mayor of Manchester took place on June 29th. The funds for the acquirement of the institutions—that at Arnside for women and that at Penmaenmawr for men—were raised by a bazaar in Manchester in the autumn of 1905. It is hoped, however, that they will be maintained and the convalescent homes movement be developed by the Hospital Saturday Fund, and also that the contributions on behalf of the hospitals will be increased. This seems a sanguine anticipation, but there is no doubt as to the ability of those interested to do this if they set themselves to the task. The present accommodation is for 45 or 50 men, and there is room for some enlargement. The urban council gave a luncheon to the Manchester and other visitors.

LITERARY INTELLIGENCE.—The next addition to the Oxford Medical Publications, to be ready next week, is "Operations of General Practice" by Mr. Edred M. Corner and Dr. H. I. Pinches. The volume contains upwards of 175 illustrations and it is meant to be a guide to the general practitioner in the performance of the more strictly surgical part of his daily routine. The Oxford University Press announces also that the first of the seven volumes of Professor Osler's "System of Medicine" is almost ready for publication. This volume deals with predisposition and immunity; diseases caused by physical, chemical, and organic agents, by vegetable parasites, by protozoa, by animal parasites, nutrition, and constitutional diseases. It has been arranged that the volumes shall be obtainable separately.—In our notice of the *Medical Directory* published by the American Medical Association which appeared last week we omitted to state that the Directory can be purchased from Messrs. W. B. Saunders Company, 9, Henrietta-street, Covent Garden, W.C. It is not necessary to apply to the American Medical Association for copies, as might have been gathered from our review.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *The Society of Apothecaries of London Act.*

AMONGST the Bills which received the Royal Assent last week was the Society of Apothecaries of London Bill.

### *The Home Work Inquiry.*

Amongst the witnesses who have given evidence before the select committee of the House of Commons which is inquiring into home work is Dr. R. Dudfield, medical officer of health of Paddington. He strongly urged on the committee that persons who took work to their own homes and performed it there for wages should register themselves with the local authorities. Without an arrangement of this kind complete protection from the spread of infectious diseases was impossible, especially in view of the fact that there was no compulsory notification of measles, whooping-cough, or phthisis.

### *A Royal Commission on Whisky.*

The Government proposes to recommend the appointment of a Royal Commission to inquire into, and report upon, the various questions raised by recent litigation as to what constitutes "whisky." The President of the Local Government Board, however, states that he cannot yet give the terms of reference to the Commission, nor have the names of the Commissioners been announced. It is expected that the Commissioners will include amongst them several chemical experts and representative gentlemen in the whisky trade, as well as one or two lawyers.

### *King Edward's Hospital Fund for London.*

The King Edward's Hospital Fund for London Bill has been read a third time in the House of Commons.

### *Lunacy in Scotland.*

The forty-ninth annual report of the General Board of Commissioners in Lunacy for Scotland has been presented to Parliament. In their report the Commissioners express their deep regret at the death of Sir JOHN CHEYNE, K.C., who had been a member of the Board since 1895. They go on to state that on Jan. 1st of the present year, exclusive of insane persons maintained at home by their natural guardians, there were in Scotland 17,593 insane persons of whom they had official cognisance. In that number is included the inmates of training schools for imbecile children and of the criminal lunatic department of Perth prison. Of these 2563 were maintained from private sources, 14,979 by parochial rates, and 51 at the expense of the State. As the total number of the insane on Jan. 1st, 1906, was 17,450, an increase has taken place in the past year of 143.

## HOUSE OF COMMONS.

### WEDNESDAY, JULY 3RD.

### *Insanitary Dwellings in Ireland.*

Answering Mr. O'SHAUGHNESSY, Mr. BIRRELL said: The Housing of the Working Classes Act, 1890, confers full powers on local authorities in Ireland to take proceedings with the object of having insanitary dwellings put into proper condition and in the event of default to secure the demolition of the insanitary buildings. The local authorities have no power to enter into possession of such dwellings or areas and to retain the receipts of the property in order to pay for repairs and it is not proposed to undertake legislation with that end.

### THURSDAY, JULY 4TH.

### *Tuberculosis in Ireland.*

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the recommendation of the medical superintendent officer of health of Belfast, Mr. H. W. Bailie, that the coöperation of all the medical practitioners of the city should be invited in the voluntary notification of tuberculosis and that great advantages would result therefrom in regard to precautions dealing with tuberculous houses and areas; whether the deaths from tuberculosis in Ireland were over 12,000 per annum, or 16 per cent. of the total deaths registered, and that the number in Belfast was exceptionally high; and whether, in view of the importance of the subject and the unanimous sentiment amongst Irish medical men in favour of its being dealt with promptly and thoroughly he would put himself in communication with the local authorities in Belfast, Dublin, and the principal centres of the country, with a view to taking such measures as would tend to mitigate the ravages of this disease.—Mr. BIRRELL replied: The attention of the Local Government Board has been called to the recommendation referred to in the first part of the question. The statements made in the second part of the question are substantially correct. The Local Government Board are constantly urging upon Irish local authorities the necessity for the full exercise of their powers under existing legislation with a view to checking the mortality from tuberculosis. With regard to the concluding part of the question I may say that I have already been in communication with the general council of the Irish county councils upon the subject of possible further legislation in this important matter and have promised to receive a deputation from the council on the subject in the coming autumn.

### *Report of the Medical Officer of Health of Portsmouth.*

Mr. BRAMSDON asked the President of the Local Government Board whether his attention had been called to statements in an official report of the medical officer of health of Portsmouth that during the past 12 months 67 diseased cows had been sold for human food at sums varying from 20*s.* to 80*s.* at certain country markets, and that the diseased meat of most of these cows had been disposed of in London; and, in the event of these statements being proved correct, what steps His Majesty's Government proposed to take to prevent such a state of affairs.—Mr. BRAMSDON further asked whether the attention of the right honourable gentleman had also been called to statements in an official report by the medical officer of health of Portsmouth to the effect that the milk from cows badly diseased with tuberculosis was systematically sold; and whether, taking into consideration the statement in the interim report of the Royal Commission on Human and Animal Tuberculosis to the effect that a considerable amount of disease and loss of life, especially amongst the young, must be attributed to the consumption of cow's milk containing tubercle bacilli, together with the returns of the Registrar-General, which showed that 10,000 children under five years of age die annually from various forms of tuberculosis, he would consider the advisability of the introduction by His Majesty's Government of legislation to prevent the keeping of tuberculous cows on dairy farms.—Mr. **BURNS** replied to both questions in the following terms: I am aware of the report referred to in the questions. As regards the first question I do not gather that it has been ascertained that the diseased meat of the cows mentioned in it has been disposed of in London, although London is stated to be the probable destination of many of the animals. I may point out that if any diseased animal or meat intended for the food of man is exposed for sale it is liable to inspection and seizure. The matters, however, to which the questions relate are receiving my consideration.

Mr. **BRAMSDON** also asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, whether his attention had been called to statements in an official report of the medical officer of health of Portsmouth, to the effect that milch cows badly diseased with tuberculosis were systematically sold for human food at certain country markets; and further, that these cows, though almost dying from disease, had up to the time of their being exposed for sale been used for the supply of milk, whether he would have the facts as stated investigated, and, if found correct, whether the Board of Agriculture would make an order, as empowered by the Diseases of Animals Act, 1894, making tuberculosis in animals the subject of administrative action by the Board.—Sir **EDWARD STRACHEY** answered: The attention of my noble friend (Earl Carrington) has been drawn to the report to which my honourable friend refers, but as it deals primarily with matters of public health he proposes to confer with the President of the Local Government Board before taking any action thereon.

### *Meat Inspection in Scotland.*

Mr. **WATT** asked the Secretary for Scotland if he would state what sums the following county local authorities paid in 1906, or 1905 if the later date was not available, for inspecting and supervising the slaughter of animals within their jurisdiction; whether, and in what cases, these sums were paid to veterinary surgeons or to medical practitioners; and what number of carcasses, if any, were condemned in these various counties as unfit for human food—viz., Renfrew, Dumbarton, Stirling, Ayr, Linlithgow, Lanark, and Peebles.—Mr. **SINCLAIR** replied: It is impossible to state for any of the counties named the sums paid in any year for inspecting and supervising the slaughter of animals. Such inspection and supervision as a rule forms part of the duties of the officers of the Public Health Department, more especially the sanitary inspectors. Such officers are paid inclusive salaries and it is impossible to state exactly the amount paid in respect of the above-mentioned duty. As regards the last part of the honourable Member's question, 35 carcasses were wholly condemned and internal organs and parts of 367 other carcasses were condemned during 1906; of these carcasses, one was condemned in Dumbartonshire, one in Stirlingshire, and the remainder in the upper middle wards of Lanarkshire. None were condemned in Renfrew, Linlithgow, Ayr, or Peebles. I may explain that in the counties other than the upper middle wards of Lanarkshire a considerable proportion of the meat consumed is supplied from the public slaughter-houses situated within the burghs. For example, I am informed that in the lower ward of Lanarkshire almost the whole of the meat is obtained from Glasgow.

## MONDAY, JULY 8TH.

### *The Consolidation of the Public Health Acts.*

Sir **IVOR HERBERT** asked the President of the Local Government Board whether, having regard to the inconvenience experienced by local authorities in the administration of the Public Health Acts, from the fact that the law had to be sought in a large number of public Acts, and in some cases was affected by private Acts of Parliament, he could hold out any hope of bringing in a Bill next year to consolidate all enactments bearing upon the public health and to confer equal powers in respect thereto on all local authorities. —Mr. **BURNS** replied: I am afraid that it would not be practicable to confer equal powers in respect of public health on all local authorities. This would involve an undue interference with special powers conferred by local Acts. Moreover, powers which might properly be conferred in respect of one district would not always be suitable to another of a different character. I realise the advantage there would be in consolidating the Public Health Acts, though I think it would probably be found necessary in the first instance to amend them in some respects. I cannot give any pledge as to legislation for next year, but I shall be glad when opportunity offers to take steps in the direction indicated.

### *The Sanitary Condition of Lewis.*

Mr. **WEIR** put a series of questions regarding the sanitary condition of the Island of Lewis to the Secretary for Scotland.—Mr. **SINCLAIR** replied that the local authority in the island was already raising and expending the full amount of its public health rate. However, he hoped to find means to enable it to do more in this respect. The whole question had his close attention.

Mr. **REES**: Arising out of the insanitary character attributed by the honourable Member to his constituency, may I ask the right honourable gentleman whether he will consider the advisability of lending to the Ross-shire county council the services of the medical officer for Colwyn Bay?—No answer was given.

### *Scarlet Fever in Stornoway.*

Mr. **WEIR** asked the Secretary for Scotland whether he was aware that at a recent meeting of the Stornoway town council public health sub-committee a letter was read from the medical officer stating that there was reason to believe that there were many cases of scarlet fever in the town which had not been notified and that these cases were causing the spread of the disease throughout the community; and, in view of the insanitary condition of the Island of Lewis, as reported by Dr. F. Dittmar, the medical inspector of the Local Government Board for Scotland, would he state what steps the Stornoway town council was taking to prevent the spread of the scarlet fever epidemic throughout the island.—Mr. **SINCLAIR** said in reply: I am aware of outbreak referred to and the Local Government Board has been and still is in communication with the local authority as to measures taken to prevent the spread of disease. The disease was of so mild a type that it was mistaken for a simple sore-throat and a number of cases escaped notification. The junior and infant departments of the public school were closed and will remain so for a further period of three weeks from June 24th.

### *The Medical Officer of Lewis.*

Mr. **WEIR** asked the Secretary for Scotland whether he was aware that, in defiance of the opinion expressed by the Local Government Board for Scotland that it was not possible for the duties attaching to the office of chief district medical officer in the Island of Lewis to be discharged by anyone resident in Dingwall, the Lewis district committee, at its meeting on June 26th, appointed a medical officer who was resident at Dingwall; and would steps be taken to see that the Board's views on the subject were not overriden by the local authority.—Mr. **SINCLAIR** answered: I am aware that the facts are as stated and the Board is considering what steps should be taken.

## TUESDAY, JULY 9TH.

### *The Plague in India.*

Mr. **FIELD** asked the Secretary of State for India whether he could state the total number of deaths in India from plague since it appeared, giving the number in each year; and what measures had been taken with a view of prevention.—Mr. **MORLEY** (by printed answer) replied: According to a return which the Government of India has lately issued the deaths are: 1896, 1704; 1897, 56,055; 1898, 117,953; 1899, 134,788; 1900, 93.150; 1901, 273,559; 1902, 577,427; 1903, 851,263; 1904, 1,022,299; 1905, 950,863; 1906, 332,181; 1907 (Jan. 1st to May 31st), 991,003; total, 5,402,245. The preventive measures which have proved most successful are (1) the systematic destruction of rats; (2) disinfection of houses and clothing; (3) evacuation of infected localities; (4) inspection of travellers; (5) segregation of the sick; and (6) inoculation. I hope shortly to lay papers upon the table which will give a fuller account of the policy of the Government of India.

### *Medical Officers and Veterinary Surgeons in Ireland.*

Mr. **SLOAN** asked the Chief Secretary to the Lord Lieutenant of Ireland whether, in view of the fact that public bodies usually took the opinion of veterinary surgeons in preference to medical officers of health on questions of post-mortem symptoms and clinical appearances, he would in introducing any future legislation on such matters secure to them the same position as that held by veterinary surgeons under the Public Health Acts of Scotland.—Mr. **BIRRELL** replied: The suggestion contained in the question will be duly considered when further legislation in regard to public health is in contemplation.

### *The Preservation of Foods.*

Mr. **CARR-GOMM** asked the President of the Local Government Board whether he was aware that borax and boric acid were largely used in the United Kingdom for the preservation of ham, bacon, milk, and other articles of food; whether their use for this purpose was permitted in the countries exporting such articles of food to the United Kingdom; whether, to be effective, the borax or boric acid must penetrate the article treated; whether, if so, any deleterious effect could be prevented by superficial washing; and whether he intended to introduce a measure forbidding the application of such preservatives to articles of food intended for consumption in this country.—Mr. **BURNS**, in a written reply, answered: I am aware of the facts as regards the use in the United Kingdom of borax and boric acid for the preservation of certain articles of food and that in some countries from which such articles are sent here the use of these preservatives is prohibited, although in certain of these countries the prohibition does not extend to foods prepared for export to the United Kingdom. If boron preservatives are used for packing such articles of food as hams and bacon they usually penetrate the substance of the meat and would not be removeable by superficial washing, whilst penetration must, of course, occur if solutions containing these preservatives are used for pickling or injection. The Public Health (Regulations as to Food) Bill which I have introduced, and which is now before the House, would enable the Local Government Board to make regulations for the prevention of danger to public health from the importation, preparation, and storage of articles of food intended for human consumption, and thus to deal with the matter referred to in the question.

## WEDNESDAY, JULY 10TH.

### *The Destruction of Carcasses of Tuberculous Pigs.*

Mr. **SILCOCK** asked the President of the Local Government Board whether his attention had been drawn to the losses which were being incurred by the farmers of this country owing to the number of carcasses of tuberculous pigs which were being destroyed by order of the medical officers of health without any compensation being paid to the owners; whether he was aware that in the majority of cases there was no indication that a pig was suffering from tuberculosis until an examination of the carcass was made; and whether he was now prepared to bring in a Bill to provide that some compensation should be given to farmers for the losses which they sustain when animals which had been apparently healthy were destroyed in the interests of the public health.—Mr. **BURNS** replied: I am aware that carcasses of tuberculous pigs are destroyed and this involves loss to the owners. I am also aware that in some cases the disease is not recognisable during the life of the animals; but this is not always so, and it must not be assumed that the cause of the disease is necessarily not preventable. I cannot promise to introduce a Bill for the purpose suggested.

# BOOKS, ETC., RECEIVED.

**FROWDE, HENRY**, Oxford University Press, and **HODDER AND STOUGHTON**, 20, Warwick-square, London, E.C.

The Oxford Medical Publications. (In the Choice of Authors and Subjects the Publishers have had the Advantage throughout of the Advice and Assistance of William Osler, M D., F.R.S., Regius Professor of Medicine in the University of Oxford.)

Practical Anæsthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P., Assistant Anæsthetist to St. Bartholomew's Hospital. Price 5*s*. net.

The Treatment of Disease in Children. By G. A. Sutherland, M.D.' F.R.C.P., Physician to Paddington Green Children's Hospital, to the North-West London Hospital, and to the City Orthopædic Hospital. Price 5*s*. net.

Surgical Emergencies. By Percy Sargent, M.A., M.B , B C. Cantab., F.R.C.S., Surgeon to Out-patients, St. Thomas's Hosptal. Price 5*s*. net.

Medical Lectures and Aphorisms. By Samuel Gee, M.D., F.R.C.P., Honorary Physician to H.R.H. the Prince of Wales and Consulting Physician to St. Bartholomew's Hospital. Second edition. Price 5*s*. net.

The Skin Affections of Childhood. With Special Reference to those of More Common Occurrence and their Diagnosis and Treatment. By H. G. Adamson, M.D. Lond., M.R.C.P., Physician for Diseases of the Skin, Paddington Green Children's Hospital; Physician in Charge of the Skin Department (formerly Physician), North-Eastern Hospital for Children. Price 5*s*. net.

Diseases of the Larynx. By Harold Barwell, M.B. Lond., F.R.C.S. Eng., Surgeon for Diseases of the Throat, St. George's Hospital. Price 5*s*. net.

Functional Nervous Disorders in Childhood. By Leonard G. Guthrie, M.A., M.D., F.R.C.P., Senior Physician to Paddington Green Children's Hospital; Physician to the Hospital for Epilepsy and Paralysis, Maida Vale. Price 7*s*. 6*d*. net.

Cancer of the Womb: its Symptoms, Diagnosis, Prognosis, and Treatment. By Frederick John McCann, M D. Edin , F.R.C.S. Eng., M.R.C.P. Lond., Physician to In-patients, Samaritan Free Hospital for Women, London; Lecturer on Gynæcology, Medical Graduates' College and Polyclinic, London. Price 20*s*. net.

**GLAISHER, HENRY J.**, 57, Wigmore-street, Cavendish-square, London, W.

On Acute Pneumonia: its Signs, Symptoms, and Treatment. By Seymour Taylor, M.D., F.R.C.P., Physician to the West London Hospital, &c. Price 1*s*. net.

**HIRSCHWALD, AUGUST**, Unter den Linden, 68, Berlin, N.W.

Bibliothek v. Coler-Schjerning. Band XI. Zweite Auflage. Die Experimentelle Diagnostik. Serumtherapie und Prophylaxe der Infektionskrankheiten. Von Stabsarzt Prof. Dr. E. Marx. Zweite Auflage. Price M.8.

**HUMANITARIAN LEAGUE**, 53, Chancery-lane, London, W.C. (**FIFIELD, A. C.**, 44, Fleet-street, London, E.C.)

Pioneers of Humanity. By Howard Williams, M.A., Author of "The Ethics of Diet." Price 6*d*. net.

**JOHN BALE, SONS, AND DANIELSSON, LIMITED**, 83–91, Great Titchfield-street, London, W.

The British Sanatoria Annual. 1907–8. Price 5*s*. net.

**LEWIS, H. K.**, 136, Gower-street, London, W.C.

What to Do in Cases of Poisoning. By William Murrell, M.D., F.R.C.P., Physician to the Westminster Hospital; Lecturer on Clinical Medicine and Joint Lecturer on the Principles and Practice of Medicine; Examiner in Materia Medica in the University of Aberdeen. Tenth edition. Price not stated.

**MACLEHOSE, JAMES, AND SONS**, 61, St. Vincent-street, Glasgow.

George Buchanan. Glasgow Quatercentenary Studies, 1906. Price 12*s*. 6*d*. net.

**MALOINE, A.**, 25–27, Rue de l'École-de-Médecine, Paris; Rue de la Charité, 6, Lyon.

Des Résections de l'Estomac pour Cancer. Technique, Résultats immédiats et Résultats éloignés. Par le Dr. René Leriche, Ex-interne, Lauréat des Hôpitaux (Prix Bouchet, Chirurgie, 1906), Prosecteur à la Faculté. Price not stated.

**METHUEN AND CO.**, 36, Essex-street, Strand, London, W.C.

The Complete School Chemistry. By F. M. Oldham, B.A., Senior Chemistry Master at Dulwich College. Illustrated by F. C. Boon, B.A., Assistant Master at Dulwich College. Price 4*s*. 6*d*.

Post-Graduate Clinical Studies. For the General Practitioner. First Series. By H. Harold Scott, M.B. Lond., M.R.C.S., L.R.C.P., Fellow of the Royal Institute of Public Health; late Medical Officer in Charge of Hospital for Women and Children, Maritzburg. Price 8*s*.

**NEW SYDENHAM SOCIETY**, London. (Agent: **H. K. LEWIS**, 136, Gower-street, London, W.C.)

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. (A Continuation of the "Atlas of Pathology.") Chiefly from Original Sources. Fasciculus XXVI. (Double Number.) Being XXIV. of the Clinical Atlas. Eczema, Lichen, and Tinea, Gout Tophi, Darier's Dermatosis, &c. Price to non-subscribers £1 1*s*.

**UNIONE TIPOGRAFICO-EDITRICE TORINESE**, 28, Corso Raffaello, Torino.

Manuale dell'Igienista. Per Cura del Prof. Angelo Celli, Direttore dell'Istituto d'Igiene della R. Università di Roma, con la Collaborazione di O. Casagrandi, T. Gualdi, I. Nosotti, E. Raseri, G. Roster, A. Scala, D. Spatàro. Opera in 2 volumi. Terza Edizione interamente rifatta del Manuale dell'Ufficiale Sanitario. Volume I., Parte 2a. Volume II., Parte 2a. Prezzo dell'Opera. L.40.

**W. B. SAUNDERS COMPANY**, Philadelphia and London.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D., Member of the American Ophthalmological Society; Fellow of the American Academy of Medicine. Third edition, revised and enlarged. Price 6*s*. 6*d*. net.

Atlas and Epitome of Diseases of Children. By Dr. R. Hecker and Dr. J. Trumpp, of the University of Munich. Authorised Translation from the German. Edited by Isaac A. Aht, M.D., Assistant Professor of the Diseases of Children in Rush Medical College, in affiliation with the University of Chicago. Price 21*s*. net.

A Text-book of Embryology. For Students of Medicine. By John Clement Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. Price 13*s*. net.

Diagnostics of the Diseases of Children. By Le Grand Kerr, M.D., Professor of the Diseases of Children in the Brooklyn Post Graduate Medical School; Pediatrist to the Swedish Hospital in Brooklyn; Attending Pediatrist to the Williamsburg Hospital, Brooklyn. Price 21*s*. net.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

**BARBER, PERCIVAL E.**, M.R.C.S., L.R.C.P. Lond., has been appointed Lecturer in Midwifery and Diseases of Women in the University of Sheffield.

**BEATTY, W. J.**, L.R.C.P. Edin , L.F.P.S. Glasg., has been appointed by the Home Secretary H.M. Referee and Judges' Assessor under the Workmen's Compensation Act (1906) for County Court Circuit 15.

**BENNETT, T.**, M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Knaresborough District of the county of York.

**COATES, F. A.**, L.R.C.P. Lond., M.R.C S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Whitchurch District of the county of Hants.

**CORBETT, CATHARINE L.**, M.B., Ch.B. Vict., has been appointed Junior Assistant Medical Officer at West Ham Union Infirmary.

**FAWCETT, W. H.**, M.D. Brux., M.R.C.P., F.R.C.S. Edin., D.P.H. Lond., has been appointed Assistant Physician to the Royal Victoria Hospital, Bournemouth.

**GOOD, ARNOLD SAXTY**, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Torrington (Devon) Board of Guardians.

**GOODWYN, HENRY**, L.R.C.P. & S., L.M. Edin., has been appointed Medical Officer for the Bovey Tracey District by the Newton Abbot (Devon) Board of Guardians.

**HAYES, H. W. MCCAULLY**, M.R.C.P. Edin., L.R.C.S. Edin., L F.P.S. Glasg., has been appointed Chief Medical Officer of the South Indian Railway, India.

**JOHNSON, J.**, L R.C P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Blackpool District of the county of Lancaster.

**MORGAN, JAMES ARTHUR**, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Medical Officer of Health for the Llanwrtyd (Breconshire) Urban District.

**NELSON, W. E.**, M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Henley-in-Arden District of the county of Warwick.

**RICHARDS, THOMAS EDWARD**, M.B., C.M. Edin., has been appointed Medical Officer and Public Vaccinator for the Ystradgynlais District by the Ystradgynlais (Breconshire) Board of Guardians.

**TINLEY, W. E. F.**, M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Whitby District of of the county of York.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

**ABERGAVENNY, MONMOUTHSHIRE ASYLUM.**—Senior Assistant Medical Officer. Salary £250 per annum, with board, apartments, washing, and attendance.

**BOLINGBROKE HOSPITAL.**—Assistant Surgeon.

**BRADFORD POOR LAW UNION.**—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

**CARMARTHENSHIRE INFIRMARY.**—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

**CHELSEA INFIRMARY**, Cale-street, S.W.—Assistant Medical Officer. Salary £90, rising to £100 a year, with board, apartments, coals, gas, and washing.

**COVENTRY AND WARWICKSHIRE HOSPITAL.**—Junior House Surgeon for six months, subject to re-appointment. Salary £60 per annum, with rooms, board, washing, and attendance.

**DEVONPORT, ROYAL ALBERT HOSPITAL.**—Resident Medical Officer. Salary £100 per annum, with apartments, board, fuel, and lights.

**DUMFRIES AND GALLOWAY ROYAL INFIRMARY.**—Assistant House Surgeon. Salary £25 per annum, with board and washing.

**EGYPT, PUBLIC HEALTH DEPARTMENT.**—Sub-Inspector of Ophthalmic Hospitals.

**ESSEX AND COLCHESTER GENERAL HOSPITAL.**—House Physician. Salary £80 per annum, with board, residence, and washing.

**GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.**—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

**HALIFAX, ROYAL HALIFAX INFIRMARY.**—Second House Surgeon. Salary £100 per annum, with residence, board, and washing.

**HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.**—Assistant Physician.

**HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM**, Maida Vale, W.—Physician for the Diseases of Women.

**HOSPITAL FOR SICK CHILDREN**, Great Ormond-street, London, W.C.-House Physician, House Surgeon, Assistant Casualty Officer.

**HULL, ROYAL INFIRMARY.**—Casualty House Surgeon. Salary £50, with board and lodging.

**KENSINGTON GENERAL HOSPITAL**, Earl's-court, London, S.W.—Junior Resident Medical Officer. Salary £40 per annum, with board, washing, and residence.

**LENZIE, WOODILEE ASYLUM.**—Junior Assistant Medical Officer. Salary £125 per annum, with board, washing, &c.

LIVERPOOL INFIRMARY FOR CHILDREN.—House Surgeon. Salary £100 per annum, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.—Surgeon-Dentist.

MIDDLESEX HOSPITAL, W.—Medical Officer and Registrar to the Cancer Department. Salary £100 per annum, with board and residence.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Clinical Assistants.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, increasing to £100, with apartments, board, washing, and attendance.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £80 per annum, with board, residence, and washing.

PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60, with board.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Anæsthetist.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL. Marylebone road, N.W.—Resident Medical Officer for Out-patient Department for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing. Also Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Clinical Pathologist and Demonstrator on Bacteriology. Stipend £75 a year.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Honorary Assistant Anæsthetist.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

SEAMEN'S HOSPITAL SOCIETY.—Assistant Physician. Also Assistant Surgeon.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

STOCKPORT UNION, STEPPING HILL HOSPITAL.—Resident Assistant Medical Officer. Salary £130 per annum, rising to £150, with apartments, rations, &c.

STOCKTON-ON-TEES, STOCKTON AND THORNABY HOSPITAL.—House Surgeon. Salary £180 per annum, with residence, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL. Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry. Also Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with, board, residence, and laundry. Also Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and laundry.

WEST HAM INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Medical Superintendent. Salary at rate of £700 per annum, with house, light, and coal.

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Shaftesbury, in the county of Dorset; at Stanley, in the county of Durham; at Sturminster Newton in the county of Dorset; at Kirkcudbright, in the county of Kirkcudbright; and at Rathdowney, in Queen's County, Ireland.

# Births, Marriages, and Deaths.

## BIRTHS.

DODGSON.—On July 2nd, at Sherburn House, Durham, the wife of G. S. Dodgson, M.B., of a daughter.

DUIGAN.—On July 3rd, at Woodstock-road, Oxford, the wife of William Duigan M.A., M.B., of a daughter.

DUNN.—On July 6th, at Kimberley, Notts, the wife of J. Cecil S. Dunn, L.R.C.P.E., of a son.

## MARRIAGE.

LAURENCE—DAVIES.—On July 6th, at St. Mark's Church, Hamilton-terrace, George Laurence, M.R.C.S., L.R.C.P., of Inchmery-road, Catford, S.E., to Olive Mary, elder daughter of F. Herbert Davies.

## DEATHS.

DAVEY.—On July 5th, at Havering House, Abergavenny, Norris Fasham Davey, M.R.C.S., L.R.C.P., late of Romford, Essex, in his 88th year.

LEIGHTON.—On July 5th, aged 30, of typhoid, at the Royal Southern Hospital, Liverpool, Frederick Francis Leighton, M.B., St. John's College, Cambridge, Resident Pathologist, R.S.H., eldest son of R. L. Leighton, M.A., Chesterton, late of Bristol.

PYWELL.—On July 3rd, William Hodgson Pywell, M.R.C.S., L.R.C.P., of York-road, Lambeth, and Studley-road, Clapham, aged 62.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## COUNTRY IN TOWN.

THE second Country in Town Exhibition was opened last week at the Whitechapel Art Gallery, High-street, Whitechapel, by Mr. Lough, M.P., Parliamentary Secretary to the Board of Education. In many ways it is as good as, if not better than, the exhibition which was held last year but the charm which was then given to the exhibition by the live butterflies which flitted from flower to flower is absent. As an object lesson in the possibility of bringing some of the delights of the country into the town the exhibition must be a success and it is a pity that more exhibitions of the kind cannot be held. The exhibits from the various schools in the poor neighbourhoods of London are a credit to the teachers and give evidence that nature study is having a good effect upon the minds and artistic faculties of the children. Two of the exhibits which deserve special mention are the model recreation ground and the model backyard and garden. In the model recreation ground an effort has been made so to construct a public garden that it may be used for the purpose of educating children in the fullest sense of the term. In fact, it is "an open-air cure" applied to education. There are open-air nurseries, and beds are provided for children; they can learn to manage themselves, just as soldiers do their tents. Gardening is, of course, one of the chief features of the scheme, but there is provision for other kinds of work. For the mothers a quiet place is provided where they can bring their little ones to sleep in the sunshine while they themselves can be engaged in needlework or any other occupation. Baths are not forgotten, nor is the milk van. Miss A. C. Sewell, who has arranged and constructed the model, is to be congratulated on a well-thought-out plan full of admirable suggestions. The model back garden shows how the ordinary London back yard can be turned into a thing of beauty instead of the dirty disease-breeding space which it usually is. Not everyone, perhaps, can afford time to visit the exhibition, but every town dweller should obtain a copy of the catalogue, for it contains much interesting and useful information, such as lists of plants which will live in the air of towns, plants grown in London parks, the water fowl at Regent's Park, and the British birds that have been seen in that park. This catalogue can be obtained for a penny and the postage, but subscriptions, however small, will be gratefully received by the secretary and there is a danger that these most desirable exhibitions will have to be discontinued unless financial help is forthcoming. The exhibition, which is open from 12 noon till 9.30 P.M., will close on July 18th.

## OBSTRUCTING THE HIGHWAY WITH A MOTOR-CAR.

*To the Editors of* THE LANCET.

SIRS,—In your note *re* Dr. R. H. Spencer and his motor-car there evidently was absolutely no "obstruction." Not being a solicitor I have not noted the cases and cannot give you chapter and verse, but I certainly have seen it decided that a trader's van may "obstruct" the roadway for a time sufficient to enable him to deliver goods. I would ask why that should be allowed if a medical man must not have his car in front of a house where he is visiting. The position is absurd, for he cannot take the car into the house with him. When out driving I have had horses frightened by flaring naphtha lamps on costermongers' carts, but these are not interfered with, and in many parts costermongers' stalls are an abominable nuisance and obstruction.

I am, Sirs, yours faithfully,

Prince of Wales-road, S.W., July 10th, 1907. A. PHILLIPS HILLS.

## A COWRIE SHELL IN THE NASAL CAVITY.

*To the Editors of* THE LANCET.

SIRS,—The case of a "Displaced Tooth in the Nasal Cavity," having lain there for years, reported in THE LANCET of May 4th last by your Vienna correspondent, reminds me of a boy I treated about 19 years ago in the hospital at Sangor, C.P. He was brought to me for a very offensive discharge from one of the nostrils which had gone on for years—I think 14 or so. The cavity was quite blocked and the probe would not pass more than three-quarters of an inch and gave a grating sensation to the finger. Naturally a rhinolith was suspected. After having thoroughly syringed out the nasal cavity the hard substance was caught hold of by a pair of forceps and gradually loosened from its seat and removed. It looked like a calculus with a very rough exterior but after placing it in water and removing the shell it turned out, to my astonishment, to be a "cowrie" (karishell) of the size of a medium-sized almond. The peculiarity of the case lies in the foreign body having remained inside the nose for 14 years without doing any serious mischief and being, in this respect, analogous to the case of your Vienna correspondent. Children generally push in all sorts of things into their nostrils (and ears) but they are generally taken out at once as they cause great pain and inconvenience.

I am, Sirs, yours faithfully,

Arrah, June 19th, 1907. A. P. GHATAK, M.B.

### SIMPLE METHOD OF URANALYSIS WANTED.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers inform me where I can find a description of a *simple* method for the approximate quantitative estimation in urine of (1) phosphates; inorganic sulphates; and (3) organic sulphates. The methods and apparatus usually described I consider to be too elaborate for the practitioner.

I am, Sirs, yours faithfully
S. W.
July 8th, 1907.

### THE VERNIX CASEOSA.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers give me information bearing on the theory that the vernix caseosa is caused by sexual connexion during pregnancy? I should be glad to know if this substance has any physiological function or whether there is any proof of its being harmful to the child.

I am, Sirs, yours faithfully,
ROBERT M. RIGGALL, L.R.C.P. & S. Edin., L.F.P. & S. Glasg.
Hathersage, viâ Sheffield, June 27th, 1907.

### A NEW BEDSIDE MAT.

WE have received from Dr. Alexander Ambrose, of Loughton, Essex, a sample of his "non-slip" mat for bedside use, devised to obviate the slipperiness of the polished floors so common in hospitals, asylums, and similar institutions. The upper surface resembles that of a piece of stout stair carpet 4 feet 6 inches long and 23 inches wide, while the under side is coated with a thin layer of a composition which, without being sticky in the slightest degree, gives a good foothold on the smoothest floor. In respect of the tendency to glide on a polished surface there is quite a contrast between the two sides of the mat. It is evidently well fitted to serve the purpose for which it is intended.

### WANTED—A MEDICAL HOME IN FRANCE.

*To the Editors of* THE LANCET.

SIRS,—Could any of your readers tell me if there is a good medical establishment for the treatment of nervous disease at a place called Vernet sur la Seine, near Paris? Are there any French medical men who take paying guests for treatment near Biarritz or in any quiet, nice town in France? Are there any medical homes near Passy or Neuilly?

I am, Sirs, yours faithfully,
MATER.
July 5th, 1907.

### POST SCARLATINAL BALDNESS.

*To the Editors of* THE LANCET.

SIRS,—A woman, aged 60 years, who contracted scarlet fever nearly four months ago, has been losing her hair (a very good crop before the illness) ever since. Can any of your readers suggest any application to arrest this loss, or any treatment likely to be beneficial, as baldness is threatened?

I am, Sirs, yours faithfully,
SENEX.
July 9th, 1907.

◆

*M.B. Lond.*—The Workmen's Compensation Act gives power to the Secretary of State to appoint legally qualified practitioners as medical referees; application for the office should accordingly be made to him. We may remind our correspondent that "where a medical referee has been employed as a medical practitioner in connexion with any case by, or on behalf of, an employer or workman, or by insurers interested, he shall not act as medical referee in that case." A surgeon certifying a case under the Factories Act will accordingly be ineligible to act as referee in that case.

*Dubiens.*—It is, we believe, usual and certainly very advisable that partnership agreements between medical men should contain stipulations for fair arrangements in the case of absence of either partner on account of sickness or accident. We have never heard of a case where a sick partner having secured the services of a competent locum-tenent was made the defendant in an action for damages brought against him by the other partner.

*I. R.*—It might be as well for our correspondent to communicate with the National Association for the Prevention of Consumption, 20, Hanover-square, London, W.

*Health* is referred to an annotation in THE LANCET of July 6th, page 40, entitled, "An Act to Prevent Procreation of Unfit Persons."

*Lux Veritatis.*—We can understand the difficulty of the insurance companies and think that their attitude is justifiable.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

**During the week marked copies of the following newspapers have been received:**—*Townsville Daily Bulletin* (*Queensland, Australia*), *Manchester Guardian, Chester Chronicle, Hastings and St. Leonards Observer, The North Star* (*Darlington*), *Daily Mail, Birmingham Gazette, Notts Guardian, Child's Guardian, Daily Express Advertising World, Westminster Gazette, Bristol Times, Manchester Evening Chronicle, Herald of Health, The Tribune, Siam Free Press, Newcastle Chronicle, Eastern Morning News, Lincoln Echo, Tewkesbury Record, South Wales Echo, Glasgow Evening Times, East Anglian Daily Times, Daily Graphic, Yorkshire Daily Post, Sheffield Independent.*

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, July 11th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| July 5 | 29·75 | S.W. | 0·07 | 121 | 66 | 52 | 54 | 56 | Raining |
| „ 6 | 29 96 | W. | ... | 120 | 67 | 51 | 53 | 57 | Fine |
| „ 7 | 29·97 | W. | ... | 111 | 64 | 52 | 53 | 56 | Cloudy |
| „ 8 | 29·89 | S.W. | ... | 102 | 62 | 51 | 53 | 57 | Cloudy |
| „ 9 | 29·91 | W. | 0·01 | 101 | 65 | 55 | 56 | 59 | Cloudy |
| „ 10 | 30·09 | S.W. | 0·04 | 109 | 63 | 54 | 55 | 58 | Fine |
| „ 11 | 30·44 | N. | 0·14 | 115 | 63 | 48 | 52 | 56 | Fine |

## Medical Diary for the ensuing Week.

### OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

### SOCIETIES.

**FRIDAY** (19th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5 P.M.: Annual General Meeting.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Demonstration:—Dr. Low. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Ball: Complications of Middle Ear Suppuration (with lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. M. H. MacLeod: Clinique. (Skin.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipham); Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

**TUESDAY** (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Throat, Nose, and Ear Department. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Ball: Complications of Middle Ear Suppuration (with lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. C. T. Williams: Clinique. (Medical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynæcological Out-patient (Dr. Giles). Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. Atkinson: External Ear.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. F. Buzzard: Lumbar Puncture.

**WEDNESDAY** (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Throat, Nose, and Ear Department. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Mr. Pardoe: Disuria.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. J. Berry: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipham).

**THURSDAY** (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Mr. Baldwin: Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappel).

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Mr. Lane: Fractures.

**FRIDAY** (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Throat, Nose, and Ear Department. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Mr. Paget.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—9.30 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie).

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road. W.C.).—3.45 P.M.: Demonstration: Dr. D. McKenzie: Thyroid and Cervical Region.

**SATURDAY** (20th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## Communications, Letters, &c., have been received from—

**A.**—Messrs. Allen and Hanburys, Lond.; A. J. A.

**B.**—Mr. H. W. Bayly, Lond.; Dr. R. M. Buchanan, Glasgow; Mr. C. J. Bond, Leicester; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. W. F. Bowen, Bolton; Colonel S. H. Browne, I.M.S., Newcastle, County Down; Dr. C. F. Bailey, Lynton; Dr. A. T. Brand, Driffield; Dr. W. Blair Bell, Liverpool; British Dia Malt Co., Lond., Director of.

**C.**—Dr. H. H. Clarke, Liverpool; Messrs. T. Christy and Co., Lond.; Certifying Surgeon; Professor G. C. Chatterjee, Calcutta; Children's Country Holidays Fund, Lond., Secretary of; Coventry and Warwickshire Hospital, Secretary of; Mr. F. W. Clarke, Chorlton-cum-Hardy; Chelsea Guardians, Clerk of; Mr. A. Chambure, Paris; Dr. C. C. Choyce, Lond.

**D.**—Dr. R. De Martini, Maidstone; Dalziel Foundry, Ltd., Lond.; Dr. Clement Dukes, Rugby.

**E.**—Dr. T. Eastham, Manchester; Dr. Alexander Edington, Edinburgh; Egyptian Government Public Health Department, Cairo, Director-General of.

**F.**—Mr. H. B. Fantham, Lond.; Mr. L. O. Fuller, East Harling; Mr. J. Flach, Lond.; First Garden City, Directors of.

**G.**—Dr. A. P. Ghatak, Arrah; Governor-General in Rajputana, First Assistant to the Agent to the, Mount Abu; Grant Medical College, Calcutta, Principal of; Mr. J. D. Garcia, Pozoblanco, Spain; Mr. H. T. Gray, Lond.; Miss K. Glass, Lond.

**H.**—Mr. M. Hayes, Limerick; Messrs. Hankinson and Son, Boscombe; Dr. F. W. Hewitt, Lond.; Hastings, St. Leonards, &c., Hospital, Secretary of; Professor W. D. Halliburton, Lond.; Dr. Percival J. Hay, Sheffield; Messrs. Hastings Bros., Lond.; Messrs. Haasenstein and Vogler, Geneva.

**I.**—Dr. A. C. Ingle, Cambridge; Income Tax Reduction League, Lond.; Isleworth Infirmary, Medical Superintendent of.

**J.**—Mr. D. Hill Jack, Glasgow; J. T.

**K.**—Kreochyle Co., Lond.; Messrs. R. A. Knight and Co., Lond.

**L.**—Messrs. Lee and Nightingale, Liverpool; Lamson Paragon Supply Co., Lond.; L. B.; Mr. H. K. Lewis, Lond.

**M.**—Dr. F. C. Madden, Crondall; Mr. K. K. Mukerji, Edinburgh; Dr. Macnaughton-Jones, Lond.; Monmouthshire Asylum, Abergavenny, Steward of; Captain J. H. Murray, I.M.S., Multan, India; Madras, Private Secretary to the Governor, Ootacamund; Dr. J. C. McWalter, Dublin; Dr. H. D. McCulloch, Bournemouth; Professor Robert Muir, Glasgow; Messrs. James MacLehose and Sons, Glasgow; Mr. B. G. A. Moynihan, Leeds; Sir Shirley F. Murphy, Lond.; Mater.

**N.**—Mr. Cyril A. R. Nitch, Lond.; Newport and Monmouthshire Hospital, Secretary of; North West London Hospital, Secretary of; Mr. S. Nash, Lond.; North Staffordshire Infirmary, Stoke-on-Trent, Secretary of; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.

**O.**—Obstetrical Society of London, Secretary of; Professor William Osler, Oxford.

**P.**—Mr. Y. J. Pentland, Edinburgh; Dr. A. Howard Pirie, Lond.; P. H. S.; Dr. Pereira, Lond.; Mr. W. F. Prout, Liverpool; Messrs. Pope and Plante, Lond.; Dr. F. W. Pavy, Lond.; Messrs. Peacock and Hadley, Lond.

**R.**—Dr. C. Rundle, Liverpool; Royal College of Surgeons in Ireland, Dublin, Registrar of; Royal Albert Hospital, Devonport, Secretary of; Royal Albert Asylum, Lancaster, Superintendent of; Messrs. Reavell Bros. and Co., Alnwick; Mr. G. A. Roberts, Stoke; Royal Surrey County Hospital, Guildford, Secretary of; R. A.; Royal Halifax Infirmary, Secretary of; R. D D.; Professor Ronald Ross, Liverpool; Mr. Isaac Rayner, South Wigston; Royal National Orthopædic Hospital, Secretary of.

**S.**—Professor W. J. Simpson, Lond.; Savile Club, Lond., Hon. Secretary of; Mr. J. F. Stevenson, Liversedge; Stockton Union, Clerk to the; *South Wales Argus*, Newport, Manager of; Major J. Winn Sampson, Calabar; Messrs. W. B. Saunders Co., Lond.; Messrs. Swain Bros., Lond.; *Sussex Daily News*; South-West London Medical Society; Dr. G. H. Savage, Lond.; School of Medicine of the Royal Colleges, Edinburgh, Secretary of; Mr. A. J. Smith, Lond.; Scholastic, Clerical, &c., Association, Lond.

**T.**—Miss Alice Taylor, Edinburgh; Taunton and Somerset Hospital, Secretary of; *Tenbury Advertiser*, Manager of.

**U.**—University of Birmingham, Dean of.

**V.**—Messrs. J. W. Vickers and Co., Lond.

**W.**—Mr. W. L. Whitlock, Lond.; Mr. John H. Wraith, Darwen; Miss L. Wood, Lond.; Messrs. A. Wulfing and Co., Lond.; Dr. F. R. Walters, Crooksbury; Mr. J. Williams, Bradford; W. R. S. R.; Captain Forbes Winslow, R.A.M.C., Gibraltar; Mr. E. W. White, Lond.; Dr. David Walsh, Lond.; Dr. F. G. Wallace, Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Messrs. Ash, Sons, and Co., Lond.; Aberystwith Infirmary, Secretary of; A. J. R.

**B.**—Dr. F. Bryan, Earls Colne; Mr. W. G. Burcombe, Lincoln; Mr. E. A. Beaman, Normanton; Booth Steamship Co., Liverpool, Secretary of; Bayer Co., Lond.; Mr. T. W. Bartlett, Steeple Bumpstead; B. H.; Birmingham City Asylum, Clerk to the; Dr. W. E. Barton, Lond.; Bury Corporation, Clerk to the; Messrs. Blinks and Sons, Lond.; Dr. F. J. Brennand, Burnham; Messrs. Baker Bros., Lond.; Mr. H. Butterfield, Northampton; Mr. F. Burgis, Buenos Aires; Miss Bennetts, Llandudno; British Lysoform Co., Lond.; Mr. R. A. Bickersteth, Liverpool; Messrs. Brown and Son, Huddersfield; Bethel Hospital, Norwich, Clerk to the; Mr. W. J. Beatty, Stockton-on-Tees; Mr. R. S. Bird, Wolverhampton.

**C.**—Mr. J. Crosland, Huddersfield; Messrs. Crossley and Co., Lond.; College of Preceptors, Lond., Secretary of; C. K.; Messrs. Samson Clark and Co., Lond.; Cafolin Co., Lond.; Secretary of; Mr. H. Chatterjee, Edinburgh.

**D.**—Mr. W. B. Dowsett, Southend-on-Sea; Dalrymple House, Rickmansworth; Dr. W. T. Dougal, Pittenweem.

**E.**—Mr. J. Evans, Maidstone; Dr. E. Elsmere, Leominster; Dr. H. Ebbinghaus, Dortmund.

**F.**—Mr. H. W. Furnivall, Woodbury; Fermanagh County Hospital, Enniskillen, Secretary of; F. G.

**G.**—Mr. J. W. Griffin, King's Heath.

**H.**—Mr. T. H. Hewitt, Lond.; Messrs. Haddon and Co., Lond.; Mr. B. Hood, Fletching; Dr. A. Haig, Lond.; Dr. F. Hare, Lond.; Messrs. Abel Heywood and Son, Manchester.

**I.**—International Plasmon, Lond., Secretary of; International News Co., Lond.

**J.**—Dr. H. Jarmulowsky, Kiel; Mr. Y. M. Jones-Humphreys, Cemmaes; J. H. B.; J. F. M.; Messrs. Jacob and Johnson, Winchester; J. S.; J. M. P.; J. F. P.; J. W. S; Mr. E. B. Jones, Lond.

**K.**—Dr. M. Aston Key, Southsea; Messrs. Kilner Bros., Lond.; Messrs. H. and T. Kirby and Co., Lond.; Dr. J. Knight, Scarborough.

**L.**—Mr. C. B. Lockwood, Lond.; Dr. C. W. L. Luetbgen, Cressage; Mr. S. Longworth, Melton; Loughborough General Hospital, Secretary of; L. J. B.; L. L.

**M.**—Mr. A. Mackenzie, Inverness; Mr. T. E. B. Meyler, Lond.; Mr. R. Mosse, Berlin; Dr. W. D. Maxwell, Thames Ditton; Mr. G. M. McKie, Lond.; Messrs. C. Mitchell and Co., Lond.; Messrs. Mayne and Boyd, Belfast; Messrs. May, Roberts, and Co., Lond.; Messrs. McKesson and Robbins, New York; M. J. M. D.; Dr. P. Mathews, Barrasford; Mr. E. P. Marett, Avranche; Manchester Medical Agency, Secretary of; Messrs. Manlove, Alliott, and Co., Nottingham; Dr. Moir, Boscombe; M. L. J.

**O.**—Oldham Union, Clerk to the; Mr. J. O'Meara, Wolverhampton.

**P.**—Messrs. Pratt and Co., Lond.; Dr. J. King Patrick, Glasgow; Dr. C. S. Pethick, Woolton; Miss Payne, Leytonstone; Dr. Parry, Pontycymmer; Mr. J. E. Platt, Manchester; Mr. J. W. Power, Lond.

**R.**—Mr. W. Ramsay, Melbourne; Mr. C. A. Ryde, Brussels; Mr. J. P. Ryan, Lond.; Royal Eye Hospital, Lond. Secretary of.

**S.**—Mr. M. S. Segar, Lond.; Dr. A. W. Scott, Woodhouse; Messrs. G. Street and Co., Lond.; Messrs. T. and H. Smith, Edinburgh; Mr. L. W. Stevens, Robertson, Cape Colony; Mr. J. Simpson, R.A.M.C., Aldershot; Messrs Schimmel and Co., Lond.; Mr. M. Smith, Alnwick; Dr. J. Searson, Lond.; Mr. D. Stewart Glasgow; Sussex County Hospital, Brighton, Secretary of.

**T.**—Mr. P. Templeton, Swanage, Mr. H. M. Thomas, Fishguard; Dr. G. E. M. Thorp, Leeds; Dr. J. W. Thomson, Wakefield; Messrs. P. W. Talbot and Co., Lond.; Mr. J. Tbin, Edinburgh.

**V.**—Victoria Carriage Works, Lond.

**W.**—Mr. B. Wheeler, Manchester; Mr. T. F. Wyse, New Brighton; Messrs. Wykes and Co., Leicester; Messrs. Wilcox and Co., Lond.; Mr. W. F. A. Walker, Dinas Mawddwy; "Winton," Bingfield; W. B. L.; Mr. J. Wanamaker, Paris.

---

**EVERY FRIDAY.**

# THE LANCET.

**PRICE SEVENPENCE.**

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | | | TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 | One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 16 | 3 | Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 2 | Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | | | |
|---|---|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 | 5 | 0 |
| Official and General Announcements | Ditto | 0 | 5 | 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 | 4 | 6 |
| | Every additional Line | 0 | 0 | 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.

# Three Clinical Lectures
ON
# GENERAL SURGICAL ANÆSTHESIA.

*Delivered at the London Hospital,*

BY FREDERIC W. HEWITT, M.V.O., M.A.,
M.D. CANTAB.,
EMERITUS LECTURER ON ANÆSTHETICS.

## LECTURE I.

*Delivered on June 14th, 1907.*

### THE THREE MAIN PRINCIPLES OF ANÆSTHETISATION.

GENTLEMEN,—The phenomenal advance which took place in surgery during the latter half of the nineteenth century was due, as you are aware, partly to the discovery and use of anæsthetics and partly to the introduction into practice of those principles with which the name of Lister will be for ever associated. So vast and far-reaching have been the benefits which mankind has derived from these two great discoveries that any remarks upon their relative importance would be irrelevant. At the same time one may perhaps be permitted to compare the developments which have taken place in general anæsthetisation, on the one hand, with those which have occurred in antiseptic and aseptic principles on the other. The labours of workers upon the lines originally laid down by Lister have been so fruitful that, at the present time, every recently qualified medical man carries with him into practice a deeply-rooted knowledge of the doctrines of asepsis; and he is able, as the result of the training he has received in those doctrines, to apply them successfully and to see for himself what an important part they play in combating disease. But is every recently qualified practitioner equally imbued with the true principles and conversant with the best methods of anæsthetisation? Is he as fully alive to the risks of departing from those principles as he is of the risks of departing from the principles of asepsis? I fear that these questions must be answered in the negative and that there is a regrettable want of parallelism in the developments which have followed the two great discoveries in question. A close scrutiny of the best reported cases in which death has occurred during general anæsthesia convinces me that in a large number of these it was a lack of appreciation of the principles of anæsthetisation which was the important factor, and it is, therefore, with these principles that I propose to deal to-day. It is not contended, of course, that the mere recognition of abstract propositions or principles will suffice to ensure the anæsthetist against difficulties and accidents, but without such fundamental propositions or principles to guide him he will be constantly drifting into dangerous waters, from which he may find it difficult to extricate himself. Before the action of anæsthetics and the complications of general anæsthesia were fully understood patients undergoing surgical operations under a particular anæsthetic were believed to incur a risk which was definite or special for that anæsthetic, being determined by the number of persons per 1000 who, from "idiosyncrasy" or other unknown causes, were specially liable to be unfavourably affected. But such views are no longer tenable. We now know that the risks of general anæsthesia are neither in the patient nor in the anæsthetic, but in the anæsthetist; and that if the present unnecessarily high death-rate from anæsthesia is to be lessened certain reforms which I have elsewhere indicated—reforms having for their object a higher standard of efficiency in those who administer anæsthetics—must be introduced. Everyone who has had experience in this department of practice sooner or later finds himself working on certain broad lines of procedure, and it is to these broad lines that I would now direct your attention. Let me first specify what may be regarded as the three main principles under which anæsthetics should be administered and, secondly, let me illustrate the importance of these principles by giving you examples of the most common departures from them.

The three main principles of general, as opposed to local anæsthetisation are: (1) the selection of appropriate anæsthetics; (2) the maintenance of unembarrassed, and particularly of unobstructed, respiration during and after the administration; and (3) the proper adjustment of the percentage or strength of the anæsthetic gas or vapour. I do not propose to weary you with any elaborate classification as to the selection of anæsthetics, the causes of intercurrent asphyxia, or the symptoms produced by this or that gas or vapour percentage. I merely wish at the present moment to draw your attention to the importance of these three main principles.

### 1. THE SELECTION OF APPROPRIATE ANÆSTHETICS.

One of the commonest errors in the selection of anæsthetics is the employment in cases of potential or actual respiratory difficulty of an asphyxiating agent such as pure nitrous oxide, or of an asphyxiating method such as that by which ether and ethyl chloride are respectively administered. Although nitrous oxide is the safest anæsthetic for the vast majority of subjects its use may be fraught with considerable danger in certain patients. Thus it should never be given when the air-way is encroached upon, as in angina Ludovici, in thyroid enlargement, in sublingual abscess, or in allied conditions. The safest and best anæsthetic in such cases as these is usually the C.E. mixture (two parts of chloroform to three parts of ether), and the inhaler should be one which in no way restricts the air-supply. In weakly patients and children a simple Skinner's mask will answer best. Should the patient be at all dyspnœic all methods of anæsthetisation involving rebreathing must be carefully avoided, and chloroform is generally to be preferred to other anæsthetics. In all the cases to which reference has just been made ethyl chloride is contraindicated. Ether should not be given to emphysematous, bronchitic, or phthisical subjects.

Patients with cardiac disease pass through general anæsthesia remarkably well provided that the proper anæsthetic be chosen and that asphyxiating methods be avoided. Generally speaking, nitrous oxide and oxygen and the C.E. mixture are to be preferred to other anæsthetics. Both pure nitrous oxide and ethyl chloride should be avoided—at all events in advanced cases. It is an interesting fact that whilst nitrous oxide free from oxygen must have been administered to thousands of patients with all forms of morbus cordis singularly few fatalities have been recorded in such subjects. The most probable explanation of this circumstance is that when pure nitrous oxide is administered to a patient with advanced cardiac disease ample warning is afforded by his appearance of the approach of danger, and common sense dictates the withdrawal of the inhaler at the proper juncture. I have, however, met with a considerable amount of clinical evidence which seems to indicate that when a patient with a feeble, fatty, or dilated heart is subjected to the full effects of pure nitrous oxide the strain upon the cardiac walls at the acme of the administration may be such as to leave its mark, at all events for a time, upon the heart itself. If it be impracticable to administer oxygen with nitrous oxide, an occasional breath of air should be permitted during the inhalation of the pure gas in order to prevent any undue asphyxia.

Another common error in the selection of anæsthetics is the use of chloroform or a chloroform mixture for the operation of circumcision. In the ensuing lecture I shall place before you clinical evidence to prove that during this and similar operations there is a great tendency, unless the patient be deeply anæsthetised, for reflex respiratory, as opposed to reflex circulatory, disturbance to arise, and this respiratory disturbance is far more likely to prove dangerous under chloroform than under ether. Ether, in fact, is doubly indicated—first, because it can be safely and quickly pushed to that point at which reflex respiratory difficulties will not arise; and, secondly, because, if it has not been pushed to that point when the operation begins and such difficulties arise, the circulation will hold out for a much longer time than in the case of chloroform. The operation of circumcision is a short one and even in the case of infants there is practically no risk of pulmonary sequelæ following the use of ether. For infants I would recommend you to use a small Rendle's (celluloid) mask with a very small piece of sponge within it and to sprinkle ether from a drop-bottle in small quantities at a time upon the sponge, correcting the breath-holding (which often disconcerts the inexperienced anæsthetist) by frequently rubbing the lips with a handkerchief or towel. In children of from two to seven or eight years of age a few drops of chloroform or C.E. mixture may be used as the induction agent, and the administration then continued by means of ether and the Rendle's mask. In older subjects the ordinary methods for obtaining ether anæsthesia will be applicable. For similar reasons to those which I have here given ether is specially indicated for short rectal operations.

In a considerable proportion of general surgical cases I find that the C.E. mixture produces better results than any other anæsthetic with which I am acquainted. Although a great deal has been said against anæsthetic mixtures I must confess that I have never met with any clinical phenomena to support the adverse opinion which many hold. The C.E. mixture seems to produce rather better results than the A.C.E. mixture, probably because the patient is spared the process of eliminating the alcohol which he necessarily inhales when the latter mixture is used. It has in my hands answered better than any other anæsthetic for obtaining what may be termed the fine adjustments in anæsthetisation. As I shall presently point out, there is in the vast majority of cases a neutral borderland in the realm of general surgical anæsthesia, and if this particular borderland can be reached and retained safe and quiet anæsthesia may be relied upon. In a large number of abdominal cases and in most patients over 60 years of age this mixture answers admirably. Much depends, however, upon the actual means employed for administering the C.E. mixture. Rendle's inhaler and its numerous modifications fail to supply a vapour of equable strength; they not unfrequently allow the liquid anæsthetic to run out of the inhaler and thus to redden or blister the face, whilst they are liable, if continuously applied, to produce over-dosage.

FIG. 1.

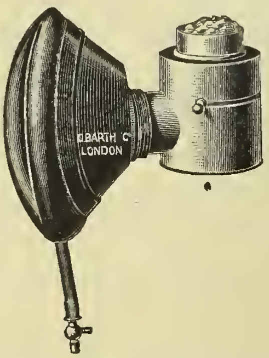
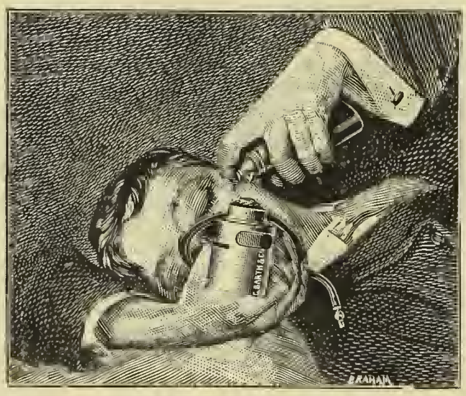


FIG. 2.



Having used the inhaler here figured for about three years I am able to speak with confidence as to its merits.[1] It consists of a simple metal cylinder capable of holding a sponge and surmounted by a wide circular opening through which the anæsthetic is poured (Fig. 2). This air opening is so large that it is difficult, if not impossible, to administer a dangerously high vapour-percentage. The inhaler errs on the side of safety, for it is necessary, when anæsthetising comparatively insusceptible patients, to temporarily and loosely cover the circular air-opening with the hand. In ordinary cases the sponge may be kept thoroughly wet, any excess of the anæsthetic mixture simply running through the lower part of the cylinder upon the hand of the administrator. It is important that the sponge should be coarse and that it should only loosely fit the metal cylinder.

### 2. THE MAINTENANCE OF UNEMBARRASSED, AND PARTICULARLY OF UNOBSTRUCTED, RESPIRATION DURING AND AFTER THE ADMINISTRATION.

It is often supposed that in administering an anæsthetic the function of respiration will remain unimpaired provided the agent in use be not pushed to a toxic degree. This, however, is a grave error, for breathing far more commonly comes to a standstill from causes other than overdosage itself. There are, in fact, four distinct modes of respiratory arrest during general surgical anæsthesia. Thus breathing may cease (*a*) from the presence of muscular spasm or some other condition *within* the air-passages, causing occlusion of those passages; (*b*) from some *external* agency preventing lung expansion; (*c*) from a diminution or arrest of the blood-supply to the respiratory centres; and (*d*) from the toxic effect of the anæsthetic upon those centres. I need not here specifically enumerate the various immediate causes of respiratory embarrassment and failure; they may all be arranged under these four headings. What I am anxious to point out to you now is the paramount importance of maintaining a free air-way in order that the nervous energy which is available for working the respiratory pump may have its full play and produce lung expansion and contraction, thus insuring efficient pulmonary circulation and blood aeration.

One of the most frequent causes of difficulty in inducing and maintaining anæsthesia is the presence, before the administration, of partial or complete nasal obstruction. The anæsthetist should therefore particularly notice whether the patient has a so-called nasal intonation and if it is obvious that the nasal channels are inadequate a mouth-prop should be placed between the teeth. Another important factor in determining the presence or absence of difficulties during anæsthetisation is the "bite" of the patient. Given a slight degree of nasal obstruction, good teeth, and a somewhat ill-developed and under-hung lower jaw, with considerable space, antero-posteriorly, between the upper and lower incisors, respiratory difficulties will almost certainly arise unless special precautions be taken. Whenever practicable oral breathing should be secured and maintained in preference to nasal breathing, for the latter is often inadequate, retarding the onset of anæsthesia and leading to hyperpnœa, venous engorgement, and abdominal rigidity. It is often possible, by securing oral in place of nasal breathing, to change completely, both literally and figuratively, the complexion of the case. Free oral breathing is particularly desirable in emphysematous and other subjects who display breathlessness before anæsthetisation. It is not always an easy matter, however, to obtain oral breathing, owing to the natural tendency for the tongue and palate to remain in apposition. The insertion of a mouth-prop or gag by no means necessarily ensures an oral air-way; and if this form of breathing be desired it may be necessary, especially in muscular and obese subjects, to adopt some simple means of separating the tongue from the palate. Even at the commencement of inhalation, when the patient is conscious, oral breathing has advantages over nasal, for not only does it ensure a free and continuous interchange between the gaseous contents of the lungs and the anæsthetic gas or vapour, but it largely prevents those suffocative sensations which sometimes distress and alarm patients.

I cannot too strongly urge upon you to make yourselves absolutely certain that respiration is being freely performed during anæsthetisation. When I tell you that even the most experienced anæsthetist may occasionally fail to notice that the air-way has become noiselessly occluded you will see that it is not always an easy matter to be sure that air is entering and leaving the chest. The anæsthetist should either hear or feel every respiration. Except when a bag inhaler is in use visual observation is valueless, for, as you are doubtless aware, abdominal and thoracic movements may continue for a time after complete occlusion of the airway. Stertor and stridor always indicate a tendency towards occlusion and they should not be permitted to become too pronounced. Whilst there is no objection to the presence of an exceedingly slight and barely audible obstruction to the entry of air—indeed, this scarcely noticeable condition has its advantages—anything more than this, particularly if it persist for some time and the patient's general condition be unsatisfactory, will be liable to be followed by undesirable effects. Symptoms of intercurrent asphyxia from faulty posture, persistent stertor or stridor, the presence of laryngeal mucus, &c., are frequently mistaken for those of surgical shock or chloroform overdosage. I could place before you a large amount of clinical evidence to prove that this auto-asphyxiation, particularly if it come about, as it usually does, in an insidious manner, may not only seriously complicate an administration, but may necessitate its postponement or abandonment. Whilst the circulation of a patient with a healthy cardio-vascular system may suffer remarkably little during a considerable degree of respiratory embarrassment, that of a feeble anæmic subject will quickly show signs of failure. It is particularly in patients of the latter class that intercurrent asphyxia should be avoided. If the operation be one which necessarily produces some respiratory embarrassment the quantity of anæsthetic administered should be correspondingly reduced.

---

[1] This inhaler is made for me by Messrs. Barth and Co., 54, Poland-street Oxford-street, W.

We must not forget that the responsibilities of the anæsthetist do not necessarily cease with the insertion of the last suture or the application of bandages. There has been a tendency in recent years to over-anæsthetise patients, with the result that at the conclusion of operations they are often left to recover as best they may from the unnecessarily large quantities of ether with which they have been saturated. This practice has come into vogue mainly, I believe, as the result of a very laudable desire on the part of the anæsthetist to provide the surgeon with the most ideal conditions for his operations. Reflex movements, muscular rigidity, retching, coughing, &c., may doubtless be prevented by this deep narcosis, but a heavy price is sometimes paid for the benefits received in the form of pulmonory sequelæ and persistent vomiting. To saturate a patient with ether for an hour, or possibly for two hours, at a time is not without its own special risks; but these risks become considerably augmented when, as is often the case, these patients, still deeply etherised, are put back to bed upon their backs, with deep moist breathing, insensitive corneæ, and dusky colour. If it be found impracticable towards the conclusion of the operation so to adjust the degree of anæsthesia that the patient begins to show signs of recovery immediately he is put back to bed—the ideal at which we should aim—he should certainly be carefully watched by the anæsthetist and if possible kept upon his side till signs of semi-consciousness present themselves. The airway may readily become temporarily obstructed during the recovery period, particularly if blood or mucus be present within the larynx, as after operations for adenoids. Whenever there has been any undue mucous secretion, or whenever blood or vomited fluid has entered the larynx or trachea, the patient should be placed first of all upon one side for an hour and then upon the other, so that both lungs may have a chance of expanding. I have recently met with a case in which a nurse failed to carry out these instructions and the patient, whose air passages contained some blood at the conclusion of a very long operation, was kept upon one side for 12 hours or more, with the result that the temperature rose and some crackling sounds became audible in the lung on that side. The patient was then placed on the other side with the result that she quickly coughed up some altered blood, the temperature at once fell, and the physical signs vanished. It is in the highest degree probable that had this patient been kept upon one side or upon her back a local broncho-pneumonic process would have resulted. The same principle that guides us in the administration—that of maintaining a free airway and free lung expansion—should also guide us in the management of patients during the recovery period.

### 3. The Proper Adjustment of the Percentage or Strength of the Anæsthetic Gas or Vapour.

Before considering the different levels of anæsthesia which are required to meet particular conditions I should like to say a few words upon what may be termed the average level of anæsthesia for surgical operations in general. In healthy and moderately healthy subjects full anæsthesia should, as a rule, be secured at the outset—i.e., the first incision should be made just as the corneal reflex is disappearing, but from this point onwards, when using chloroform or a chloroform mixture, it is advisable and generally possible to permit a very slight degree of this reflex occasionally to manifest itself. With ether, corneal insensibility may in the great majority of cases be safely maintained throughout, although an attempt should be made not to push the administration unnecessarily, for deep etherisation for prolonged periods has its own special risks afterwards. I would here submit to you an important proposition which, if not capable of application in every case of anæsthesia, is certainly capable of application in the vast majority of cases. It is that provided the respiration be freely proceeding and that the corneal reflex be present even to a slight degree the patient's general condition at the moment of observation may be regarded as satisfactory. Speaking generally, we may say that the presence of a corneal reflex indicates the existence of a sufficient degree of respiratory energy to carry on respiration and a sufficiently high blood pressure to carry on circulation. The respiratory energy will, of course, be useless if any obstruction to breathing be present, just as the vaso-motor tone will be useless if from any cause the arterial system be empty. But provided there be no obstruction to respiration and that the arterial system contain a sufficient quantity of blood, the anæsthetist need not fear any central or paralytic failure of breathing on the one hand or any circulatory failure either from the anæsthetic itself or from surgical shock on the other. If, then, whilst respiration is freely proceeding you can so adjust your administration as to retain a trace of corneal reflex you need not, in ordinary surgical cases, pay any attention to the circulation. There is a great tendency amongst those who have had but little experience to keep up unnecessarily deep anæsthesia. For example, let us imagine that we are anæsthetising a patient with chloroform and that the surgeon is half-way through a radical breast operation. Should the corneal reflex be present or should it not? The answer to this question is that it should be present, but in a slight degree; in other words, that the patient should be kept within what may be called the neutral borderland of anæsthesia, being neither too lightly nor too deeply anæsthetised. If the corneal reflex be wholly annulled for considerable periods the patient will be liable to circulatory depression *as the direct result of the operation;* hæmorrhage, though slight during the operation, will be liable to take place afterwards; the recovery of consciousness will be unnecessarily prolonged; and after-vomiting will be favoured. To sum up, we may say that by the most careful attention to symptoms the anæsthetist may, in the great majority of cases, and particularly towards the conclusion of operations, permit the patient to display a slight trace of corneal reflex.

Of the different factors which should be considered in adjusting the strength of the anæsthetic gas or vapour, one of the most important is the particular type of subject. Children, aged persons, anæmic patients, and those who have become exhausted by illness or disease naturally require weaker percentages of anæsthetic than others. I have known a patient with pernicious anæmia to display epileptiform twitchings—the characteristic signal that the administration has been pushed sufficiently far—during the third inspiration of pure nitrous oxide gas. It is a common mistake when anæsthetising comparatively feeble subjects to use a Clover's ether inhaler in much the same way as it should be used for healthy and vigorous persons. In weak and exhausted patients the re-breathing factor should either be made use of to a very slight extent or altogether proscribed, whilst the ether indicator need not be pushed beyond "2." Patients with any pre-existing respiratory derangement require very cautious anæsthetisation and dilute vapour percentages. In bad cases of empyema, for example, only the lightest anæsthesia is permissible. Similar remarks apply to patients who, from cerebral disease, uræmia, the administration of an opiate, or other causes, are in a dazed and torpid state, and also to those who are suffering from traumatic shock. But even healthy patients may unexpectedly prove to be singularly susceptible to anæsthetics and it is the duty of the anæsthetist, by carefully watching the effects produced by the agents he employs, to take the measure, so to speak, of each patient. Tall, plethoric, muscular, and particularly alcoholic subjects generally require very energetic treatment before full anæsthesia can be secured. To attempt to anæsthetise such patients in cold weather with an ether inhaler capable only of supplying a comparatively weak vapour will certainly lead to difficulties.

The next important factor in adjusting vapour percentages is the nature of the operation. Certain operations require for their performance a profound narcosis in order to prevent reflex movement, retching, or other incidents which might embarrass the surgeon or prejudicially affect the success of the operation. The laryngeal, peritoneal, rectal, vesical, and ocular reflexes are amongst the latest to disappear, so that in operations upon these parts full narcosis is usually necessary. The local application of cocaine is a most useful adjunct to chloroform anæsthesia in intra-laryngeal operations, for it enables the anæsthetist to work with a somewhat lighter chloroform anæsthesia than would otherwise be necessary. One of the greatest problems of the modern anæsthetist is the maintenance of deep anæsthesia during certain intra-abdominal manipulations. Whilst there can be no doubt that such an anæsthesia is convenient, and in some cases almost essential to the surgeon, it certainly cannot always be obtained in horizontally placed patients under chloroform without directly subjecting them to the risk of surgical shock of a circulatory type. When this profound anæsthesia is desired it is often wise, therefore, to employ ether. In some cases the administration of morphine before or during chloroform anæsthesia is very useful. When muscular relaxation is essential, as in the reduction of dislocations, abdominal examinations, &c., deep anæsthesia must also be obtained, but great care is necessary not to exceed the limits of safety. On the other hand, most operations within and about the upper air-passages, and particularly those in which hæmorrhage is profuse, require only a moderate anæsthesia; and the same may be said of most operations upon the lungs and pleuræ. It is a mistake, for example, to keep up a very deep chloroform anæsthesia for operations upon the thyroid gland, for those involving the deep structures of the neck, and for operations upon the brain and spinal cord, and the same may be said of those intra-abdominal cases which admit of being conducted during moderate anæsthesia. Another factor in the adjustment of the strength of vapour is the particular stage of the operation in hand. We have already seen that deep anæsthesia should, as a rule, be secured before the operation commences, and that from this point onwards a slight trace of corneal reflex should, if possible, be preserved. There is a point in many administrations which may be called the "critical juncture," and at this point great care is always necessary lest the anæsthesia be too profound. It occurs in abdominal cases just when the abdomen is being opened or just afterwards; in cases of nephrectomy when the pedicle is being pulled upon; in prostatectomy when the urethra is being torn through; and in hysterectomy when traction is at its height. In order to prevent reflex movement at the moment of the skin incision and abdominal rigidity subsequently, the anæsthetist is often tempted in abdominal surgery to push the anæsthetic unduly at the commencement, and if chloroform be the agent in use two risks are thereby incurred—that of overdosage and that of circulatory shock when the abdominal manipulation commences. Contrary to time-honoured doctrines, I would submit to you that at all these junctures the anæsthesia, though deep, should not be too profound. In operations within and about the throat and nose, attended by free hæmorrhage, there is also a critical juncture. It arises at the beginning of the operation—i.e., before the larynx has taken on, and has become practised in, its new function—that of preventing (by swallowing and coughing) the entry of blood into its cavity. In these cases great care must be exercised at the point indicated. There are many operations in surgery in which the manipulations of the surgeon successively involve organs or regions differing widely in their sensibility, and it is often necessary, therefore, to vary the strength of anæsthetic vapour *pari passu* with these manipulations. Sometimes, of course, it is quite impossible to reduce the strength of anæsthetic at the desired moment owing to the surgeon requiring complete muscular relaxation, and it is under such conditions that a change from chloroform to ether is advisable. Profuse or protracted hæmorrhage during any operation should generally be taken to indicate a lessening of the depth of anæsthesia; and the same may be said of cases in which circulatory shock has occurred, and of those in which unavoidable intercurrent asphyxia is present. Considerable practice is necessary in the adjustment of these different strengths of anæsthetic vapour, particularly if no regulating apparatus be used. At the same time such adjustments have their great advantages not only in the direction of providing the surgeon with the anæsthesia required, but also in the direction of ensuring satisfactory recovery.

# The Croonian Lectures

ON

# PLAGUE.

*Delivered before the Royal College of Physicians of London on June 18th, 20th, 25th, and 27th, 1907,*

BY W. J. R. SIMPSON, M.D. ABERD.,
F.R.C.P. LOND.,
PROFESSOR OF HYGIENE AT KING'S COLLEGE, LONDON; GOVERNMENT COMMISSIONER TO INQUIRE INTO CAUSES AND CONTINUANCE OF PLAGUE IN HONG-KONG, 1902, ETC.

## LECTURE III.[1]

*Delivered on June 25th.*

### IMMUNISATION AGAINST DISEASE.

MR. PRESIDENT AND FELLOWS,—The next question from a preventive aspect is whether there is a prophylactic against plague similar to that of vaccination against small-pox, and if so what is its value. The question naturally leads to a consideration of Haffkine's prophylactic against plague and of methods of artificial immunisation. Jenner's great discovery lay in the fact that he ascertained that the passage of the small-pox virus through the cow fixed its properties in such a manner that the immunising effects of the small-pox virus were retained while its power of producing the disease was destroyed. The defects of inoculation with the small-pox virus consisted in the danger to the inoculated which sometimes attended the operation and in the risk of infection which sometimes spread from the inoculated to other persons. Notwithstanding these disadvantages inoculation was practised as the lesser evil because in the majority of cases its effects were comparatively mild and it conferred a very high protection. Inoculation against disease is thus a very old method of protection. In some of the ancient shastras written contemporaneously with the works of Menoo inoculation is mentioned as being practised as a preventive or modifier of small-pox. Even inoculation against plague has been practised among the Turks.

The Brahmins who performed the inoculations against small-pox in India instituted certain procedures to avoid the defects as much as possible. They made it a point to inoculate if possible all the children in the village at the same time so as to prevent natural infection; they selected the virus from a discrete case and they usually kept it several days before inoculating it into individuals, for they found by experience that it produced a milder disease when thus kept than when directly transmitted from person to person. In later times such precautions were often relaxed with results not nearly so satisfactory. In China the inoculations against small-pox were often practised by ignorant men and instead of the small-pox virus being inoculated through the skin, which generally gives a mild attack, it was not infrequently placed in the nostrils and a very severe attack of the disease usually followed. When in China I came across an instance of this kind where some 17 persons had been inoculated in this manner and where the results were serious.

The older methods of inoculation, whether for small-pox or plague, depended on the employment of crude material containing the living germs of the disease and over these there was little or no control. Sometimes the material was efficacious and harmless, at other times it was dangerous. There was also risk of the method, while protecting the individual inoculated, spreading the disease to healthy persons. The discoveries of Jenner, Pasteur, and Haffkine have introduced new methods by which the material employed is fixed in strength, protective and harmless to the individual, does not spread the disease, and is fully under control.

### HAFFKINE'S CHOLERA VACCINATION.

There is a difference between the cholera and plague inoculations introduced by Haffkine. In cholera a living vaccine is employed; in plague a devitalised or chemical vaccine is used. The cholera vaccine needs to be fixed in its strength in order that the microbe shall behave constantly in the same manner when injected alive into man. It was the non-recognition of this fundamental principle which led to

---

[1] Lectures I. and II. were published in THE LANCET of June 29th p. 1757) and July 13th (p. 73), 1907, respectively.

Ferran's failure in Spain. He practised inoculation against cholera on the same principle as the old inoculations against small-pox. The crude microbe isolated from a cholera patient was employed without fixing its strength. In Haffkine's method of inoculation against cholera there are two vaccines. The cholera microbe is first fixed at a high stage of virulence by passing through animals and is maintained at its high strength by the same process. It is necessary to mention that the cholera microbe requires air for its life and accordingly in the process of passing it through a succession of animals it is necessary to alternate this procedure with aeration of the microbe for some hours, otherwise it will die. It is in this way that the strong vaccine is obtained. But as this vaccine when injected under the skin of animals is apt to produce a slough, an attenuated microbe is used as a first vaccine. The attenuation is attained by a prolonged aeration and exposure to a continuous high temperature.

The advantage derived from using a living vaccine is that the immunity is higher and of longer duration. The disadvantage is that it has always to be prepared afresh by a bacteriologist and consequently difficulties arise in its preparation and distribution over large and numerous areas, whereas a devitalised or chemical vaccine can be preserved for a considerable time and sent out to great distances and administered by any physician who knows how to employ it aseptically.

Toussaint was the first to introduce chemical vaccines. He employed a vaccine of this kind against anthrax prepared from the heated defibrinated blood of dead animals. The method worked well as long as there were no spores in the blood. The heat to which the blood could be subjected without being coagulated—viz., 57° C.—would not destroy spores, so that if these were present and animals were inoculated the result was the death of the animals and the danger of spread of anthrax to other animals.

Many experiments were tried on similar lines by others with different kinds of microbes and on different animals, but the immunity obtained by such chemical vaccines was so short-lived that the methods could not be used for practical purposes, and so it happened that up to the time of the cholera inoculations inclusive all vaccinations were done with living vaccines.

### Haffkine's Plague Inoculation.

When the problem of preparing a vaccine against plague presented itself Haffkine with his experience of the cholera vaccine quickly realised the importance of endeavouring to discover a chemical preparation of practical utility. The reason for this was the distribution of the plague in numerous villages and small towns and the impossibility of obtaining a sufficiently large number of bacteriologists to prepare and use a living vaccine. With these facts in front of him Haffkine pursued several lines of research. One of these was to vary the microbial preparation and to study the effect on each of them of different processes of sterilisation. Artificial cultures of the microbe, the blood and exudation of animals dead from plague, and the pulp of their different organs were taken and subjected to heating, drying, chloroform, carbolic acid, lactic acid, or essential oils.

Inoculation with the dried powder of pulverised organs and blood of animals dead from plague was found to be by far the most effective. A few years ago Dr. Klein made a very careful investigation in this direction and was successful in preparing a powder possessing very high immunising properties. In India, however, dying animals are rapidly invaded with intestinal vibrios and bacilli and the heating and drying which were employed to devitalise the plague microbe were not sufficient to kill the spores of these extraneous microbes, so that the same difficulty met with by Toussaint recurred here in another form. Sometimes also the powder appeared sterile in culture but when injected into an animal killed it, plague bacilli being present in its blood; at other times the animal died apparently from toxins, no microbes being found. When the animal did survive it was very thoroughly vaccinated but for the reasons mentioned this method was set aside.

The most practical method of preparation was to use artificial cultures and sterilise them by heat, but it was found that the animals naturally susceptible to plague, such as rats, guinea-pigs, and monkeys, could not be vaccinated by this preparation or required many injections extending over several weeks before any immunity was established. Experiments, however, showed that an animal not naturally susceptible to plague—viz., the rabbit, which possesses a relatively high degree of resistance even to injected plague—could be rendered immune with this chemical vaccine. Influenced by this circumstance and not deterred by the other Haffkine determined to ascertain whether man could not be immunised in a similar way to the rabbit.

On *a priori* reasoning it seemed improbable but the experiment first made in the outbreak of plague in His Majesty's House of Correction at Byculla in Bombay proved the possibility of such immunisation. This epidemic only lasted a week after the inoculations but still it seemed to show that during that short time benefit had accrued from the use of the prophylactic. The result obtained at the Byculla jail was subsequently confirmed by many experiments made under varied conditions and on a larger scale, and finally, it has been established that the immunity in man is not only real and of a satisfactorily high degree but lasts for a considerable time.

These two circumstances demonstrated for the first time the practicability of immunisation by a chemical vaccine. The success of the method encouraged a trial of immunisation on similar lines against typhoid fever, and this also appears to have been attended with successful results.

Experience of the effect produced by the cholera vaccines in India from 1893 to 1896 demonstrated that immunity was obtained against attacks of cholera, but when the inoculation failed and the person inoculated was subsequently attacked the fatality was practically the same as among those not inoculated. This result pointed to antimicrobial immunity being obtained but not to antitoxic immunity, and appeared to be related to the fact that the cholera vaccine consisted of the bodies of living bacilli obtained by cultivation on solid media. Haffkine realised that the defect attaching to the cholera vaccines should, if possible, be remedied in the production of the plague prophylactic and endeavoured to prepare a material which would give, not only an immunity against attack, but also at the same time diminish fatality when an attack occurred.

In the case of microbes producing extra cellular toxins, such as diphtheria, antitoxic properties are obtained in animals by injection of the toxins. Plague cultures in fluid media do not show the presence of any appreciable toxins in the filtrate, but Haffkine observed that when he injected into animals sterilised old fluid cultures of the plague bacillus he obtained a reaction which he could not obtain to the same extent when using the microbes and the filtrate separately. This appeared to indicate that the fluid possessed properties of its own. It encouraged him to try the combination of the microbes and the fluid which later was proved to be a success. The method adopted was to use old cultures rich in bacilli and their secretions. A suitable medium for obtaining such cultures was peptone broth to which were added a few drops of butter or oil. By the end of six weeks the culture is ripe for use and its purity is ascertained by drawing off a small quantity and subjecting it to the tests already described in the first lecture. The culture is then heated at from 55° to 60° C. for 20 minutes, with the result that the microbe is devitalised. The prophylactic then becomes a chemical drug with fixed properties and can be used in measured doses like other drugs. The preliminary fixation of the biological and pathogenic properties of the microbe is under such conditions not an essential process as in the case of cholera and small-pox, where living vaccines are introduced into the system.

The dosage of the prophylactic was determined by careful observation of its effects on man, which led to the adoption of the principle gathered from the study of the results of the cholera inoculations in India. This principle consists in regulating the dose with the view of producing an average temperature of 101° F. The same dose in different individuals gives rise to different ranges of temperature. Following the above standard it is generally observed that in one-third of the inoculated the temperature may rise to 102° F. and above. This proportion should not be exceeded. The thermometer is thus used as the indicator of the reaction. There is no testing of the blood in plague or cholera inoculation for the purpose of ascertaining what dose shall be given. The information obtained by the thermometer has been found to be a reliable guide and supplies a very simple and practical method of regulating the dose. It is a notable fact that in cholera and plague inoculations no instance has been observed of the inoculated groups having been rendered by the inoculation at any time more susceptible to these diseases than the uninoculated.

### THE RESULTS OF THE USE OF THE PROPHYLACTIC.

The harmlessness of the prophylactic was first established by the inoculation of several hundred volunteers, European and Indian. Then its protective effect was ascertained for the first time at the height of an outbreak of plague at the Byculla jail and certain facts were observed by Haffkine which enabled him to arrive at some very important conclusions. These were: (1) that one injection of three cubic centimetres of the prophylactic was sufficient to protect during an existing epidemic; (2) that inoculation was powerless to arrest the disease in those in whom the symptoms have already appeared or develop in a few hours after inoculation; (3) that the inoculation mitigated or aborted the disease in those who were in the incubation stage and had been infected three or four days previously; and (4) that the prophylactic, unlike the vaccines for cholera, rabies, anthrax, or small-pox, exercised its protective effect in less than 24 hours, acting in this respect with a rapidity which was only known in antitoxic sera.

Of these deductions that relating to the effect of the vaccine on individuals in the incubation stage and its power of arresting the development of infection or mitigating the disease appears to be the most incredible, particularly in view of the shortness of the incubation period in plague. Calmette and his co-workers as well as other bacteriologists asserted that an individual inoculated not only in the incubation period but also a short time before infection would succumb to the disease and recommended that no "contacts" or persons exposed to infection should be inoculated. The Indian Plague Commission of 1889, though not endorsing this view, was of opinion that inoculation was not likely to effect any protection for the first five days and was against Haffkine's conclusion as to the benefit of the inoculation in the incubation period. Subsequent study of the subject, however, induced Sir Almroth E. Wright to adopt Haffkine's views, and it is in conformity with the results obtained by Haffkine's inoculation in the incubation stage of plague that he based his opsonic method of treating with vaccines patients suffering from furunculosis, sycosis, acne, and other bacterial infections. The fact of the prophylactic immunising so rapidly and being beneficial in the incubation stage not only excludes the danger that was feared but allows of the application of the prophylactic in infected houses and localities, and generally during the prevalence of an epidemic.

Later observations have fully confirmed Haffkine's conclusions which stand to-day without modification. It is not from observations on animals but from observations on man that the question as to the action of Haffkine's prophylactic has to be worked out and has to be judged. This test has now been applied in many places and under various conditions and always with the same successful result. The observations are divisible into two classes—viz., those that have been made on a small scale in restricted communities living under special administrative and medical control, and those made on a large scale. Owing to the circumstances in which the first class, conducted on a small scale, were carried

## CLASS I.—TABLE A.

OBSERVATIONS ON THE WORKING OF HAFFKINE'S SYSTEM ON A SMALL SCALE, SPECIAL OBSERVATIONS BEING CARRIED OUT ON RESTRICTED COMMUNITIES.

| Name of locality. | Non-inoculated. | | | | | | Inoculated. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Non-inoculated. | Cases. | Percentage of cases to population. | Deaths. | Percentage of deaths to population. | Proportion per cent. of deaths to cases. | Inoculated. | Cases. | Percentage of cases to population. | Deaths. | Percentage of deaths to population. | Proportion per cent. of deaths to cases. | Percentage of saving in cases. | Percentage of saving in deaths. |
| 1. Byculla jail ... ... ... ... ... | 172 | 12 | 7·0 | 6 | 3·5 | 50·0 | 147 | 2 | 1·4 | — | 0 | 0 | 80·0 | 100·0 |
| 2. Umerkhadi jail... ... ... ... ... | 127 | 10 | 7·9 | 6 | 4·7 | 60·0 | 147 | 3 | 2·0 | — | 0 | 0 | 74·1 | 100·0 |
| 3. Undhera village (plague infected houses) ... ... ... ... ... ... | 64 | 27 | 42·2 | 26 | 40·6 | 96·3 | 71 | 8 | 11·3 | 3 | 4·2 | 37·5 | 73·3 | 89·6 |
| 4. Hubli (mill) ... ... ... ... ... | 75 | — | — | 20 | 26·66 | — | 1098 | — | — | 30 | 2·7 | — | — | 89·7 |
| 5. Hubli (employees of Southern Maratha Railway) ... ... ... | 760 | 35 | 4·6 | 21 | 2·7 | 60·0 | 1260 | 11 | 0·9 | 2 | 0·2 | 18·2 | 81·03 | 94·1 |
| 6. Dharwar jail * ... ... ... ... ... | — | — | — | — | — | — | 374 | — | — | — | — | 0 | — | 100·0 |
| 7. Broach (Parsee population) ... | 763 | 9 | 1·2 | 5 | 0·6 | 55·6 | 1080 | 2 | 0·2 | 1 | 0·1 | 50 | 85·3 | 85·7 |
| 8. Broach (tailors' camp) ... ... ... | 135 | 10 | 7·4 | 6 | 4·4 | 60·0 | 90 | — | 0 | — | 0 | 0 | 100·0 | 100·0 |
| 9. Belgaum† (49th Battery R.F.A. Native followers) ... ... ... ... | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 10. Belgaum (Army Hospital Corps, 1897) ... ... ... ... ... ... ... | 3 | 2 | 66·7 | 2 | 66·7 | 100·0 | 80 | — | 0 | — | 0 | 0 | 100·0 | 100·0 |
| Ditto, 1899 ... ... ... ... ... | 5 | 1 | 20·0 | 1 | 20·0 | 100·0 | 79 | 2 | 2·5 | 2 | 2·5 | 100·0 | 87·3 | 87·3 |
| 11. Major Forman's servants ... ... | 2 | 1 | 50·0 | 1 | 50·0 | 100·0 | 28 | — | 0 | — | 0 | 0 | 100·0 | 100·0 |
| 12. Bulsar Shanchis (oil pressers) ... | 35 | 4 | 11·4 | 4 | 11·4 | 100·0 | 261 | 7 | 2·7 | 4 | 1·5 | 57·1 | 76·6 | 86·6 |
| 13. Colaba ward (Chawl), Bombay ... | 32 | 19 | 59·4 | 12 | 37·5 | 63·2 | 21 | 1 | 4·8 | — | 0 | 0 | 99·0 | 100·0 |
| 14. Poona, Yerowda jail.‡ | — | — | — | — | — | — | — | 1 | 0·06 | 0 | 0 | 0 | — | — |
| 15. Aden—Jewish community. (31 households infected.) ... ... ... | 179 | 44 | 24·6 | 29 | 16·2 | 65·9 | 246 | 19 | 7·7 | 8 | 3·3 | 31·2 | 68·3 | 79·5 |
| 16. Aden (special prison)§ ... ... ... | 2 | 2 | 100·0 | 1 | 50·0 | 50·0 | — | 0 | 0 | — | 0 | 0 | 100·0 | 100·0 |
| 17. Aden (Crater Plague Hospital) ... | — | 263¶ | — | 163 | — | 61·9 | — | 21¶ | 7·0 | — | 33·3 | — | — | — |
| 18. Kirkee, near Poona, 1906 ... ... | 12 | 6 | 50·0 | 3 | 25·0 | 50·0 | 1300 | 5 | 0·4 | 1 | 0·1 | 20·0 | 99·2 | 99·7 |

* Four deaths occurred among the prisoners before inoculation. The entire population was inoculated. One case occurred two days after inoculation, which recovered.

† Population 334. Plague continued for 37 days and 23 cases and 17 deaths occurred. Gradually the whole population was inoculated and none of those inoculated were attacked.

‡ Population 1661. Plague continued for 13 days and three cases and three deaths occurred in those who had not been inoculated. 1658 were inoculated by the thirteenth day; of these one was attacked but recovered. There were no further cases.

§ All the prisoners were inoculated excepting two; these two were attacked, one of whom recovered. When inoculation completed no cases, although rats were dying from plague. ¶ Admissions.

These observations were made in places where non-inoculated people had between 1·2 and 100 per cent. of cases and between 0·6 and 66·7 per cent. of deaths, with a proportion of deaths to cases varying between 50 and 100 per cent. The inoculated people of the same places had between 0 and 11·3 per cent. of cases and between 0 and 4·2 per cent. of deaths, with a proportion of deaths to cases varying between 0 and 57·1 per cent. The number of cases among the inoculated was reduced by between 68·3 and 100 per cent., and the number of deaths by between 79·5 and 100 per cent., as compared to the incidence of attacks and deaths among the non-inoculated people of the same place.

out and which permitted of the results being carefully watched and thoroughly checked, they possess a special value on account of their exactness and precision.

The subjoined Table A shows the incidence of plague cases and plague deaths in some 18 small communities under careful control where a part of the inhabitants were inoculated and a part remained not inoculated; most of them are taken from the reports of Colonel W. B. Bannerman, I.M.S. The table shows their comparative liability to attack and death and the percentage of saving in cases and deaths among the inoculated as compared with the not inoculated.

In the Byculla jail, out of 172 not inoculated there were 12 cases of plague, six of which proved fatal, while among 147 inoculated there were only two cases and no deaths—that is, among the non-inoculated 7 per cent. of the population were attacked and 3·5 per cent. of the population died, and the proportion of deaths to cases was 50 per cent., whereas among the inoculated only 1·4 per cent. of the population with two deaths—that is, among the non-inoculated 4·6 per cent. of the population were attacked and 2·7 per cent. of the population died with the proportion of 60 per cent. of deaths to cases, whereas among the inoculated there was 0·9 per cent. of cases to the inoculated population and 0·2 per cent. of deaths with a proportion of deaths to cases of 18·2 per cent. The percentage of saving in cases amounted to 81·03 per cent. and of saving in deaths to 94·1 per cent.

Among these 18 observations there are several where the whole community was inoculated with the result that the plague was arrested. Thus in the Yerowda Jail, Poona, plague appeared and in 13 days caused three cases which were fatal. By the thirteenth day the whole of the jail consisting of 1658 persons were inoculated, one of whom was attacked, but recovered, and there were no further cases. In the Aden Prison all the prisoners were inoculated except two; these two were attacked with plague and one recovered.

## CLASS II.—TABLE B.

### OBSERVATIONS OF THE WORKING OF THE SYSTEM ON A LARGE SCALE.

| Name of locality. | Non-inoculated. | | | | | | Inoculated. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Non-inoculated. | Cases. | Percentage of cases to population. | Deaths. | Percentage of deaths to population. | Proportion per cent. of deaths to cases. | Inoculated. | Cases. | Percentage. | Deaths. | Percentage. | Proportion per cent. of deaths to cases. | Percentage of saving in cases. | Percentage of saving in deaths. |
| Mora ... ... ... ... ... ... ... ... | 580<br>(about) | 26 | 4·5<br>(about) | 24 | 4·1<br>(about) | 92·3 | 419 | 7 | 1·7 | — | 0 | 0 | 62 7<br>(ab't) | 100·0 |
| Damaun ... ... ... ... ... ... ... | 6,033<br>(about) | — | — | 1482 | 24 6 | — | 2,197 | — | — | 36 | 1·6 | — | — | 93·4<br>(ab't) |
| Lanowli ... ... ... ... ... ... ... | 377 | 78 | 20 7 | 57 | 15·1 | 73·1 | 323 | 14 | 4·3 | 7 | 2 2 | 50·0 | 79·1 | 85·7 |
| Kirkee, in 1897 ... ... ... ... ... | 859 | 143 | 16·6 | 98 | 11 4 | 68·5 | 671 | 32 | 4 8 | 17 | 2·5 | 53·1 | 71·4 | 77·9 |
| Undhera village, whole population... | 437 | 27 | 6 2 | 26 | 5 9 | 96·3 | 513 | 8 | 1·6 | 3 | 0·6 | 37·5 | 74·8 | 90·2 |
| Khoja community in Bombay, 1898 | 9,516<br>(about) | — | — | 77 | 0 8<br>(about) | — | 3,814 | — | — | 3 | 0 08 | — | — | 90·3<br>(ab't) |
| Hubli ... ... ... ... ... ... ... ... | 17.786 | — | — | 2348 | 13·2 | — | 24,631 | — | — | 338 | 1·3 | — | — | 89 6 |
| Dharwar (town) ... ... ... ... ... | 16,848 | 1,100 | 6·5 | 839 | 5·3 | 80·8 | 4,231 | 129 | 3·04 | 54 | 1·3 | 41·8 | 52·2 | 75 7 |
| Gadag (town) ... ... ... ... ... ... | 4,163 | 278 | 6·6 | 216 | 5·2 | 77·7 | 13,004 | 193 | 1·5 | 83 | 0 6 | 43·0 | 77·7 | 87·6 |
| Belgaum (cantonment)... ... ... ... | 4,558 | 506 | 11·1 | 346 | 7·59 | 68·4 | 4,842 | 78 | 1·6 | 40 | 0·83 | 51 3 | 83 8 | 89·1 |
| Ahmednager (district) ... ... ... ... | 8,794 | 563 | 6·4 | 415 | 4·7 | 73·7 | 2,493 | 70 | 2 8 | 31 | 1·2 | 44·3 | 56·2 | 77 0 |
| Aden (Jewish community)... ... ... | 982 | 83 | 8 4 | 65 | 6·6 | 78·3 | 1,190 | 23 | 1 9 | 8 | 0 6 | 34 7 | 77·0 | 89·7 |
| The Punjab: | | | | | | | | | | | | | | |
| 1897–1900 ... ... ... ... ... ... | — | — | — | — | — | 60·99 | 306,730 | — | — | — | — | 36·55 | — | — |
| 1900–1901 ... ... ... ... ... ... | — | — | — | — | — | 60·59 | 197,278 | — | — | — | — | 36·50 | — | — |
| 1901–1902 ... ... ... ... ... ... | 3,909,326 | 266,700 | 6·8 | 173,732 | 4·4 | 65·14 | 235.776* | 881 | 0·4 | 209 | 0·1 | 35·07 | 94·5 | 97·1 |
| 1902–1903 ... ... ... ... ... ... | — | — | — | — | — | 60·1 | 505,849 | — | — | — | — | 30·47 | — | — |
| *Re* 1 portion of the inoculated in 1902–03 ... ... ... ... ... ... ... | 639,630 | 49,433 | 7 7 | 29,723 | 4·6 | 60 1 | 186,797 | 3399 | 1·8 | 817 | 0 7 | 23 9 | 76·5 | 90 6 |
| Aden, 1905... ... ... ... ... ... ... | 1052 | 368 | 34·9 | 294 | 27·9 | 78·6 | 898 | 37 | 4 1 | 14 | 1 6 | 37 8 | 88·2 | 94·4 |

* Besides 32,789 in Punjab native states.

These observations refer to places where the non-inoculated part of the population had between 4·3 and 34·9 per cent. of cases and between 0·8 and 27·9 per cent. of deaths, with a proportion of deaths to cases varying between 60·1 and 96·3 per cent. The inoculated part of the population had between 0·4 and 4·8 per cent. of cases and between 0 and 2·5 per cent. of deaths, with a proportion of deaths to cases varying between 0 and 53·1 per cent. The number of cases among those inoculated was reduced by between 52·2 and 94·5 per cent. and the number of deaths by between 75·7 and 100 per cent., as compared to the incidence of attacks and deaths among the non-inoculated inhabitants of the same localities. The results observed in the inoculations made on a large scale were therefore substantially the same as those obtained in special observations made for study in restricted numbers of people living under special administrative and medical control.

were attacked and there were no deaths. The percentage of saving in cases was accordingly 80 per cent. and in deaths 100 per cent.

Again, in Umerkhadi jail, out of 127 persons not inoculated there were ten cases with six deaths, whereas among the inoculated there were three cases and no deaths—that is, among the non-inoculated 7·9 per cent. of the population were attacked and 4·7 per cent. of the population died, with the proportion of deaths to cases of 60 per cent., whereas among the inoculated there were only 2 per cent. of the population attacked and none died. The percentage of saving in cases amounted to 74 per cent. and in deaths to 100 per cent.

The results given in these first two practically represent the results in the others; for instance, if the employees of the Southern Maratha railway be taken it will be observed that out of 760 not inoculated 35 cases occurred with 21 deaths, whereas out of 1260 inoculated 11 cases occurred When inoculation was completed no cases occurred although rats were dying from plague.

Summing up these experiments as a whole, they were made in places where the *non-inoculated* people had between 1·2 and 100 per cent. of cases and between 0·6 and 66·7 per cent. of deaths, with a proportion of deaths to cases varying between 50 and 100 per cent. The *inoculated* people of the same places had between 0 and 11·3 per cent. of cases and between 0 and 4·2 per cent. of deaths, with a proportion of deaths to cases varying between 0 and 57 per cent. The number of cases among the inoculated was reduced by between 68·3 and 100 per cent. and the number of deaths among the inoculated was reduced by between 79·5 and 100 per cent., as compared to the incidence of attack and deaths among the non-inoculated people of the same places.

The conclusions derived from these observations will be more clearly followed if the comparative results are given in a graphic form and the smaller numbers excluded.

[Professor Simpson here showed upon the screen several diagrams dealing graphically with these figures. In Diagram I. A the most instructive epidemics had been taken which illustrated different degrees of severity on the population, the incidence of plague varying from 1·2 to 59·4 per cent. of the population. The columns were formed on the principle of each column representing 100 inhabitants inoculated or not inoculated.

*Diagram I. A* showed that the observations were made in epidemics in which the incidence of *attack* in the non-inoculated varied from 1·2 to 59·4. The incidence of attack among the inoculated varied from 0 to 11·3. In general the incidence of attack on the inoculated corresponds to the severity of the epidemic, but this is not uniformly the case, for in a few the inoculated show a striking immunity in the midst of very severe epidemics.

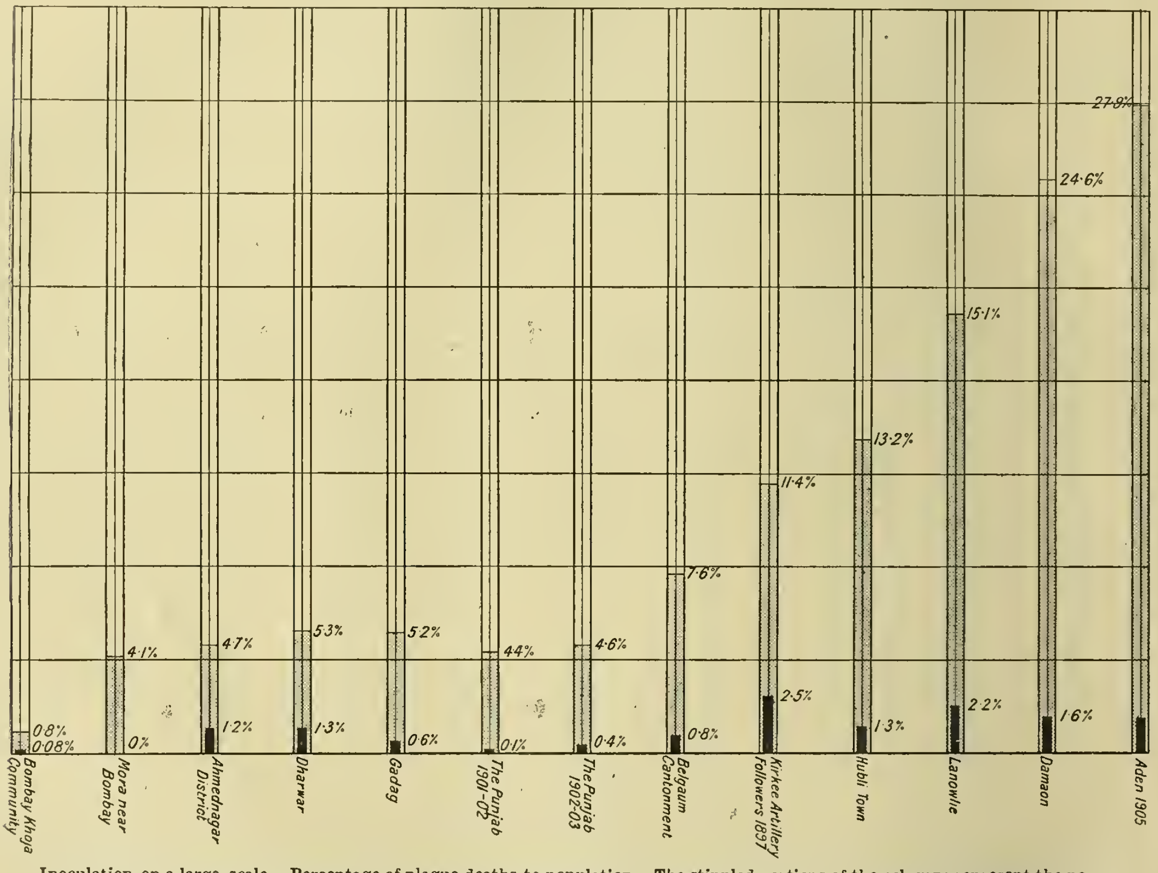
*Diagram I. D* represented the percentages of plague attacks averted by inoculation. Each column represented 100 attacks which occurred among the uninoculated population; the upper shaded portion of the columns represented the number of attacks which occurred in an equal number of the inoculated population. The remaining blank portion of the column shows the percentage of attacks averted by inoculation; the saving in attacks varies from 58·3 to 100 per cent. In the Jewish community in Aden against each 100 attacks among the non-inoculated there were 31·7 in the inoculated and the saving in cases was 68·3, whereas in the tailors' camp at Broach the inoculated escaped attack altogether and the saving was 100 per cent.

The second class of observations, which represented observations of the working of the system on a large scale, furnished results similar to those obtained on the smaller scale. Table B gave those results. Of these Professor Simpson specially referred to the observations at Kirkee in 1897, because he had the opportunity, along with Haffkine, of checking the results on the spot. Of the community on which the experiment was made, 859 were not inoculated and 671 were inoculated. Out of the 859 not inoculated there occurred 143 cases with 98 deaths, and the proportion of deaths to cases was 68·5 per cent. Out of 671 inoculated there were 32 cases with 17 deaths and the proportion of deaths to cases was 53·1 per cent. Thus the incidence of attack on the not inoculated was 16·6 per cent. and of deaths 11·4 per cent., whereas the incidence of attack on the inoculated was 4·8 per cent. and of deaths 2·2 per cent. Or, in other words, there was among the inoculated a percentage of saving in cases of 71·4 and of deaths of 77·9, as compared with the not inoculated.] He went on to say:—

Undhera village may also be taken as another example. In this village more than half the population was inoculated, 513 being inoculated and 437 not being inoculated. Out of the 437 not inoculated there were 27 cases of plague with 26 deaths, the proportion of deaths to cases being 96·5 per cent. Out of the 513 inoculated there were eight cases with three deaths, the proportion of deaths to cases being 37·5 per cent. The incidence of attack among the not inoculated was 6·2 per cent. and of deaths 5·2 per cent., while among the inoculated the incidence of attack was 1·6 per cent. and of deaths 0·6 per cent. So that among the inoculated the percentage of saving in cases was 74·8 and in deaths 90·2, as compared with the not inoculated.

Considering the observations as a whole in the different places recorded the results show that the non-inoculated part of the population had between 4·3 and 34·9 per cent. of cases and between 0·8 and 27·9 per cent. of deaths, with a proportion of deaths to cases varying between 60·1 and 96·3 per cent., while the inoculated part of the population had been 0·4 and 4·8 per cent. of cases and between 0 and 2·5 per cent. of deaths, with a proportion of deaths to cases varying between 0 and 53·1 per cent. The number of cases among those inoculated was reduced by between 52·2 and 94 per cent., and the number of deaths between 75·7 and 100 per cent., as compared to the incidence of attacks and deaths among the non-inoculated inhabitants of the same localities.

The following diagrams refer to the observations on large



Inoculation on a large scale. Percentage of plague deaths to population. The stippled portions of the columns represent the percentage of deaths in the non-inoculated. The black portions represent the percentage of deaths among the same number of inoculated.

communities and they are constructed on the same principle as those relating to the smaller communities.

*Diagram II. B* (a copy of which we print) illustrates epidemics of different degrees of severity and the relative incidence of the disease among the not inoculated and the inoculated. The whole column represents 100 inhabitants inoculated or not inoculated, the shaded portion shows the percentage of deaths among the not inoculated, and among the inoculated. The incidence of deaths in the non-inoculated population varied between 0·8 and 27·9 per cent., whereas among the inoculated it varied between 0 and 2·5 per cent.

[*Diagram II. E* showed the saving in the number of deaths among the inoculated compared to the non-inoculated. Each column represented 100 deaths which occurred among the uninoculated population. The shaded portion of the column represented the number of deaths which occurred in an equal number of the inoculated population. The remaining blank portion of the column showed the percentage of deaths averted by inoculation. The saving in the number of deaths effected by the inoculations varied between 75·7 and 100 per cent.]

These diagrams bring out in a very clear manner the great value of the inoculation. Stated generally, the average reduction amounts to three times fewer attacks among the inoculated and should the inoculated take plague the chances of death are reduced at least twice. Accordingly, the chances of escape from death are 6 to 1 in favour of the inoculated compared to the uninoculated. In many cases they are at least 10 to 1 in favour of the inoculated—that is, out of 1,000,000 deaths among a non-inoculated population, if that population had been inoculated and exposed to the same infection, 900,000 lives would have been saved.

There are numerous other observations that might be quoted showing the value of Haffkine's prophylactic as a protective against plague. I shall content myself, however, by giving two further examples, one recorded by Dr. J. A. Turner, health officer of Bombay, and the other by Lieutenant-Colonel J. A. Cunningham, I.M.S. The first relates to the municipal employees under Dr. Turner. 7182 were inoculated and 418 were not inoculated. Out of the 7182 inoculated there were 14 attacked with plague and 13 died, being a percentage of 0·19 of attacks and 0·18 of deaths, whereas among the 418 not inoculated there were 28 attacked and 26 deaths, equal to a percentage of 6·7 attacks and 6·2 deaths. If the inoculated had suffered to the same extent as the non-inoculated they would have furnished 481 attacks with 446 deaths, instead of 14 and 13 respectively. The second refers to a small plague-stricken village in the Umballa district of the Punjab, where Lieutenant-Colonel Cunningham inoculated nearly half the population. Lieutenant-Colonel Cunningham describes the circumstances connected with the inoculations as follows :—

> The village is Chamaru, about nine miles from Umballa city, situated in Thana Ganour in the Patiala State, the population of which was 783 souls. Narain Singh, a Lambardar of the village, brought in batches to the civil hospital, Umballa, between 21st and 27th March, 1907, 312 people, comprising men, women, and children of all classes, and these were inoculated with plague prophylactic serum by Captain Ross, I.M.S., assistant plague medical officer. The Lambardar, to whom great praise is due, took this action because rats were dying of plague in the village. On the 22nd March, the day following the first batch of inoculations, cases of plague were observed amongst the people of the village, and between this date and the 14th May 64 people contracted the disease, 38 dying.
>
> We can now compare the results (which I had carefully verified on the spot by a medical officer) between the 312 inoculated people and the 471 uninoculated similarly situated in all respects, except for the difference in inoculation. Out of 312 inoculated, 13 contracted plague and four died, whilst amongst 471 uninoculated people 51 got plague and 34 died. The percentage works out for inoculated, attacks 4·13 per cent. and deaths 1·25 per cent.; whereas for uninoculated the figures are: attacks 10·8 per cent. and deaths 7·2 per cent.
>
> For comparison I had the results ascertained in another village, Rampur, population 484, situated two miles from Chamaru in the Patiala State, where no inoculation had taken place. Here there were 74 attacks and 32 deaths, the disease occurring simultaneously with that at Chamaru between 14th March and 14th May; the percentages here are: attacks about 15·2 per cent. and deaths 6·6 per cent. of the population. Of the four who died in Chamaru amongst the inoculated two of them showed signs of the disease the day following the inoculation, and in their case it is safe to assume that their fate was sealed by previous infection before the protective effect of the inoculation came into operation.
>
> It is, I think, a fair assumption that the inoculation of these 312 people saved the lives of 19 and saved 21 others from an attack of a very serious disease. If we could conceive a relative amount of immunity from death and plague throughout the Punjab, what a difference it would make in the experience of thousands of families, and in the population of the province. Even if this Umballa district, with its population of about 763,250 had been thoroughly inoculated, these figures show that about 20 000 of the 26,551 deaths from plague this season might have been averted. This and previous experience would justify the revival of an extensive inoculation campaign throughout the country.

### DURATION OF IMMUNITY.

Observations in Hubli, Dharwar, and Gadag, three towns in the Southern Mahratta country where a large number of inoculations were done in 1898, tend to show that the effects lasted for several years (weekly reports of collector of Dharwar). The annual reports of the Parsee community in Bombay and the general report issued by them in 1902 seem to indicate that the effect of the inoculations lasted four or five years, though gradually it diminishes. Certain indications in a similar direction were obtained in the Punjab in observations made in 20 villages.

### THE MULKOWAL ACCIDENT.

The inoculations have been going on for ten years in India, and several millions of people have undergone the operation. In these ten years there has been only one serious accident, and this was due to a departure from the technique or rules prescribed by the laboratory when opening a bottle of prophylactic in a village in the Punjab in 1902, in other words, to a faulty application of the prophylactic and not to a fault in its preparation. This accident is an important event in the history of plague operations and as the inquiry into it is of great scientific interest it is desirable briefly to record the salient facts connected with it. These facts have been gathered by a special commission of inquiry in India. Briefly, they are that the bottle was one of five filled from the same cultivation flask, and four were used without any ill effects, proving that the laboratory flask was not contaminated; further the bottle had been issued from the laboratory 26 days before being opened and when opened had no smell. This absence of smell is proof that no culture, even of a few days old, of the tetanus bacillus was present. A number of other facts confirm this conclusion. Thus the period of incubation and the duration of the disease were prolonged, which would not have been the case with an injection of a ready-made culture and toxin. It was found that the Mulkowal tetanus bacillus when experimentally introduced into a bottle of water agar prophylactic for a few days produced a very rich and extraordinarily toxic culture; 1½ cubic centimetres of this mixture of toxins and microbes would represent an infection such as never occurs in nature. The disease should therefore have been of the most fulminating character ever observed clinically; whereas, on the contrary, it was of an average character with a relatively long incubation period and duration of the disease. The syringe, moreover, with which the injections were made did not convey tetanus to those inoculated from other bottles which would have been the case if it had been infected with a rich culture of tetanus, notwithstanding a soakage for a few minutes in a carbolic solution of 1 in 20. The dregs of the bottle showed some aerobic microbes and only a poor and weak culture of tetanus such as would develop under aerobic conditions, subsequently to the emptying of the bottle. The actual contamination of the bottle was rendered possible by the local authorities having abolished the laboratory instructions of sterilisation by heat and having substituted for them momentary dipping in carbolic acid. In the opening of the bottle the cork and neck were not sterilised by passing through the flame and for withdrawing the cork soiled forceps were used which had fallen to the ground and were applied to the mouth of the bottle without sterilisation. The fact that no accident occurred while the proper technique was unaltered proves the high degree of safety with which operations on a large scale can be carried out in India.

---

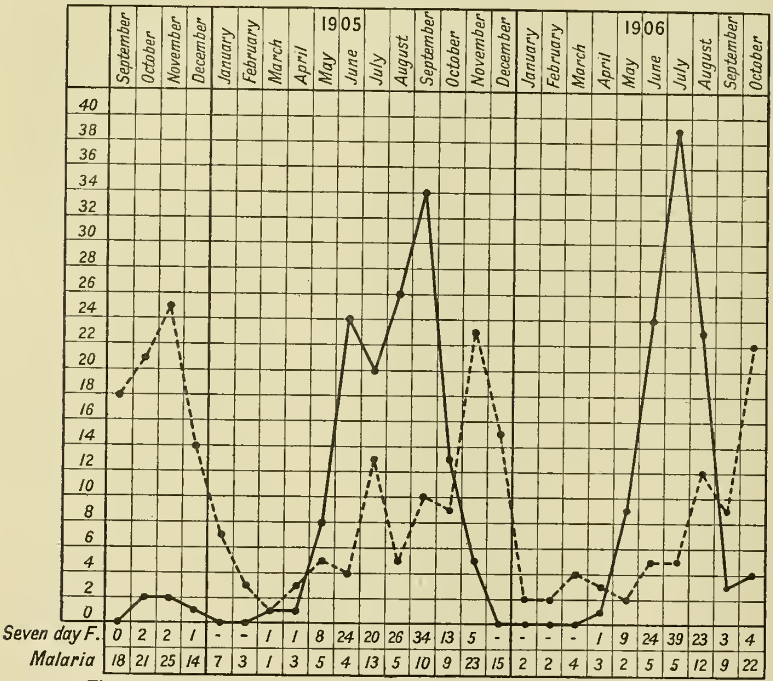
ASSOCIATION OF SCOTTISH MEDICAL DIPLOMATES.—The annual general meeting of this association was held on June 19th at 11, Chandos-street, Cavendish-square, W. The report of the council was unanimously adopted. The retiring President, Mr. C. St. Aubyn-Farrer, was made an honorary vice-president. Dr. David Walsh was elected President for the year 1907–08, that post being tenable for one year only without break. Mr. Sydney Stephenson was re-elected honorary treasurer and Dr. Arthur J. Harries was appointed honorary secretary. Mr. Skene Keith and Mr. Charles Ryall were elected to vacancies on the council. We are requested to state that Dr. Alexander Morison, Dr. C. O. Hawthorne, and Dr. T. N. Kelynack have resigned their position as members of the council of the society.

# A COMMON SPORADIC SEVEN-DAY FEVER OF INDIAN PORTS SIMULATING DENGUE.[1]

BY LEONARD ROGERS, M.D. LOND., F.R.C.P. LOND.,
MAJOR, I.M.S.; PROFESSOR OF PATHOLOGY, MEDICAL COLLEGE, CALCUTTA.

IN order to ascertain what proportion of the fevers in Europeans in Calcutta are malarial and if any other short fevers commonly occur there I have examined blood slides taken on admission before any quinine was given and kept notes and charts of every fever case in the large European Hospital for two complete years, 1350 consecutive cases being thus worked out. Commencing in the middle of September I found that almost all the short fevers for the first seven months—that is, up to the end of April—showed malarial parasites in their blood, although even the malarial cases had become very few since the end of January. In May, and still more from June to September, fevers of short duration began to increase once more, but now malarial parasites were conspicuous by their absence, and it soon became clear that the type and symptoms of the fevers then seen were quite different from the malarial series and more closely resembled in their general characters influenza and dengue (Diagram I).

DIAGRAM I.



The seasonal influence of seven-day fever compared with that of malaria.

During the following year of 1906 a similar, but shorter, prevalence was again noted, while an examination of the hospital records for several previous years showed that this fever always appeared at about the same time in greater or smaller numbers year by year, while its seasonal incidence was quite distinct from that of true malarial cases. I published a short account of this newly separated fever in the *Indian Medical Gazette* for November, 1905,[2] and dealt with its seasonal incidence and differentiation from malaria in the same journal in March, 1906, since which I have had much further experience of the disease and studied both its distribution in India and the literature of allied affections and so am anxious to bring it up for discussion by this society.

## CLINICAL DESCRIPTION OF SEVEN-DAY FEVER.

*Onset.*—The onset of the fever is almost invariably found to be quite sudden and frequently to commence with chilliness and not rarely with a rigor, which in a few exceptional cases may recur, but not with the regularity of a true malarial fever. I have known a hospital patient convalescent from some other disease to be suddenly attacked with seven-day fever while out for a drive, his temperature being found elevated on his return. The onset is thus more sudden than is usual in typhoid fever.

*Appearance on admission.*—I shall show that about half the cases of this fever seen in Calcutta were admitted during the terminal rise about the fourth or fifth day of the fever, but in those who come in an early stage or are attacked while in hospital, the following points may be noted. The face was usually flushed and the conjunctiva presented a vivid red appearance, while the general expression was often dull and listless and highly suggestive of early typhoid fever, and in several cases the addition of some abdominal pain and a few suspicious spots gave rise to such a strong suspicion of that disease that a Widal test was performed with a negative result, which was soon confirmed by the early cessation of the fever. Moreover, I have frequently seen such typhoid-like cases in consultation and I regard their occurrence as a point of great importance in separating this sporadic seven-day fever from epidemic dengue, which it closely simulates in some repects, for I can find no description of typhoid-like cases in dengue, although they could not well have been overlooked in that disease if the two fevers are one and the same.

*Headache.*—Severe headache, almost invariably frontal, is one of the most constant symptoms accompanying the onset of the fever, often together with pain in the back of the eyes, so that when asked to point out exactly where the pain is felt the patient places his forefinger and thumb one on each side just behind the external orbital processes of the frontal bone. The headache in malaria is less frequent and more variable in position than that of seven-day fever.

*Pains in the back and limbs.*—In addition to headache, pains in the back, and only slightly less frequently in the limbs as well, are almost constantly present, while occasionally they are described as occurring in the joints, but without any local swelling or tenderness. They generally come on suddenly with the initial fever and may be sufficiently severe to disturb the night's sleep, but according to several medical men with a personal experience of both seven-day fever and dengue (who expressed their opinions at a discussion on the subject at the recently instituted Medical Section of the Asiatic Society of Bengal), the pains in the sporadic fever are nothing like as severe and intractable as those of true epidemic dengue. They more closely resemble those of influenza and are more constant and severe than the aching pains of malarial fevers.

*Alimentary system: tongue.*—Another very characteristic feature is the appearance of the tongue, the dorsum being furred, often markedly so, while the edges are raw and red, and a "strawberry" appearance may be seen. This condition is in marked contrast to the uniform slight furring usually met with in malarial fevers, but, on the other hand, it resembles that of influenza and dengue from which the diagnosis may be equally difficult.

*Sickness.*—This symptom was not frequently recorded, much less so than in malaria, so its absence is a point in the differential diagnosis against the latter disease.

*Bowels.*—There were no constant features regarding the bowels, which were usually regular, while constipation and slight looseness were about equally frequently met with in the remainder. Pain in, or slight distension of, the abdomen was also occasionally noted.

*The liver.*—Very rarely was the liver slightly enlarged and no symptoms referable to derangement of this organ were met with.

*The spleen.*—This organ was very rarely enlarged, and then only to a slight degree, so that increase in the size of this organ is in favour of malarial as against seven-day fever.

---

[1] A paper read before the Royal Medical and Chirurgical Society on April 9th, 1907.

[2] Indian Medical Gazette, November, 1905.

*Respiratory system.*—Symptoms referable to the lungs were conspicuous by their absence, very slight bronchitis being only very rarely seen, while in no case did pneumonia or other acute inflammatory complications make their appearance. Coryza was equally rare, so much so that I failed to find a case showing this symptom from which to try to isolate the influenza bacillus. This absence of respiratory symptoms is most important in differentiating this disease from influenza, which the general distribution of the disease and its pains caused it to resemble so closely that in my preliminary account I described it provisionally as "a peculiar type of influenza-like fever." Since then I have analysed all the cases of influenza admitted to the European Hospital, Calcutta, in the epidemic year 1892 and found that throat and lung symptoms were almost invariably present, while both the seasonal incidence and temperature curve were entirely distinct from those of seven-day fever, which is therefore certainly not influenza. The absence of respiratory symptoms is, then, a very important point of differentiation of seven-day fever from influenza.

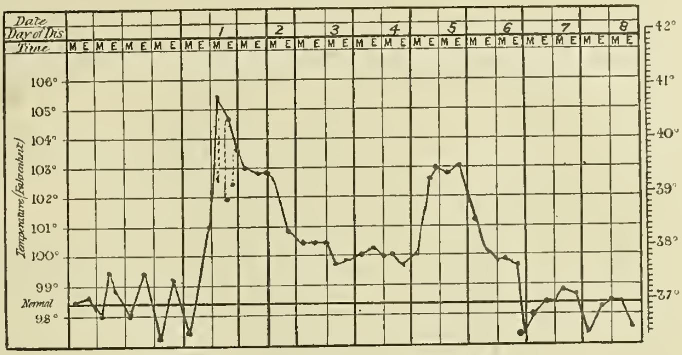
*Circulatory system.*—The heart does not appear to suffer in seven-day fever in the way it so commonly does after influenza, and once the pyrexia has ceased convalescence is fairly rapid. The pulse, however, presents a very important feature—namely, a most constant and characteristic slowness relatively to the temperature, just as is so often seen in typhoid fever. At the very beginning it may be fairly rapid and rise to over 100 beats per minute, but once the patient has been placed at rest in bed it rarely rises above that point. During the terminal high rise of the temperature it scarcely ever exceeds 100, being more commonly about 80 to 90 only, while after the temperature falls finally to normal it may be 60 or less. The great practical importance of this feature is that it nearly always allows of the difficult cases only admitted during the terminal rise of temperature being differentiated from true malaria, with which they have hitherto been almost invariably confused, for in the latter condition when the pyrexia rises to 103° or 104° F. the pulse is nearly invariably over 100 per minute and usually up to 110 or more.

*Cutaneous system.*—Rashes are occasionally seen in this disease but were only noted in a small proportion even of those patients who were admitted to hospital in the early stages of the fever. In three cases out of 26 consecutive early cases a few small rose spots were detected on the abdomen, while in three more a definite rash appeared on the arms and legs, being best seen on the forearms as a mottled or measly looking eruption. A more extensive mottled appearance may also rarely occur, and such cases may be very difficult to distinguish from measles, and have, indeed, been admitted into the infectious block as cases of that disease. These rashes are very inconstant, and in this respect differ greatly from the text-book descriptions of the secondary eruption of true epidemic dengue.

### THE TEMPERATURE CURVE.

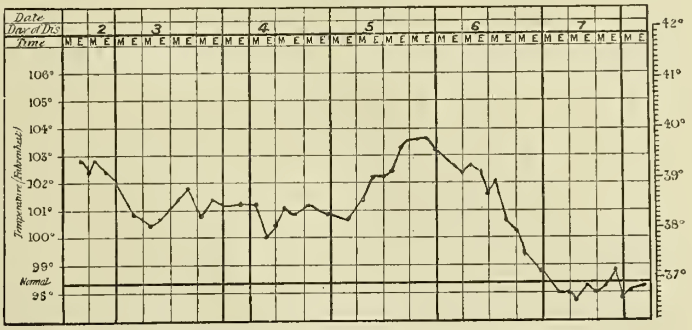
I now come to the course of the fever, which can best be illustrated by the temperature charts thrown on the screen. These vary very much in accordance with the stage of the fever at which the patient comes under observation, so that it was only through careful watching of a long series of cases that I was able to recognise that the different types seen were but variations of a single disease, and so to separate it from "abortive typhoid" and "simple continued fever" so-called on the one hand, and from malaria on the other, these being the terms under which the cases have hitherto

CHART 1.



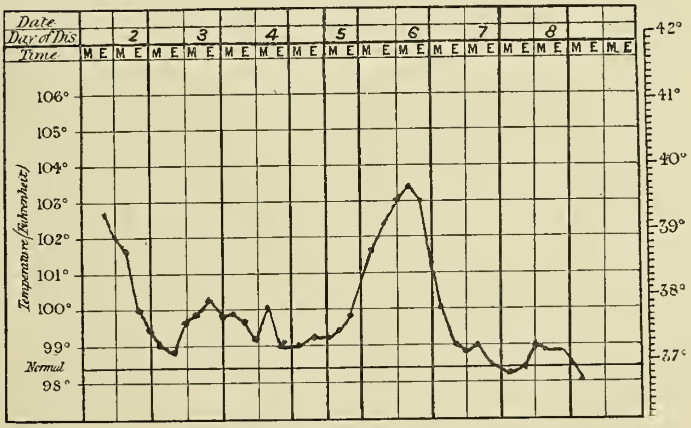
Complete typical saddle-back temperature curve.

CHART 2.



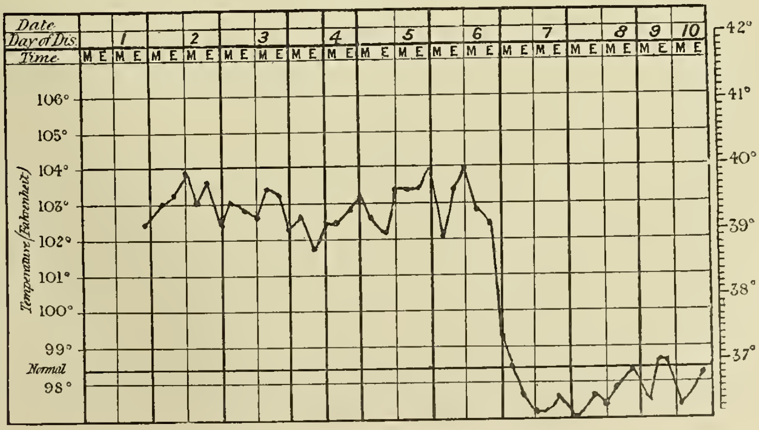
Two-hourly chart showing continued type of fever.

CHART 3.



Deep saddle-back remission.

CHART 4.



High-continued pyrexia resembling typhoid fever.

been almost invariably returned in the different parts of India where this fever occurs. Nevertheless, the fever has a most characteristic temperature curve, best described by the term "saddle-back," which it will be well to show first, and then to return to the variations from this typical course.

*The typical saddle-back temperature curve.*—Chart 1 shows the characteristic temperature curve from beginning to end. The temperature, which was taken every four hours, rose rapidly to over 105° and was very little reduced by repeated spongings (as shown by the dotted lines in the chart). It gradually declined during the next two days to about 100°, at which point it remained steadily for three days before the characteristic terminal rise carried it up again to 103° and was succeeded by the final fall occupying 24 hours. The pulse was markedly accelerated during the unusually high first rise of the temperature, but during the terminal one it is noteworthy that it was not found to reach over 82 beats a minute with a pyrexia of 103°.

Chart 2 is a two-hour curve showing how continued the fever was between 100° and 102° before the typical terminal rise. The pulse in this case was never recorded as above 100 and never reached even 80 during the terminal rise, in spite of the temperature attaining to over 103°, a most characteristic feature of this fever. In fact, up to the sixth day the pulse and temperature curve might have been those of typhoid fever, except that in my experience such a saddle-back remission to as low a point as 100° is rare in the early stage of typhoid fever once a higher point has been reached.

Chart 3 again shows the same saddle-back type but with a still more marked remission to reach 99°, and a final rise once more to 103°, accompanied by a pulse never exceeding 100 per minute, except immediately after admission.

One step more to a complete remission of the temperature to the normal point and we arrive at a case in which the pyrexia ceased for two complete days and yet the terminal rise to 103° occurred before the final fall to normal. Such a complete remission as this is exceptional, for in five-sixths of my cases, patients admitted within the first few days, the temperature never fell below 99° during the usual remission, while in considerably fewer still did it actually reach the normal line, a point in which this seven-day fever differs most essentially from the three day pyrexia ending by crisis of true epidemic dengue.

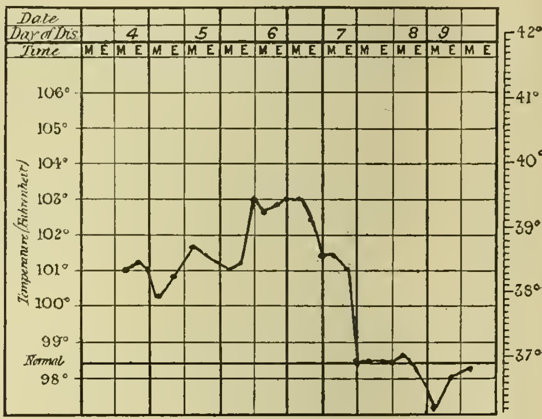
*Continued typhoid-like group.*—Although the saddle-back temperature curve is by far the most characteristic and frequently met with type in patients admitted in the early days of the fever, still there may be considerable variations from this form, the most important of which is the continued type simulating the early stages of typhoid fever, for the latter disease by no means very rarely begins fairly abruptly and without the classical step-like rise in cases in tropical India. Chart 4 is one of the most marked examples of this form I have met with, although I have a number of charts showing an equally continued fever but usually at a slightly lower level. These continued cases frequently give rise to needless fear of typhoid fever, but the symptoms already described will, as a rule, allow of a correct diagnosis being arrived at after some experience of the disease. In several private cases, in which I was asked to examine the blood for typhoid fever, I have been able to recognise the fever clinically and correctly to assure the friends that the temperature would fall on the sixth or seventh day.

In another patient attacked while in hospital the high initial rise was less abrupt than usual, so that the terminal one showed the highest point of the pyrexia, but with a slow pulse; a less common type which may also give rise to a suspicion of typhoid for several days. The opposite condition also occurs, quite exceptionally, in which the terminal rise is completely absent, although the temperature may not finally reach the normal until the sixth day.

*Terminal cases.*—I have already mentioned that just about half these patients only come to hospital during the terminal rise of temperature, and this is easy to understand when we remember that in a large number of the cases the pyrexia falls to about 100° or under on the second or third day, accompanied by a remission of the severe headache and pains in the back and limbs, so that the patient thinks he is rapidly getting over his trouble. It is only when he is rudely awakened from this happy frame of mind by the second rise of temperature that he comes into hospital for treatment, where his fever rapidly ceases while taking the inevitable quinine, so that both he and his medical attendant usually have no suspicion that he has suffered from anything but an attack of malaria.

In another patient admitted on the third day the temperature fell to almost normal on the following day, after which a well-marked terminal rise took place, during which the temperature remained persistently at about 104° for over 24 hours in spite of frequent spongings, which had only a very ephemeral effect on the pyrexia. The pulse was also never recorded as rising over 92 during this high temperature, while a very slight and short recrudescence of fever occurred just after the cessation of the secondary curve, as is rarely the case. Chart 5 is that of a man admitted on the fourth day with a low continued type of fever succeeded by the characteristic terminal rise with a slow pulse. In another unusually short case admitted at about the beginning of the terminal rise, the fever only lasting two days under quinine, but with the slow pulse of seven-day fever and not the rapid one of malaria. In this case, as in every one on which this paper is based, a blood film taken before any quinine had been administered in hospital was examined for malarial parasites with a negative result.

CHART 5.



Case admitted on the fourth day showing terminal rise.

These last mentioned three cases will serve to illustrate the very frequent admissions during the terminal rise of pyrexia, many of them only coming to hospital on the fifth or sixth day of the disease but a few hours before the final fall. In such only the history of the patient, the absence of malarial parasites, and, above all, the slow pulse during high fever, aided by their occurring in the regular season for this disease, will allow of a correct diagnosis being arrived at and the common error of returning them as malaria avoided.

### THE DURATION OF THE FEVER.

On account of the patients coming to hospital in any stage of the disease the actual duration of the fever after admission varies widely from one to eight, or rarely over eight, days. The total duration of the fever in just about three-quarters of them was either six or seven days, so that the temperature either fell to normal on, or finally remained normal during, the seventh day in this proportion, and hence the name of "seven-day fever" which I have proposed for the disease. A slightly larger number of cases end on the sixth than on the seventh day, but it appeared to me to be better to take the later day for the name of the affection so as not to lead to its termination being expected at an earlier date than actually occurs in almost half the total cases. The following table shows the number of cases which terminated on different days of the fever, the cases denoted "typical" being those admitted sufficiently early to show the characteristic saddle-back or complete terminal rises of temperature, while the "terminal" cases are those admitted near the end of the disease, and so especially liable to be returned as malaria.

It will be seen from this table that in no case did the fever last less than three days, while in only four, or 2 per cent., did it end on the third day, all these being terminal cases in which the history of the duration of the fever before admission may have been inaccurately given. Further, in only eight cases, or 4 per cent., it ended on the fourth day, so that in the remaining 94 per cent. the fever lasted five or more days and in 86 per cent. it lasted six or more days—a

*Table of the Duration of the Fever.*

| — | 0-3 days. | 3 days. | 4 days. | 5 days. | 6 days. | 6 or 7 days. | 7 days. | 8 days. | +8 days. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|
| Typical cases ... ... | 0 | 0 | 3 | 5 | 39 | (76) | 37 | 8 | 8 | 100 |
| Terminal cases ... ... | 0 | 4 | 5 | 10 | 40 | (69) | 29 | 10 | 8 | 106 |
| Total cases ... ... | 0 | 4 | 8 | 15 | 79 | (145) | 66 | 18 | 16 | 206 |

point of the utmost importance in separating out this disease from true epidemic dengue with three or less days' fever according to the great majority of experienced writers on that disease. As I was examining the blood of every fever case in the hospital it is impossible that I could have overlooked an appreciable number of short cases of this fever, for exceedingly few such cases without malarial parasites in their blood occurred during the months the seven-day fever was prevalent.

*Convalescence*.—Once the temperature is normal and the patient up and on full diet convalescence is very rapid after seven-day fever, as was pointed out by Captain J. G. Murray, I.M.S., at the recent debate in Calcutta already mentioned, this officer having had a very large experience of the disease in his wards at the European Hospital. He also stated that he had never seen a case of three or less days' duration, nor the very severe pains and joint complications of true dengue, while the pains did not return during the terminal rise of seven-day fever as in dengue. He regarded the slow pulse of seven-day fever as a characteristic point of difference from the latter disease. Another important feature of the convalescence of seven-day fever is the absence of the chronic joint pains which are often so prolonged and distressing after true dengue, producing the crippling of the patient from which the name of the affection is said to be derived, but which I have never seen in the Calcutta sporadic seven-day fever.

*Relapses.*—I have not yet met with a case of seven-day fever which has relapsed during the same year as the primary attack, although the same person not very rarely suffers from the disease again in a subsequent year if he remains in Calcutta, usually in a milder form with a more marked and prolonged remission of the fever, as was well illustrated by the charts of two attacks experienced and recorded by my friend Captain J. W. D. Megaw, I.M.S.,[3] in a paper in which he ably advocates the view that the seven-day fever is but a sporadic form of dengue. In the latter disease, however, even repeated relapses during a single season are very common in Indian outbreaks.

*The blood changes.*—The blood was examined by me in every case for malarial parasites with invariably negative results, while the protozoan parasite described by Graham of Beyrouth[4] in dengue was never seen. A differential leucocyte count was also done in over 70 cases during the first year's prevalence of the fever but with disappointing results. Without going into full details here it may be said that the total leucocytes were commonly reduced in numbers, and often markedly so, but 3000 to 4000 only being not infrequently met with, while leucocytosis was never seen. The differential leucocyte count furnished very variable results, a large mononuclear increase, quite as marked as in malaria, being by no means rare, while a lymphocyte increase with a normal proportion of large mononuclears, as in typhoid fever, was also met with, so that this test is of no value in differentiating seven-day fever from those diseases with which it is most frequently confounded.

### THE CULTIVATION OF A BACILLUS FROM THE BLOOD OF SEVEN-DAY FEVER CASES.

Being struck with the resemblance between the more continued types of the seven-day fever with its slow pulse to typhoid and para-typhoid fevers I made numerous attempts to cultivate a bacillus from the vein blood, some difficulties being encountered owing to the European hospital being three miles from my laboratory, so that there was often a delay of an hour or more before the blood could be diluted with a sufficient quantity of broth. Nevertheless, an organism was obtained in pure culture in six cases during the two seasons' work, which appears to present constant features differing from those of the bacilli of typhoid and paratyphoid infections. The following are its principal characteristics. In shape and size it resembles those of the coli group and, like them, is actively motile, flagella in comparatively small numbers having been demonstrated in some of them by my assistant, Dr. G. C. Chatterjee, to whom I am indebted for much help in testing the cultural characters of the organism. It is decolourised by Gram's method of staining, grows in broth with the production of a diffuse haziness, forms a thin film on gelatin at 70° F. without liquefying the medium, and an appearance resembling that produced by the coli group on the surface of an agar tube. In a stab culture of glucose agar it does not grow very readily except in the upper part of the streak and on the surface and does not produce any gas formation. On potato it forms an invisible growth like the typhoid bacillus. In litmus milk no clotting is produced and only slight acidity results after a few days. In dextrose, lævulose, glucose, and maltose broths there is neither acid nor gas formation, but with mannite slight acid formation takes place after several days. The organism thus appears to be related to the great coli group but differs from the organisms of typhoid and paratyphoid fevers. In addition to the cases in which it was isolated from the blood a number of other cases yielded negative results so that repeated examinations are necessary in order to obtain it, but this is, perhaps, not surprising in such a mild and short fever as the seven-day one is. Clumping was obtained with the organisms when mixed with the blood of patients suffering from seven-day fever up to dilutions of 1 in 20 and 1 in 40, although not sufficiently constantly to furnish a reliable diagnostic measure, the fever apparently being too short in duration to yield much agglutinins. The presence of this organism repeatedly in the blood of seven-day fever patients points to its being probably the cause of the disease, but my observations require confirmation before this relationship can be positively asserted, while it is also desirable that similar methods should be employed in true dengue, which somewhat resembles seven-day fever.

*Treatment.*—Quinine is useless and tends to aggravate the headache, while I know of no drug which influences the course of the fever, although salicylate of sodium is useful in modifying the pains and belladonna is worth trying if they are unusually severe.

*Mortality.*—No fatal case has been met with.

*Race and sex incidence.*—The most striking fact in the incidence of the disease is that for the first month or two of its prevalence each year practically every patient is a sailor or someone connected with shipping on the river Hooghley. Later in the season patients are admitted from other sections of the community all over Calcutta, but it especially affects newcomers rather than those who have lived for some years in the town. For this reason comparatively few cases were seen in females, and extremely few in children, almost all the women and children admitted to this hospital belonging to the classes who are born and bred in India. Among the native classes admitted to the Medical College hospital cases are also occasionally seen, but this fever is many times rarer in the indigenous population than among Europeans, especially if the proportions of the two living in Calcutta are taken into consideration—another point in which it is at total variance with epidemic dengue.

### THE SEASONAL INCIDENCE OF SEVEN-DAY FEVER COMPARED WITH THAT OF MALARIA.

The monthly incidence of seven-day fever and malaria respectively during the two years that I microscoped the blood of every case is shown in Diagram I. In 1904 the seven-day fever was prevalent from June to August, disappearing again in September, which is the month during which malarial cases rapidly increased from a prevous low level. The former remained practically absent from September, 1904, to the following April. In 1905 the seven-day fever was unusually prevalent, beginning to increase as early as May and being very numerous throughout from June to September, but rapidly declining during October and November and disappearing once more from December to the following April. Owing to a late rainy season the usual autumnal increase of the malaria did not appear until November and December, when the seven-day cases had markedly decreased. In 1906 the new fever cases were less numerous than in 1905, but they began to increase in May, reaching the highest point in July and declining again to very few in September, the fall as usual taking place just before the main rise in the malarial curve. If, however, a curve of the incidence of both fevers together is worked out (as shown in a paper on Malaria in Calcutta in the *Indian Medical Gazette* of March, 1906), then a single curve is obtained with two maxima, the first due to the seven-day and the second to malarial fevers. It is not, therefore, surprising that both these fevers have been so long confused together and regarded as malarial in nature. The late Lieutenant-Colonel A. Crombie, I.M.S., may have been thinking of the seven-day fever now described when he stated that in his belief 75 per cent. of the fevers in Calcutta returned as malaria did not belong to that category.

---

[3] Ibid., 1906.

[4] Journal of the American Medical Association, 1902, p. 183.

*Distribution in India.*—An examination of the records of all the fever cases for two or three years in the large hospitals of Bombay, Madras, and Lahore showed this seven-day fever to occur at the two first places only, but I have not found any cases in Lahore or in the United Provinces. It is thus a common fever with a definite seasonal distribution in the large seaports of India, among which Rangoon should also be included, for Captain F. N. Windsor, I.M.S., has reported to me that it is commonly seen there at about the same season that Calcutta is attacked. It is too early to say that it does not occur inland, but it seems pretty certain that it is at least comparatively rarely seen far from the coast line.

### THE DIFFERENTIAL DIAGNOSIS OF SEVEN-DAY FEVER.

*From malaria.*—Briefly the diagnosis of seven-day fever from malaria, with which it has been so long confused, can usually be made clinically by attention to the points described in my paper on the latter disease. The chief of these are the totally different temperature curve in the cases admitted early, the more severe frontal headache, the red edge to the tongue, the rash when present, and pains all over, the absence of enlargement of the spleen and of malarial parasites in the blood, and especially in the terminal cases, by the slow pulse-rate accompanying high fever.

*From influenza.*—In Calcutta I find that influenza cases occur mostly from January to March and disappear in the hot weather before the seven-day fever season commences and do not appear again until late in the autumn when the other disease is practically at an end. Further, the temperature curve is usually an irregular intermittent one and never shows the typical saddle-back type of the seven-day fever, while the latter is scarcely ever complicated with the inflammatory signs in the lungs and throat which were nearly constant in the Calcutta influenza of 1892.

*From dengue.*—A much more difficult question is its separation from dengue, for the seven-day fever resembles the latter in its sudden onset, the severe headache and pains, the characters of the tongue, the rash, when present, and, to some extent, in its seasonal incidence and its distribution; so much so that I find from an extensive examination of the literature of fevers in India that the typical seven-day fever has been described as dengue by Dr. Edward Goodeve, I.M.S., in Calcutta in 1853 [5] and by Staff Surgeon P. W. Bassett Smith [6] in Bombay in 1897, in addition to a recent outbreak at the Mount in Madras. On the other hand, the fever now being described differs most markedly from the classical accounts of dengue epidemics, as well as from the two great Indian outbreaks of 1824 [7] and 1872,[8] so much so, indeed, as to make me think that it is quite distinct from dengue. The main points of difference are shown in the accompanying table:—

*Table of the Differences between Dengue and Seven-day Fever.*

| *Dengue.* | *Seven-day Fever.* |
|---|---|
| *Prevalence:* At long intervals in epidemic form attacking large proportion of residents. | Annually in sporadic form. |
| *Distribution:* Specially attacks coast towns but spreads far inland. | Only known near the coast so far. |
| *Race incidence:* Europeans and natives equally attacked. | Very common in Europeans, comparatively rare in natives. |
| *Seasonal incidence:* Mostly in hot months but may prevail in cold season (1872). | Prevails in hot and rainy seasons only. |
| *Relapses:* Very common in same year as first attack. | Rare and not in same year as first attack. |
| *Pains:* Very severe and breakbone in character. | Moderately severe as in influenza and not of breakbone character. |
| *Joint symptoms:* Very common and characteristic. | Absent or only present as slight pain. |
| *Convalescence:* Very tedious, lasting from one to three months, with persistent joint pains. | Rapid; no after joint pains. |
| *Fever:* Lasts two or three days, falling to normal with crisis; occasional very short secondary rise: markedly remittent. | Five to eight or more days with typical saddle-back remission to 100° or 99° F. only; otherwise continued in type. |
| *Pulse:* Rapid. | Slow, especially in terminal rise. |

In a recent discussion on this subject at the medical section of the Asiatic Society in Calcutta my friend Captain Megaw suggested that the seven-day fever is but a sporadic form of dengue, but Lieutenant-Colonel G. F. A. Harris, I.M.S., Major D. M. Moir, I.M.S., and Mr. A. Caddy, who had each seen both dengue and seven-day fever, were all positive that the two diseases are quite distinct. Further, Major W. G. Pridmore [9] and Captain J. W. Cornwall, I.M.S., and Captain J. Catto, I.M.S., who had all recently seen epidemic dengue in Burma, Madras, and Singapore respectively, are also of the same opinion, which I share. As, however, I have never seen epidemic dengue I hesitate to pronounce a decided opinion on the subject.

One thing at least appears to be quite certain—namely, that the seven-day fever has existed as one of the commonest fevers of Europeans in Calcutta year by year for a long period. Yet it has passed quite unrecognised by many medical men with experience of true dengue, so if it be but a sporadic form of that disease the descriptions of dengue require to be completely rewritten. It appears to me to be more likely that it is a new fever, not previously differentiated, than that every writer on dengue has overlooked the most characteristic temperature curve of the disease which I have illustrated in the charts.

---

# EXPERIMENTS ON PROLONGED PROTEIN FEEDING,

## WITH SPECIAL REFERENCE TO THE THYROID GLAND AND THE OSSEOUS SYSTEM.[1]

By DAVID FORSYTH, M.D. LOND., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN AND JOINT PATHOLOGIST TO CHARING CROSS HOSPITAL; SENIOR PHYSICIAN TO OUT-PATIENTS AT THE EVELINA HOSPITAL FOR SICK CHILDREN.

A CONNEXION between meat eating and the production of gout has long been maintained and attempts to induce the disease in animals and birds by prolonged protein feeding have been made from time to time. The most recent experiments in this direction were undertaken by Chalmers Watson who fed eight fowls on meat alone for periods ranging from four to 16 months. His results were recorded in a paper read before the Royal Medical and Chirurgical Society in 1904.[2] No condition suggestive of gout was found in any of the birds, but, on the other hand, alterations in the long bones and hypertrophy of the thyroid glands were described and attributed to the excessive meat diet. These changes were so remarkable that it was thought desirable to repeat the experiments. This has been done during the past two to three years and the object of the present paper is to record the results obtained.

### EXPERIMENTS.

The experiments began in October, 1904. Two cocks, two hens, and a cockerel were obtained, but shortly afterwards one of the hens was accidentally killed, and during the remaining period four birds were under observation. Except in the matter of food every care was taken to place them in healthy surroundings. They were kept in a commodious run, part of which was indoors under cover protected from rain and wind and part out of doors facing south-west and enjoying ample sunshine. The cage was kept clean and constant supplies of gravel, dust baths, and fresh water were provided. The protein diet was not commenced at once but a gradually increasing quantity of raw meat was added to a gradually decreasing quantity of grain. For the first week the food was wholly grain, for the next two weeks three parts grain to one of meat, from the third to the fifth weeks equal parts of grain and meat, in the sixth week one part of grain to three of meat, while from the latter date (Dec. 8th, 1904) until the termination of the experiments no food except meat was allowed. By this gradual change to an abnormal diet it was hoped to avoid any initial digestive troubles, the animals being afforded an opportunity to accommodate themselves to their new food. In the earlier part of the experiments the meat given was the ordinary butcher's trimmings but later this was discarded on account of its cost and half-raw horseflesh substituted.

---

[5] Indian Annals of Medical Science, vol. i., p. 248, 1855.

[6] Indian Medical Gazette, 1897, p. 230.

[7] Transactions of the Medical and Physical Society of Calcutta, vol. i., 1825, pp. 310 and 371; vol. ii., 1826, p. 1.

[8] Indian Annals of Medical Science, No. 29, 1872, p. 137; Transactions of the Medical and Physical Society of Calcutta, vol. ii.; Indian Medical Gazette, 1872, p. 25.

[9] Brit. Med. Jour., 1902, vol. ii., p. 1528.

[1] A paper read before the Royal Medical and Chirurgical Society on June 11th, 1907.

[2] Chalmers Watson: Transactions of the Royal Medical and Chirurgical Society, 1904, vol. lxxxvii.

Until the beginning of February, 1905, no alteration was observed in the birds but at this date they became listless and moping, standing about their runs without evincing any interest in their surroundings. They ceased to scratch over the gravel and two of the cocks penned with the hen lost all pugnacity towards each other and their sexual activity failed. Whereas their crowing had been frequent they now for over a month remained silent. All four birds developed diarrhœa, which soon became extreme, the droppings being watery and passed at intervals of a few minutes. Their appetites suffered no diminution and each readily ate one and a half pounds of meat a day, but as this appeared not to satisfy their hunger the amount was increased to two pounds for each bird. Simultaneously with the diarrhœa there developed an excessive thirst, the large drinking fountains having to be replenished twice or thrice a day, and the birds repeatedly buried their widely-opened beaks beneath the surface of the water, drinking greedily. No nervous symptom or joint-trouble of any sort was noticed. The acuteness of the attack lasted some two or three weeks but the droppings remained liquid till the end of the summer. By the middle of March the animals were bright and active again and their weights which had not increased during their illness began to rise. From now until their deaths they remained in the best of health except for the usual malaise associated with moulting. In November, 1905, three of them (the fourth having been recently killed) were shown at the Physiological Society and nothing in any way wrong was detected in their appearance. The hen during the two summers she was under observation laid occasional eggs. They were of normal size, the yelks were pale and the flavour excellent.

FIG. 1.

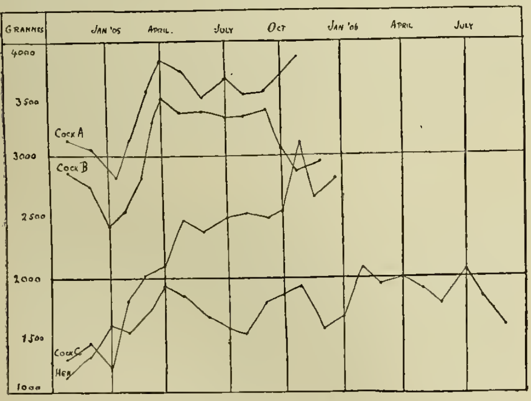


Table of weights of fowls.

A record was kept of the weights and is shown in Fig. 1. Cock A and Cock B lost weight during the first two months but thereafter rapidly increased, their progress being checked only by the acute attack described above. Cock C (a cockerel), which was at a period of rapid growth, remained constant in weight for two months and then increased until at the end of 12 months it had more than doubled its size.

### POST-MORTEM EXAMINATIONS.

Each bird was killed by coal-gas and a complete post-mortem examination at once made. In each case microscopic sections were prepared of the following organs: thyroid, parathyroid, suprarenal, pituitary, spleen, liver, small intestine, kidney, pancreas, bone marrow, lymphatic gland, and testis or ovary. Specimens of these organs were fixed in 10 per cent. formalin in normal saline, prepared by the paraffin process and stained with hæmatoxylin and eosin.

*Cock A* (an old bird nearing the end of a period of moulting) was killed on Oct. 20th, 1905, after being on the protein diet for more than ten months. The body was very well nourished with a copious deposit of fat, especially at the root of the neck and in the abdomen. In the subcutaneous tissue covering the sternum were found numerous deposits of a chalky character, varying in size from that of a millet-seed to that of a small bean. Others occurred beneath the skin of the right thigh and one large deposit lay at the back of the neck. Their chemical examination was kindly undertaken by Dr. Foster Morley, who found them to consist of calcium phosphate with just a trace of oxalate, but no uric acid. The thyroid glands found at their normal site at the root of the neck on or near the origin of the carotid vessels were pear-shaped and somewhat translucent bodies of a pale red. The right weighed 0·20 gramme, the left 0·28 gramme. Posterior to the right and quite separate from it was a small parathyroid weighing 0·026 gramme, while in a corresponding place on the left side were two parathyroids, one anterior to the other, and together weighing 0·036 gramme. The spleen was firm and of the size of a small horse-chestnut. The bone-marrow was soft and very dark red, almost brown, in colour. The joints of the extremities were examined but no gouty deposit was present and the articular cartilages were smooth, glistening, and well lubricated by synovia. The long bones were normal in every respect (shape, density, thickness, and regularity of shaft). No gross pathological change was noted in any portion of the body.

*Cock B*, killed Dec. 15th, 1905, after being on the protein diet for over a year. The body was well nourished with a fairly ample deposit of fat. One or two calcareous nodules were found subcutaneously. The thyroid glands, in the usual position, were pale pinkish-white in colour and not translucent. The right weighed 0·22 gramme and the left 0·21 gramme. Close to the posterior pole of each lay a parathyroid, that on the right weighing 0·031 gramme and that on the left 0·050 gramme. The bone-marrow was dark in colour. The joints were healthy and the long bones were normal. No gross pathological change was found in any viscus.

*Cock C*, killed on Jan. 9th, 1906, after 13 months of meat feeding. The body was well nourished with ample deposits of fat, especially at the root of the neck. No subcutaneous calcareous bodies were present. The thyroids were pinkish-red and translucent and the weights of the right and left were 0·21 gramme and 0·18 gramme respectively. Just posterior to the left thyroid were two parathyroids weighing 0·039 gramme, while in contact with the posterior pole of the right was a bilobed parathyroid weighing 0·055 gramme. The bone-marrow was dark red—very much like blood clot. The pancreas for nearly half its length presented a curious mottled-green appearance. All the other structures, including the joints and long bones, were normal.

*Hen*, killed Sept. 2nd, 1906, after being on a protein diet for one year and ten months. The feathers were straggling owing to moulting. The body was very well nourished with a rich deposit of fat everywhere. A few calcareous concretions were found under the skin. The thyroid glands in the usual position appeared to be normal; they presented the customary shape, were reddish-brown, and weighed 0·08 gramme and 0·11 gramme on the right and left side respectively. Posterior to the right but not in contact with it was a small parathyroid weighing 0·018 gramme, while posterior to the left were two parathyroids, the anterior being minute and both together weighing 0·021 gramme. The bone-marrow was dark red. The joints were healthy and no change was observed in the long bones. The pituitary was pale brown. No gross pathological change was noted in any viscus.

### MICROSCOPICAL EXAMINATION.

*Thyroid and parathyroid glands.*—The thyroids of all four birds were similar in appearance on microscopical section. The glands were divided into small compartments by delicate connective-tissue trabeculæ inclosing thyroid vesicles. These presented the usual variations in size and were lined by a single layer of flattened epithelial cells arranged round masses of colloid secretion. Intervesicular glandular tissue was almost entirely absent, as is often the case in the thyroids of birds. Occasionally the cells approached the outline of a squat cubical epithelium and some vesicles were lined partly by the flattened variety, partly by the squat cubical. There was no folding of the lining epithelium nor had any proliferation of the secreting cells occurred (Fig. 2). The parathyroids consisted of the usual clumps of polyhedral, embryonic-looking cells, the protoplasm of some being clear and of others oxyphile and granular. No detail that was not normal to the avine thyroid and parathyroid was present.

*Pituitary gland.*—All four pituitary glands showed the usual cellular structure but there was a remarkable increase in the quantity of colloid present in the bodies. Drops of this secretion were scattered to excess through every section.

No change was observed in any of the other viscera.

### REMARKS.

All the birds thrived on the diet, increasing considerably in weight and laying down plentiful fat. It is difficult to say to what extent, if at all, the special feeding was responsible for the attack of diarrhœa. The illness did not appear until some weeks after the dietetic treatment had commenced, and although no modification was made in the character of the food the symptoms passed off and never returned. Poultry are known to be subject to epidemic attacks of diarrhœa[3]; on the other hand, it was noted as long ago as 1660[4] that "the flux in poultry commeth with eating too much moist meat." My impression was that the diarrhœa in these experiments was not directly attributable to the character of the food.

With a view to comparison with the above results Chalmers Watson's experiments may be briefly summarised. Eight fowls were dieted for from four to 16 months. Two died from "acute nervous derangements" at the fourth and seventh months respectively, and two at the end of six months were returned to the poultry yard in apparently perfect health. Of the four remaining, one (No. 4), which at the post-mortem examination was found to be tuberculous, gained in weight, the others (Nos. 3, 5, and 6) lost weight. The tuberculous fowl suffered an attack of paralysis shortly before death. Another fowl presented attacks of "paralysis" from which it recovered without any change in the *régime*. The two remaining birds—both cocks—showed motor symptoms, one being paretic, the other paralysed. In all there was a striking absence of the clinical features of gout. The post-mortem findings were as follows. The two fowls that succumbed at the fourth and seventh month respectively revealed no gross lesions. Their thyroid and parathyroid glands were not examined microscopically. Fowl No. 4 presented tuberculous ulceration of the ileum and a liver studded with caseous tuberculous nodules. Its thyroids were normal. Of the fowls Nos. 3, 5, and 6 the only changes common to all were found in the thyroid and parathyroid glands which were recorded as enlarged in Nos. 3 and 6 and enormously enlarged in No. 5. Histological examination showed (*a*) increase in size of vesicles which were filled with colloid, (*b*) diminution in intervesicular glandular tissue, and (*c*) increase in the number of cells in the walls of the vesicles. Sections of the parathyroids were normal. Changes in the long bones were observed in Nos. 3 and 6. The bones were increased in thickness and irregular on the surface and the femora were markedly curved. The marrow had almost entirely disappeared, being replaced by a fairly dense, non-cellular tissue presenting some of the characters of an osseoid tissue. A similar appearance was seen in the outer part of the bone and apparently represented much altered Haversian spaces. Chemical examination showed a great increase in the proportion of organic matter.

Comparing the results now being recorded with those above quoted, they will be found to agree only in the absence of any changes suggestive of gout. The following points may be specially emphasised: (1) There were no nervous or motor symptoms at any time; (2) the health of all four birds was excellent at the time they were killed; (3) the thyroid and parathyroid glands were not enlarged (*vide infra*) and their sections presented the normal features of the avine glands; (4) the shafts of the long bones were not increased in thickness nor were they irregular or curved; and (5) on the other hand there was a striking increase of colloid in the pituitary glands—organs not examined by Chalmers Watson. These results show that fowls fed for a long period on an exclusive protein diet and at the same time kept under healthy conditions, including a supply of lime and other bases, present no loss of weight, no changes in the thyroid or parathyroid glands, and no changes in the osseous system. The two most important points raised by the above observer are the changes in the osseous system and the hypertrophy of the thyroid glands.

1. *The changes in the osseous system.*—These have already been detailed but there is ample ground for declining to accept them as the result of excessive meat diet. The context provided shows that the changes should be ascribed to an insufficient supply of calcium and other bases. The necessity of supplying fowls with ample lime is recognised by all poultry keepers, and a deficiency of this material produces a condition known to them as "leg-weakness." Wright in his "Book of Poultry,"[5] which I am informed is a standard work on the subject, says that leg-weakness "may arise from ...... a deficiency of bone-matter; and the symptoms ...... consist of a more or less constant squatting on the ground instead of standing or walking." Chalmers Watson says of his birds that they "showed a great tendency to sit, and would rest on the ground for much longer periods than was natural." The possibility suggested by Wright's statement that Chalmers Watson's birds were really suffering from "leg-weakness" is supported by this latter's remark that "the fowls showed a marked tendency to pick the lime off the walls and continued doing so for some time" and that chemical analysis of the bones "showed a great increase in the proportion of organic matter." The date at which the symptom of "leg-weakness" became marked is not specifically given but can be calculated from the context where it is stated that a tendency to lameness which had affected one of the birds was not manifest "after the fifth month" and that "a little later" the increased tendency to squat on the ground appeared. This fixes the onset of the symptoms at or about the sixth month. During the first six months the birds with the exception of one cock (No. 6), were kept in the country in a hen-run the floor of which was composed of natural soil, but at the end of six months they were transferred to iron cages in the physiological laboratory of the University of Edinburgh. The symptoms of "leg-weakness" did not therefore show themselves so long as the birds were kept in surroundings where a natural supply of grit was to be obtained. It may be further mentioned that in a later paper read before the Pathological Society in December, 1906, Chalmers Watson described effects on the bones of rats of prolonged protein feeding but in the subsequent discussion it was pointed out by Spriggs[6] that an exclusively protein diet implied a deficiency of calcium salts and of bases generally and that the osseous changes recorded were such as would result from a deficiency of these substances. Chossat[7] in 1842 showed that pigeons fed on grain freed from any accompanying grit were unduly liable to fractures and that post mortem the bones were soft. These changes did not occur if lime was added to the grain. The conclusion seems warranted that the changes in the bones described by Chalmers Watson should have been attributed not to the excess of meat but to a deficiency of lime and other bases.

### DESCRIPTIONS OF ILLUSTRATIONS ON PAGE 155.

*Fig. 2.*—Thyroid of fowl after prolonged protein feeding, showing the normal structure of the avine thyroid.

*Fig. 3.*—Thyroid of Elenora falcon (Falco elenoræ)—a carnivorous bird—showing entire absence of vesicles and only a slight amount of colloid which is restricted to lymphatic spaces in the connective-tissue trabeculæ.

*Fig. 4.*—Thyroid of herring-gull (Larus argentatus)—a fish-eating bird—showing vesicles for the most part small and a sparse secretion of colloid. Intervesicular glandular tissue is present to considerable amount.

*Fig. 5.*—Thyroid of ostrich (Struthio camelus)—a graminivorous bird—showing vesicles for the most part large, a free secretion of colloid, and no intervesicular glandular tissue.

*Fig. 6.*—Thyroid of crowned crane (Balearica pavonina)—a graminivorous bird. Vesicles on the whole large, plentiful colloid, and little or no intervesicular glandular tissue.

*Fig. 7.*—Thyroid of tataupa tinamou (Crypturus tataupa)—a graminivorous bird. No vesicles are present; the only colloid is that in a lymphatic beneath the capsule. The resemblance of this thyroid and that of the falcon to a parathyroid gland is marked. All the figures represent the same degree of magnification.

---

[3] Klein: Grouse Disease, 1892.

[4] G. Markham: Cheape and Good Husbandry for the well-Ordering of all Beast and Fowles and for the general Cure of their Diseases. Tenth edition. 1660.

[5] Wright: Book of Poultry. Cassell and Co.

[6] Spriggs: THE LANCET, Dec. 29th, 1906, p. 1779.

[7] Chossat: Comptes Rendus de l'Académie des Sciences, 1842, vol. xiv., p. 451.

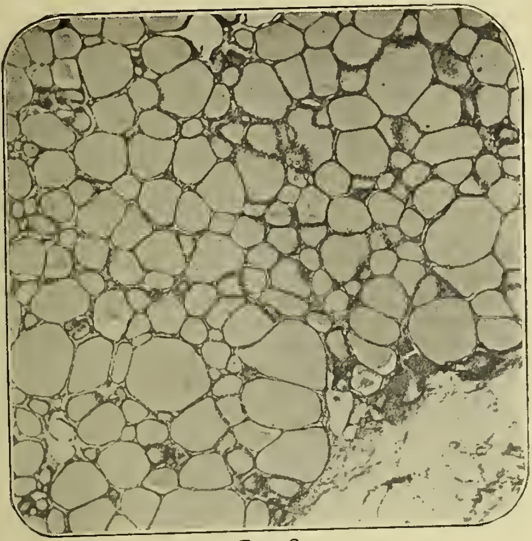


FIG. 2.

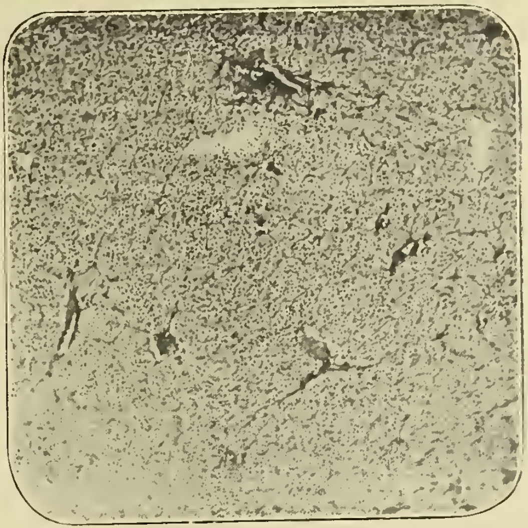


FIG. 3.

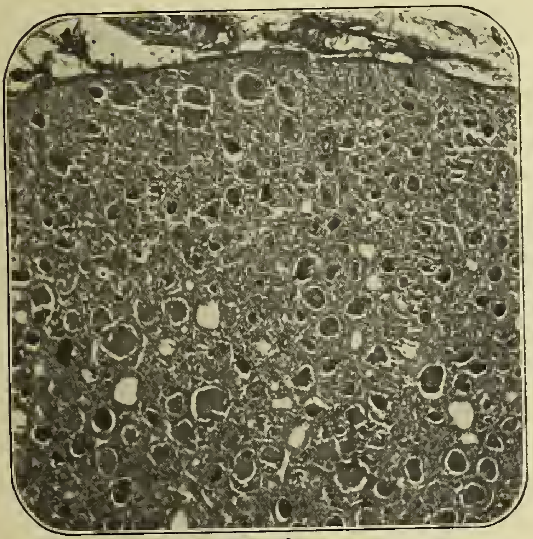


FIG. 4.

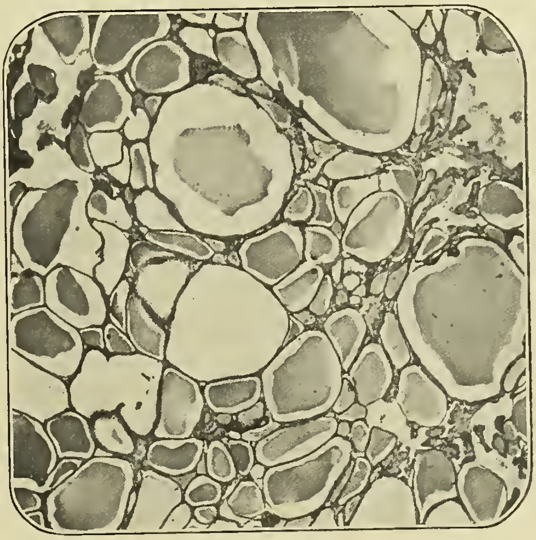


FIG. 5.

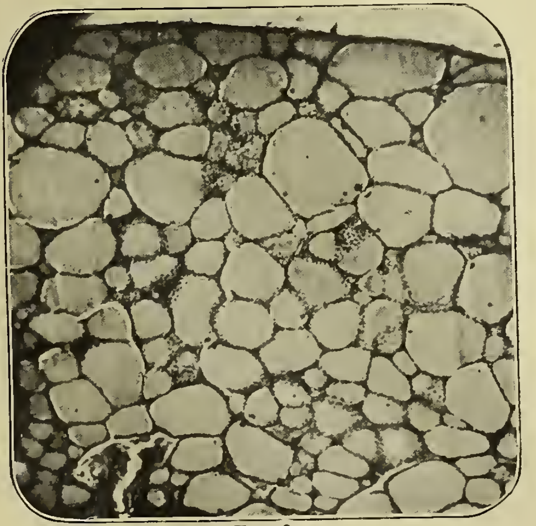


FIG. 6

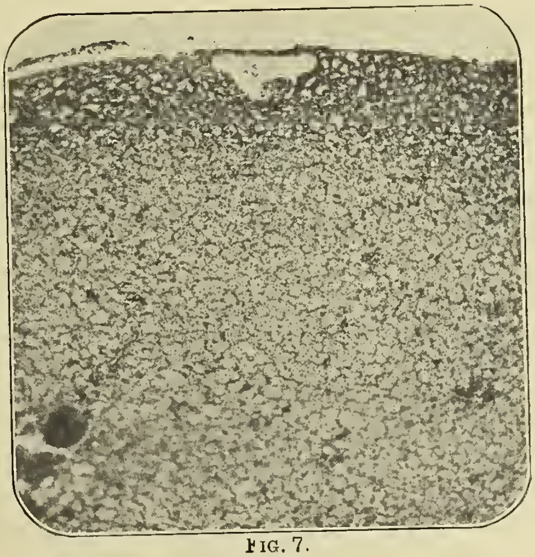


FIG. 7.

2. *Hypertrophy of the thyroid glands.*—The weights of these bodies, as given by Chalmers Watson, are as follows: No. 1, no weights recorded. No. 2, no weights recorded. No. 3, weight of one thyroid, 1·25 grammes; weight of second not recorded; body weight, 1680 grammes. No. 4, weights of thyroids not recorded (stated to have been normal); body weight, 2625 grammes. No. 5, weights of thyroids, 9·5 grammes and 3·0 grammes respectively; body weight, 2540 grammes. No. 6, weight of one gland, 1·15 grammes; weight of the other gland not recorded; body weight 1640 grammes. The average weight of a thyroid gland is given as 0·14 gramme.

It will be seen that of the six fowls that were examined post mortem three showed no change in the thyroids, one showed great hypertrophy of both lobes, and in the remaining two one lobe was enlarged but no record was made of the condition of the other. This omission to record both weights in three cases and one weight in each of two cases is to be regretted, as it detracts from the value of the conclusions obtained. (*a*) Fowls vary in weight between very wide limits and an amount of thyroid tissue normal to a large bird would represent hypertrophy in a small. Nos. 4 and 6 differing so much in weight would be expected to possess thyroids differing correspondingly in weight. In my own series one bird was more than twice the weight of another, and it would obviously be fallacious to judge of the degree of hypertrophy by comparison of the absolute weights of the organs. The only trustworthy standard for comparison is the amount of thyroid gland per kilogramme body weight, and in only one of the above examples can this figure be ascertained. (*b*) The thyroid glands in birds, as in mammals, may be of unequal size,[8] and a record of the weight of one lobe alone has no value as an index to the total amount of thyroid tissue. For example, in No. 5 one gland was more than three times the weight of the other. As regards parathyroid glands my experience has been[9] that they possess no constancy of size but vary between wide limits. An examination of the thyroid glands of two full-grown healthy fowls gave the following figures:—

| No. | Body weight in grammes. | Weight of thyroids. | Total weight of thyroid. | Thyroid per kilogramme body weight. | |
|---|---|---|---|---|---|
| 1 | 1871 | 0·14 0·15 | 0·29 | 0·155 | average 0·164 |
| 2 | 1899 | 0·15 0·18 | 0·33 | 0·174 | |

The following table gives the weights obtained from the four birds of my own series:—

| — | Body weight in grammes. | Weight of thyroids. | Total weight of thyroid. | Thyroid per kilogramme body weight. | |
|---|---|---|---|---|---|
| Cock A. | 3890 | 0·20 0·28 | 0·48 | 0·123 | average 0·131. |
| Cock B. | 2980 | 0·22 0·21 | 0·43 | 0·144 | |
| Cock C. | 2805 | 0·21 0·18 | 0·39 | 0·138 | |
| Hen. | 1617 | 0·08 0·11 | 0·19 | 0·118 | |

If the weights of the thyroids were considered apart from the body weight, three out of four birds would appear to have hypertrophied thyroids. The fallacy of the conclusion appears when the percentage weights are obtained. These figures show that in none of the series did the thyroid hypertrophy.

Two additional points of great importance must be borne in mind when appraising the value of Chalmers Watson's results. In the first place, enlargement of the thyroid gland is known to occur in many animals, including birds, quite apart from any question of diet. Sloan[10] has described goitre in crows and Fischer in 1896[11] stated that domestic fowls are subject to the same condition. The possibility that fowls Nos. 3, 5, and 6 were the subject of pathological goitres has not been excluded and the ascription of the hypertrophy to excessive protein eating appears premature. This is the more probable seeing that, apart from my own experiments, many other investigations on the effect of protein feeding have been conducted but, as Chalmers Watson states,[12] in none has any change in the thyroid glands been recorded.

The second point to which due attention must be given is that each of the three fowls in which the thyroid was affected presented evidence of disease elsewhere. The heart of one was hypertrophied, its duodenum was dilated, and before death its blood presented a very striking deficiency of white blood corpuscles; in the second there were very pronounced atrophic changes in the intestinal tract and the duodenum was dilated; while the third showed profound atrophic changes in the intestinal canal, a great increase of pigment in the liver, and before death a very pronounced leucopenia. If, further, it be accepted that these birds had so suffered from a want of lime and other bases as to develop in each instances "leg-weakness," and in two out of the three instances definite changes in the bones, it is obvious that it is well-nigh impossible to trace the influence of an excess of protein among so many morbid conditions, and any conclusions in this direction must be received with the greatest caution.

## On the Thyroid Gland in Birds of Prey.

In connexion with the foregoing the comparative histology of the thyroid glands in birds is of great interest. There is a large class of birds—the raptores or birds of prey—feeding exclusively on meat and the condition of their thyroids should provide evidence bearing on the relation between the glands and meat eating. I cannot find any published records of the structure of the thyroids of these birds but I have recently, by the courtesy of Mr. F. E. Beddard, the prosector to the Zoological Society of London, had opportunities of examining post mortem representative types of the eagles, vultures, owls, falcons, and kites, as well as many non-raptorial birds. Altogether more than 30 different species were examined but no obvious difference in relative sizes between the thyroids of carnivorous, omnivorous, and graminivorous birds was noticed. Accepting for the moment the conclusions of Chalmers Watson, it would be expected that the thyroid glands of birds of prey would show to a marked degree the features he has ascribed to excessive protein feeding. It should be found (1) that the thyroids of these birds consist of large vesicles filled with colloid and that the intervesicular glandular tissue is diminished; and (2) that the thyroids of non-raptorial birds when contrasted with these show vesicles of comparatively small size, a not over-abundant secretion of colloid, and an average amount of intervesicular glandular tissue. In the specimens I have examined I find that this relation does not exist and that not only were the structural characters which we are assuming to be associated with meat-feeding not specially marked in carnivorous birds but in some instances the exact contrary was pronounced. Further, these characters were strikingly marked in many species which subsist chiefly or exclusively on vegetable food. Microphotographs of a series of avine thyroids will illustrate these points. The specimens are arranged in three groups: first, a group representing the carnivorous birds of prey; next a group of fish-eating birds; and lastly, a group of graminivorous birds.

1. *Carnivorous birds of prey.*—These are represented by the short-toed eagle (Circaetus gallicus), the barn owl (Stryx flammea), and the elenora falcon (Falco elenoræ). In the thyroid of the eagle the vesicles are of good size and contain plenty of colloid; intervesicular tissue is absent. In the owl many of the vesicles are quite small and not a few contain no colloid; intervesicular tissue is present to considerable amount. The elenora falcon possesses a striking thyroid in which no vesicles at all are present, the polyhedral cells still retaining their primitive arrangement into solid clumps; colloid secretion is present only to a very slight extent and is found occupying chiefly the lymphatic spaces in the connective tissue trabeculæ (Fig. 3).

2. *Fish-eating birds.*—The examples of these are the guillemot (Lomvia troile) and the herring gull (Larus argentatus). In the guillemot the vesicles are not small and the sections show a lavish secretion of colloid and a minimum of intervesicular tissue. The thyroid of the herring gull contains no large vesicles anywhere and the secretion of colloid is sparse. It will be noticed that the vesicles are separated from each other by an unusually large amount of intervesicular tissue. (Fig. 4.)

3. *Graminivorous birds.*—As types of this group are the

---

[8] Forsyth: Journal of Anatomy and Physiology (forthcoming number).

[9] Ibid.

[10] Sloan: THE LANCET, May 28th, 1887, p. 1082.

[11] Fischer: THE LANCET, Jan. 4th, 1896, p. 75.

[12] Chalmers Watson: THE LANCET, Feb. 11th, 1905, p. 347.

ostrich (Struthio camelus), the crowned crane (Balearica pavonina), the white-backed piping crow (Gymnorrhina leuconota), and the tinamou (Crypturus Tataupa). In the ostrich the vesicles vary much in size but throughout the greater part of the section they are large. There is a free secretion of colloid and intervesicular glandular tissue is practically absent. (Fig. 5.) In the crane the vesicles of the thyroid are large, the secretion of colloid is copious, and intervesicular glandular tissue is almost entirely absent. (Fig. 6.) The piping crow shows vesicles for the most part small, though here and there a large follicle appears; the amount of colloid is moderate and intervesicular tissue is present though not to a very great amount. Lastly, in the tinamou no vesicles are present, the cells of the entire gland retain their primitive arrangement, and only at rare intervals is colloid found. (Fig. 7.)

These few specimens show all varieties of structure from the thyroid with large vesicles, much colloid and little intervesicular glandular tissue, to the thyroid in which vesicles are completely absent, the whole gland consisting of tissue identical with that which constitutes intervesicular glandular tissue. Both the extreme types are represented in the carnivorous and in graminivorous birds alike and it must be concluded that the structure of the normal avine thyroid is not modified in the way suggested by any diet habits of the birds.

### CONCLUSIONS.

1. Fowls kept for long periods on a protein diet but otherwise under healthy conditions show no hypertrophy or microscopic changes in the thyroid glands.
2. Their bony tissues are not affected provided the deficiency of calcium and other bases in the meat diet is made up by a supply of lime.
3. In none of the birds was any change indicative of gout observed.
4. Each of the four fowls maintained under the above conditions showed an unusual amount of colloid in their pituitary glands.
5. The thyroid glands of carnivorous birds of prey are not obviously larger, proportionately, than those of other classes of birds, nor are there any peculiarities of microscopical structure in the glands of carnivorous and graminivorous birds referable to differences in their natural foods.

(The expenses of this research were defrayed by a grant from the Royal Society to Dr. M. S. Pembrey, to whom the author is indebted.)

Harley-street, W.

## MALE TRIPLETS WITH ECLAMPSIA IN A PATIENT AGED 16 YEARS.

BY ROBERT OLLERENSHAW, M.B., CH.B. VICT.

THE following case shows such a number of noteworthy points—viz., the condition of male triplets, the complication of eclampsia, and the youth of the mother and father (the age of the latter being 17 years)—that it was thought to be worthy of record.

The patient, aged 16 years, was under the care of Dr. H. P. Potter, to whom I am indebted for his kind permission to publish the case. She was admitted to the Kensington Infirmary on June 30th and was, according to her own statement, eight months advanced in pregnancy. The abdomen was slightly pendulous and rather irregularly prominent at the point corresponding to the uterine fundus. By abdominal palpation a fœtal head could be felt at the fundus and per vaginam the os uteri was found to be three-quarters of an inch in diameter; the finger-tips could define a fœtal foot through the membranes. The patient was very comfortable, the temperature being 98° F., and the pulse 90 per minute and of good quality. The urine contained 0·3 per cent. of albumin and the feet and legs were œdematous. In spite of the very considerable albuminuria the condition of the patient was such that it was decided not to bring on labour at that time and a diet of milk only was ordered. On the following day (July 1st), at 6.15 P.M., the patient suddenly became cyanosed, convulsive twitching of both arms appeared, and consciousness was lost. The cyanosis increased to an alarming extent and the pulse could not be felt at the wrist. An injection of ether (ten minims) was made into the subcutaneous tissue of the neck. It was decided that labour should be brought on at once. The patient fortunately improved, becoming semi-conscious and screaming at the slightest touch. At 7 P.M. a second convulsive attack came on and at this time the administration of chloroform was commenced, the patient becoming completely anæsthetised in four and a half minutes. The os uteri was now found to be two inches in diameter; the membranes were ruptured and traction was made on the foot which had been previously felt. Both legs were now brought down and a small male child, who appeared to be of about eight months development, was delivered. It was with difficulty made to breathe, ten minutes' artificial respiration being required. The second fœtus immediately presented by the right knee and was delivered by bringing down the legs; this child was even smaller than the first and was very cyanosed, five minutes' artificial respiration alone being sufficient to cause spontaneous breathing. The third child was larger than either of the two previous; it presented by the brow and forceps were applied for its delivery. The patient improved considerably under the anæsthetic, the pulse at the end of the labour being much better than at the commencement; a hypodermic injection of strychnine was given during the anæsthesia. The third fœtus was contained in separate membranes and was the result of fertilisation of one ovum; the first and second fœtuses were uni-ovular, having a common chorion, the individual amniotic sacs having been broken through probably by fœtal movement. The two placentæ were united by their edges so as to form one large placenta, which was expelled quite intact with the membranes five minutes after the birth of the third child. The uterus contracted well after a hypodermic injection of ergotin (grain 1). The children were all males and their respective weights were as follows: the first, 2 lb. 14 oz.; the second, 2 lb. 6 oz.; and the third, 3 lb. 2 oz. In connexion with these weights it is interesting to note that the third, and heaviest, child was nourished from a separate placenta, and of the first two children, who shared one placenta between them, the cord of the smaller child was attached at the extreme edge of the placenta.

Porak[1] states that the weights of twins are rarely alike and that the point of attachment of the placenta appears to have much influence upon the nutrition of the fœtus. In the case above reported, however, the placental attachment was entirely at the uterine fundus; the chief factor controlling the fœtal circulation and consequently fœtal development seems to have been the points at which the cords were inserted into the placenta.

The mother's state was critical for the 12 hours following delivery, the pulse-rate varying from 136 to 150 per minute and the quality leaving much to be desired. At 10.45 P.M. (three hours after delivery) the patient became very restless and threw herself from side to side, flinging her arms about, and would have thrown herself to the floor had she not been restrained; she was in a dazed condition and screamed when held. This state of affairs lasted for four or five minutes, at the end of which time she became quiet and somewhat exhausted. Hot-water bottles were applied and the foot of the bed was raised two feet from the floor. The condition improved and a fairly good night was passed, with no return of convulsions. The albuminuria, which before delivery was three grammes per litre, fell gradually, and on the following day (July 2nd) was 1·5 grammes per litre; on July 3rd it was one gramme per litre and crystals of uric acid were deposited in the urine. On this occasion only was uric acid found. The percentage of albumin decreased quite steadily. On June 30th there were three grammes per litre; on July 1st, two grammes; on the 2nd, 1·5 grammes; on the 3rd, one gramme; on the 4th, 0·75 gramme; and on the 5th, 0·5 gramme. The excretion of urea during the period covered by the above figures was always subnormal but not to any great extent, ranging as it did from 1·3 to 1·6 per cent. On July 2nd there was evidence of bronchitis, probably due to the prolonged chloroform administration; pain in the chest was also complained of. A jacket poultice was applied every four hours and relief, accompanied by disappearance of the bronchitic signs, followed in 24 hours.

With regard to the fact that all the children were of the male sex Dr. H. F. Lewis[2] states that uni-ovular triplets are always of the same sex. In this case, however, the first two children only were uni-ovular, the third being developed from a second ovum. Chaliex[3] reports a case which appears to be very similar to the one reported above. In his case there were three male children; the first had a separate placenta, the other two had a common placenta with velamentous attachment of the cords. Westervelt[4] notes a case of uni-ovular triplets which were all females.

---

[1] Revue de Science Médicale, October, 1889.

[2] Teratology Section of Hektoen and Riesman's Text-book of Pathology.

With reference to the influence of heredity on the tendency to produce plural births it should be mentioned that twins had occurred twice in the girl's family within recent years; two aunts, who were sisters, had each given birth to twins. Details regarding previous generations could not be obtained. Mirabeau,[5] in an analysis of 75 cases of triplets, states that they occur usually in multiparæ who have had previous abortions and who belong to families where multiple births have been observed. He also found that the mothers of triplets were generally between the ages of 30 and 34 years. Wakley[6] has clearly shown the influence of heredity on the tendency to produce plural births. The presence of triplets was not suspected until after the birth of the second child, the fœtal heart-sounds being very indistinct.

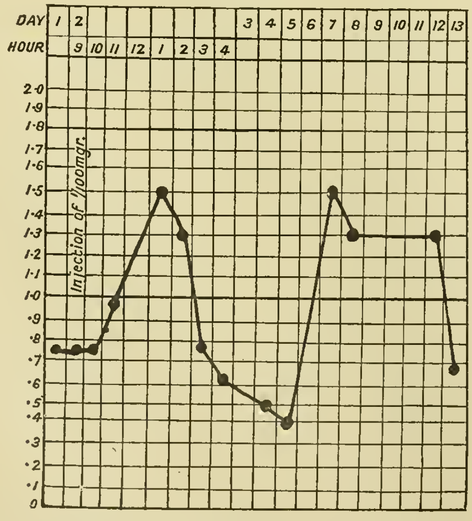
The Infirmary, Kensington, W.

# ON THE EFFECT OF TUBERCULIN ON THE GENERAL TUBERCULO-OPSONIC INDEX IN TUBERCULOUS PATIENTS.

BY HENRY H. CLARKE, M.A., M.B., B.C. CANTAB.,
HONORARY PHYSICIAN TO THE LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST AND PHYSICIAN IN CHARGE OF THE PATHOLOGICAL DEPARTMENT; LATE HOLT FELLOW IN PATHOLOGY, UNIVERSITY OF LIVERPOOL;
AND
HALLIDAY G. SUTHERLAND, M.B., CH.B. EDIN.,
LATE PATHOLOGIST TO THE HOSPITAL.

IT has been frequently stated that the injection of a therapeutic dose of tuberculin is invariably followed by a fall in the opsonic index lasting from three days to three weeks. This period of low opsonic index is generally known as the "negative phase" and its duration varies with the amount injected. This negative phase is followed by a period of high opsonic index, which is known as the "positive phase" and lasts for a few days, after which the index returns to about its original level. It is generally believed that by reducing the dose to the minimum that will produce any effect the negative phase may be reduced and the positive phase correspondingly increased. The doses which have been most frequently used to produce these results range from $\frac{1}{1000}$ to $\frac{1}{100}$ milligramme or even more.

CHART 1.



Showing effect of $\frac{1}{100}$th milligramme of tuberculin (T.R.).

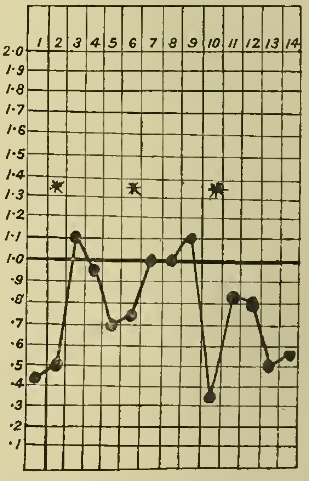
With a view to gaining more precise knowledge of the effect of a therapeutic injection we injected a phthisical patient with $\frac{1}{100}$ milligramme of Koch's new tuberculin (T.R.) and estimated the opsonic index hourly for several hours with the following result. (See Chart 1.)

| 1907. | Index. |
|---|---|
| Feb. 16th ... ... ... ... | 0·75 |
| " 17th, 9 A.M. (injected $\frac{1}{100}$ mgr.)... ... ... | 0·75 |
| " 17th, 10 A.M. ... ... | 0·75 |
| " " 11 " ... ... | 0·97 |
| " " 1 P.M. ... ... | 1·5 |
| " " 2 " ... ... | 1·3 |
| " " 3 " ... ... | 0·78 |
| Feb. 19th ... ... ... ... | 0·5 |
| " 20th ... ... ... ... | 0·4 |
| " 22nd ... ... ... ... | 1·5 |
| " 23rd ... ... ... ... | 1·38 |
| " 27th ... ... ... ... | 1·39 |
| " 28th ... ... ... ... | 0·76 |
| " 29th ... ... ... ... | 0·8 |

It will be observed that a rapid rise of the opsonic index occurred within two hours of the injection; it rose to a maximum in four hours, fell to its original level in six hours, and was succeeded by the usual negative and positive phases. This initial rise may be called the pre-negative phase and has hitherto been overlooked owing to the fact that indices are rarely taken more than once a day. This pre-negative phase has since been independently observed and recorded by Dr. Clive Rivière.[1]

In order to explain these facts it is necessary to assume that when tuberculin is injected into the body the opsonins present in the blood are absorbed by the bacillary débris. Fresh opsonins are then produced and as rapidly absorbed and it is thus that the negative phase is produced. But in accordance with the law of regeneration more opsonins are produced than suffice to replace those absorbed and sooner or later a point is reached at which the tuberculin is saturated. More and more opsonins are produced until the index begins to rise and the positive phase occurs. This theory will explain the negative and positive phases but not the initial rise. To explain this phase we must assume that at the moment of injection a minute fraction of the dose found its way immediately into the circulation, probably owing to rupture of some capillaries. This minute dose absorbed sufficient opsonin to set in motion the mechanism of immunity but not enough to cause more than an exceedingly minute and transitory fall in the index. The index accordingly rose rapidly. The great bulk, however, of the injection remained at the site of inoculation until by dilatation of the capillaries and transudation of lymph it too was swept into the general circulation. This occurring some hours later the excess of opsonins produced were again absorbed and the negative phase set in.

CHART 2.



Showing effect of $\frac{1}{1000000}$th milligramme of tuberculin (T.R.), the asterisk marking the date of dose.

If this explanation be correct, then it follows that if a sufficiently small dose be given the negative phase will be absent or so slight and transitory as to be negligible and the injection will be followed by an immediate rise. We have tested the truth of this explanation in five patients on 14 different occasions by injecting a dose of one-millionth of a cubic centimetre of tuberculin in a bulk of

---

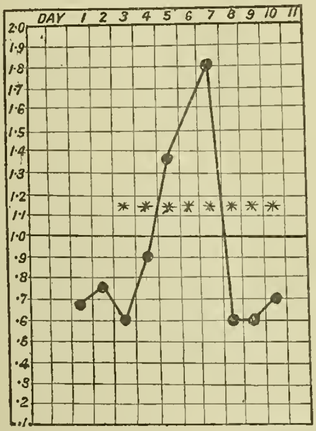
[3] Journal de Médecine de Bordeaux, Oct. 6th, 1889.
[4] Atlanta Medical Journal, August, 1889.
[5] Correspondenzblatt für Schweizer Aertze, Basel, Dec. 15th, 1894.
[6] THE LANCET, Nov. 23rd, 1895, p. 1289.

[1] Brit. Med. Jour., April 13th, 1907.

1·7 minims. (See Chart 2.) On every occasion the injection was followed by an immediate positive phase lasting from two to four days, after which the index resumed nearly its former level and the negative phase was absent. In one case, that of a child aged ten years, the positive phase continued to the sixth day.

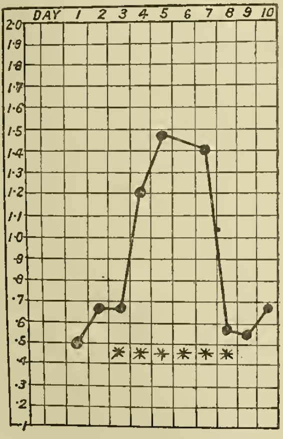
The next question which arose was whether by repeated injections one positive phase could be superimposed upon another, and if so how far could the process be carried.

CHART 3.



Showing effect of eight successive daily injections on dates indicated by asterisks of $\frac{1}{1000000}$th milligramme of tuberculin (T.R.).

CHART 4.



Showing effect of six successive daily injections on dates indicated by asterisks of $\frac{1}{1000000}$th milligramme of tuberculin (T.R.)

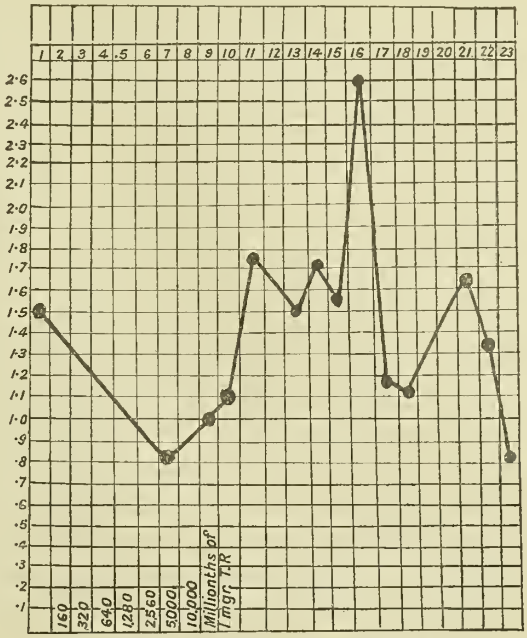
With this object a dose of one-millionth of a cubic centimetre of tuberculin was injected into two patients on six successive days with the following results. (See Charts 3 and 4.)

| | Case A. | | Case B. | |
|---|---|---|---|---|
| | Dose. | Index. | Dose. | Index. |
| 1st day | 0 | 0·66 | 0 | 0·75 |
| 2nd ,, | 1 | 0·65 | 1 | 0·5 |
| 3rd ,, | 1 | 1·2 | 1 | 0·9 |
| 4th ,, | 1 | 1·49 | 1 | 1·37 |
| 5th ,, | 1 | — | 1 | — |
| 6th ,, | 1 | 1·4 | 1 | 1·8 |
| 7th ,, | 1 | 0·59 | 1 | 0·6 |
| 8th ,, | 0 | 0·56 | 1 | 0·6 |
| 9th ,, | 0 | 0·68 | 1 | 0·7 |

It will be seen that the first three doses were followed by successive rises in Case A and the first four in Case B. In both cases the fifth injection was followed by a rapid fall to below the original level. Here the rise was higher and more prolonged than any previously produced in the same patients by a single injection and it seems reasonable to assume that this was due to a superimposition of positive phases. It is, however, obvious that this piling up of positive phases is only possible within very narrow limits. The mechanism of immunisation is one of delicate adjustment and is easily deranged. Apparently a very slight excess of tuberculin suffices to turn the scale and convert an over-production of opsonins into a deficit.

We have repeatedly tried the effect of injecting tuberculin according to the method suggested by Weber's law. This method has for its foundation the fact that in some classes of phenomena in order to produce effects increasing in arithmetical progression it is necessary to use stimuli increasing in geometrical progression. This method appeared to be successful in certain cases but the results are inconclusive. As an instance of the result produced by these means the following observations may be taken. (See Chart 5.)

CHART 5.



Effect of a series of rapidly increasing doses.

| | Index. | Dose (millionths of 1 mgr. T.R.). | | Index. | Dose (millionths of 1 mgr. T.R.). |
|---|---|---|---|---|---|
| 1st day | 1·5 | 0 | 12th day | — | 0 |
| 2nd ,, | — | 160 | 13th ,, | 1·5 | 0 |
| 3rd ,, | — | 320 | 14th ,, | 1·72 | 0 |
| 4th ,, | — | 640 | 15th ,, | 1·55 | 0 |
| 5th ,, | — | 1,280 | 16th ,, | 2·6 | 0 |
| 6th ,, | — | 2,560 | 17th ,, | 1·18 | 0 |
| 7th ,, | 0·82 | 5,000 | 18th ,, | 1·12 | 0 |
| 8th ,, | — | 10,000 | 19th ,, | — | 0 |
| 9th ,, | 1·0 | 0 | 20th ,, | 1·62 | 0 |
| 10th ,, | 1·1 | 0 | 21st ,, | 1·22 | 0 |
| 11th ,, | 1·75 | 0 | 22nd ,, | 0·86 | 0 |

From this table it would appear that it is possible by rapidly increasing doses to raise the opsonic index for a considerable period. We are not, however, at present justified in stating this as a fact universally true.

We have had under observation 32 tuberculous patients during the last six months. We have estimated the opsonic index on 492 separate occasions. In the present communication we do not pretend to define the value of tuberculin in treatment, or of the opsonic index as a guide to that treatment. It has first to be discovered how the opsonic index can be artificially modified, and only later does the problem arise as to what the effect of that modification is on the patient's health. We here have only ventured to record a few of our observations in the hope that they may be of some slight assistance to other workers in the same field.

# MULTIPLE HEREDITARY DEVELOPMENTAL ANGIOMATA (TELANGIECTASES) OF THE SKIN AND MUCOUS MEMBRANES ASSOCIATED WITH RECURRING HÆMORRHAGES.

By F. PARKES WEBER, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE GERMAN HOSPITAL, LONDON, AND TO THE MOUNT VERNON HOSPITAL FOR CHEST DISEASES, HAMPSTEAD.

Mrs. Sarah S., of Jewish origin, is a pale, somewhat fat woman of medium height, aged 60 years. She has a number of bright red angiomata distributed over the face, ears, lips, tongue, mucous membrane of the mouth, and the conjunctival surfaces of the four eyelids. All these angiomata are small; many, including those on the tongue and inside of the mouth, are hardly as large as an ordinary brass pin's head (punctiform angiomata); the largest ones are those on the face, the biggest of which, that on the right cheek, measures five by seven millimetres in diameter. They are all of them simple capillary angiomata (telangiectases) and hardly, if at all, raised above the general surface, with the exception of some of the larger ones (on the face), which project slightly and approach either the "spider nævus" (nævus araneus) class or a kind of small superficial cavernous nævus. On the face there are likewise a few of the common hair-like telangiectases. On the mucous membrane inside both nostrils there are some telangiectases to be seen, but on the posterior wall of the pharynx and by laryngoscopic examination of the glottis I could see nothing abnormal excepting some telangiectases on the anterior surface of the epiglottis. On the fingers, and notably under the finger-nails, there are several minute (pin-point) red angiomata, which I had not observed until Professor W. Osler, when he recently saw the patient, kindly drew my attention to them. I have searched most of the rest of the body for angiomata, but have failed to find any excepting those already mentioned. She has varicose veins and slight œdema of the legs.

Both the patient's appearance and the examination of her blood (April 11th, 1907) show that she is anæmic; the red cells number 2,833,000 and the white cells 11,350 in the cubic millimetre of blood; the hæmoglobin-value (by Haldane's method) is 45 per cent. Dr. A. E. Boycott has very kindly examined blood films (of May 22nd, 1907) and reports that the red cells are pale and many of them undersized, but are not otherwise abnormal. He finds that there is no evidence whatever of myeloid reaction. His differential count of 500 white cells gives the following result: neutrophiles (polymorphonuclears), 42·0 per cent.; lymphocytes, 45·2 per cent.; intermediates, 7·2 per cent.; large hyalines, 2·4 per cent.; eosinophiles, 2·4 per cent.; and mast cells, 0·8 per cent.

I thought the coagulation time of the patient's blood was slightly increased as compared to that for an ordinary healthy person, but on using Sir A. E. Wright's coagulation tubes ("coagulometer") I found (May 26th, 1907) that the coagulation time was only about five and a half minutes, so that the coagulability is within the limits for normal individuals.

On auscultation of the heart a systolic murmur of uncertain nature can be heard. With this possible exception the thoracic and abdominal viscera appear healthy. The urine is free from sugar and albumin and normal in quantity. The brachial blood pressure by the Riva-Rocci apparatus (using the broad band) is about 135 millimetres of mercury. Dr. C. Markus by ophthalmoscopic examination of the right eye found a small central patch of chorio-retinitis.

The patient has been married twice, and by her two marriages has had nine children, eight of whom are living. I shall return later to the condition of these children. The menopause occurred at the early age of 38 years. At about 48 years of age she suffered from sore places of some kind on the left leg.

The biggest of the angiomata (that on her right cheek) was first observed when she was about 42 years of age. Previously to that none had been noticed; the others, she thinks, have developed at various times since then. The nose-bleeding commenced a few years before the appearance of the spots on her face. During the last six years or so she has suffered from recurrent attacks of epistaxis, an attack occurring on the average about every two or three weeks (that is, not including the occasions on which just a little blood can be seen on the handkerchief). During the last two years, and especially recently, the bleeding has been worse than it was before. There seems never to have been a tendency to any other abnormal hæmorrhages.

The patient's mother, who died at the age of 56 years, was certainly subject to attacks of epistaxis and had one or two "spots" on her face similar to those on the patient's. Three sons and one daughter of the patient suffer likewise from attacks of epistaxis and in two of the sons I have ascertained the presence of multiple angiomata of the skin and mucous membranes. In these members of her family, as in the patient herself, there is no history of any abnormal hæmorrhages except from the nose.

Of Mrs. S. S.'s nine children one only, Joseph L., springs from her first marriage. He is now about 42 years of age and is said to be healthy and not to suffer from epistaxis or angiomata. I have not seen him. He is married and has eight children, of whom the eldest, a girl, aged 19 years, has had epistaxis.

Lewis S., her second child (the first by her second marriage), is now about 37 years of age and looks a well-built man, not especially anæmic. He says that he has enjoyed fairly good health with the exception of occasional attacks of nose-bleeding, which first commenced when he was about eight years old. On examining him I found that there were two small "spider nævi" on his left cheek and a few scattered red punctiform angiomata on his neck and the mucous membrane of his gums, lips, and tongue. I could also make out a telangiectatic condition of the mucous membrane of the right side of the nose—that is, the side from which he says the bleeding always or generally occurs. He is married and has one child, a girl, aged 11 years, who has had epistaxis.

Albert S., the third child, is now aged 35 years. He is a strong-looking, not anæmic, man who has served as a soldier in India and has enjoyed good health with the exception of slight malaria contracted in India and the occasional attacks of nose-bleeding to which he has been subject since about the age of ten years. On examining him I found three small angiomata of the "spider nævus" class on his left cheek and several small angiomata situated on the conjunctival surface of the eyelids and the mucous membrane of the gums and lips, varying in size, but not exceeding about three millimetres in diameter. Some of the larger (doubtless older) of these angiomata are more bluish than the smaller. I likewise noted some ordinary hair-like telangiectases of the skin of both cheeks. Rhinoscopic examination showed a decidedly telangiectatic condition of the mucous membrane lining both nostrils. He is married and has one child, a boy four years old, who has not yet suffered from epistaxis.

Harriet R., the fourth child, is now aged about 33 years, and is said to enjoy good health and not to have any of the "spots" on her skin or to suffer from nose-bleeding. She is married and has one child, a girl aged nine years, who has not yet shown any tendency to epistaxis.

Jacob S., the fifth child, now about 31 years of age, is likewise said not to be subject to nose-bleeding or to have any of the "spots." I have not seen him.

Annie S., the sixth child, aged 28 years, suffered from disease (probably tuberculous) of the left knee-joint during childhood but otherwise has enjoyed fair health, though during the last three years or so she has had occasional slight attacks of epistaxis. She herself has not noticed any "spots" on her skin and on examining her face and hands and the mucous membranes of her mouth and nose I could find no angiomata.

Rachel, the seventh child, aged about 26 years, is said not to suffer from nose-bleeding or to have any of the "spots." I have not seen her.

Marcus, the eighth child, is said to have died at the age of three years from brain-trouble following a fall.

Manning S., the ninth child, aged 23 years, has been subject to occasional nose-bleeding since he was 18 years old. Otherwise he has had good health and now looks healthy. When I examined him recently I could find no telangiectases or angiomata on the skin of the face and hands or on the mucous membrane of the mouth and nose, but on the front of the chest I noted a few minute red nævi, such as very many or most persons have one or two of on various parts of their body.

Mrs. S. S. was treated for a time with arsenic and afterwards with an iron preparation which she thinks has done her good. She is frightened, she says, of having the hæmorrhages from her nose altogether stopped, but although her blood coagulability is not abnormally low I am trying treatment with calcium lactate, having heard from Professor Osler of a good result apparently obtained by this method in one case. Calcium lactate (in daily doses of 15 grains) has now (July 13th) been taken for some weeks, but as yet apparently without any benefit. The patient has likewise been given a very dilute adrenalin solution to apply locally with a camel's hair brush whenever the epistaxis commences. This also has in the patient's hands apparently failed to arrest the hæmorrhage.

*Remarks on the literature of the subject.*—The first account of this malady in which several family groups of sufferers are referred to is that published in 1901 by Professor Osler entitled "A Family Form of Recurring Epistaxis associated with Multiple Telangiectases of the Skin and Mucous Membranes."[1] In it he has included three cases of his own. Recently Dr. Brown Kelly has reviewed the whole subject in his paper on Multiple Telangiectases of the Skin and Mucous Membranes of the Nose and Mouth,[2] which is accompanied by excellent coloured illustrations. I have arranged the following data from the published accounts under the various cases or families.

*Family 1.*—B. G. Babington[3] in 1865 published notes of a family showing a most remarkable tendency to epistaxis, but he makes no mention of the presence of angiomata or telangiectases of the skin or mucous membranes in any members of this family. There is therefore no certain evidence that his cases belong to the class under consideration.

*Family 2.*—J. Wickham Legg in 1876 read a paper before the Royal Medical and Chirurgical Society of London on a Case of Hæmophilia complicated with Multiple Nævi.[4] The patient, a musician, aged 65 years, had been subject to epistaxis from boyhood and had also shown a tendency to bleed from traumatic causes. He had numerous small nævi over the face, forehead, and various parts of the trunk which had been first noticed when he was about 41 years of age. Several members of his family suffered from epistaxis.

*Family 3.*—O. Chiari[5] in 1887 described the cases of two sisters, many of whose relations suffered from recurrent and severe epistaxis. He at first thought the spots on the mucous membrane in these two cases were telangiectases, but after observing two other cases he came to the conclusion that in all four cases he had to deal with blood extravasations undergoing a slow change, such as might be met with in hæmophilic patients. Brown Kelly shows reason for doubting the presence of hæmophilia in Chiari's, as also in Wickham Legg's cases.

*Family 4.*—Rendu[6] at the Société Medicale des Hôpitaux de Paris in 1896 brought forward the case of a man, aged 52 years, suffering from repeated epistaxis. He had small superficial angiomata of the skin of the face, neck, and thorax, and of the mucous membrane of the mouth. Angiomata were not actually seen in the nasal passages, but it was presumed that some were present there also and accounted for the frequent attacks of epistaxis. There was a history of repeated epistaxis in the patient's mother and in one brother. The latter, however, had suffered from albuminuria. The patient's father had died from "dysentery" and had been subject to melæna.

*Family 5.*—The first two cases described by Osler[7] were those of brothers, aged 57 and 55 years respectively. There was a history of repeated epistaxis in their father, two sisters, the child of one of the patients, and a grandniece. The face of Osler's elder patient "presented a very unusual appearance owing to the large number of dilated venules and capillary and venous telangiectases." There were numerous angiomata on the mucous membrane of the nasal septum and on the tongue. The younger of the two patients had likewise cancer of the stomach and died in the hospital. Sections of the septum of the nose from the latter case "showed many large dilated veins just beneath the epithelium."

*Family 6.*—Osler's third case[8] was that of a man, aged 49 years, who had been subject from childhood to attacks of epistaxis which recurred at short intervals. Except for the epistaxis he had been a healthy man. There were multiple telangiectases of the skin and of the mucous membranes of the nose and mouth. In this case cauterisation of the angiomata on the nasal septum seemed at one time to do good. So far as the patient himself knew "there were no bleeders in his family and none of the members had had serious attacks of epistaxis."

*Family 7.*—C. O. Hawthorne[9] has recently published a short note of the case of a woman, aged 49 years, with bright red telangiectases scattered over both cheeks and with a few on the fingers of the right hand. She had been subject to repeated epistaxis from childhood. Her father and a sister were troubled in the same way and both of them, as well as her eldest daughter, had "spots" like those on her own face. All her nine children had had more or less numerous attacks of epistaxis.

*Family 8.*—Brown Kelly's patients[10] were two sisters, aged 41 and 40 years respectively. Their father had been subject to attacks of epistaxis and vomiting, and he had "spots" on his face similar to those on their own faces; he was said to have died at the age of 62 years in consequence of frequent bleedings from the nose. The elder of the two patients died suddenly from syncope induced by severe epistaxis. A daughter (aged 23 years) of the elder patient had lately also developed telangiectases on her face. In Brown Kelly's patients, as in some of the other recorded cases, it does not appear that the telangiectases were present in early life. In fact, the obvious angiomata on the skin in these cases, as Brown Kelly points out, are not usually observed until the patient is approaching middle life, and "the most striking development of the telangiectases seems to take place from the age of 35 or 40 onwards."

Dr. W. Bligh[11] says that a man, aged 32 years, required his assistance on account of bleeding from the left forearm. On examination the source of the hæmorrhage was found to be a minute nævoid growth, from which arterial blood was spurting freely. Similar nævoid growths were present on the back of the left wrist, on the side of the neck, and on the forehead. The growths varied slightly in size, but the largest was no bigger than the head of a "carpet pin." He had been previously troubled with violent bleeding from more than one of the little tumours. Dr. Bligh destroyed all the little growths by cauterising them, but a few months later bleeding occurred from a fresh tumour on the face; two other fresh ones had likewise appeared upon the forehead. These were all destroyed in the same way. The patient was healthy and not hæmophilic. Dr. Bligh has kindly informed me that there is no history of angiomata in the family of his patient, but nevertheless I mention the case here as it is well known that usually "familial" diseases do occasionally present themselves in an apparently isolated fashion.

Though Dr. Bligh's case may not belong to the group under consideration it is a remarkable example of the kindred condition of multiple late developmental angiomata. An equally striking example of the latter condition is furnished by a case shown by Dr. F. J. Smith at the Medical Society of London on April 4th, 1898.[12] Dr. Smith's patient was a woman, 50 years of age, with multiple venous angiomata chiefly on the face and upper part of the trunk, varying in size from that of a pea to that of a small bean. In addition she had varicose veins of both lower extremities and both labia majora. Nine months previously, according to the patient's own account, she was perfectly well and had no varicose veins even in the legs. About that time she noticed a small painful spot on the right side of the nose, which came up like a small red pimple; soon after this some other red spots appeared on the back and shoulder and these spots later became bluish. In the case of a middle-aged man shown at the Dermatological Society of London on Dec. 12th, 1900,[13] with multiple bluish nodular angiomata on various parts of the body and face, there was a decided family history of multiple venous angiomata. Some of his little tumours dated from birth, others had only recently appeared. The occurrence in elderly persons of small multiple cavernous angiomata of the lips and mouth is probably not very rare.

---

[1] Johns Hopkins Hospital Bulletin, November, 1901, p. 333.

[2] Glasgow Medical Journal, June, 1906, vol. lxv., pp. 411–422.

[3] THE LANCET, Sept. 23rd, 1865, p. 362. I have not looked up other literature on "hereditary epistaxis."

[4] This paper was apparently omitted from the Transactions of the Royal Medical and Chirurgical Society, but a lengthy summary appeared in THE LANCET, Dec. 16th, 1876, p. 856.

[5] Erfahrungen auf dem Gebiete der Hals-und Nasenkrankheiten, Vienna, 1887, p. 60. I have only been able to refer to Brown Kelly's (loc. cit.) references to Chiari's cases and have not seen Chiari's original paper.

[6] Gazette des Hôpitaux, Paris. Nov. 24th 1896 1322.

[7] Loc. cit.

Loc. cit.

[9] THE LANCET, Jan. 13th, 1906, p. 90.

[10] Loc. cit.

[1] Note on a Case of Bleeding Telangiectases, THE LANCET, Feb. 23rd, 1907, p. 506.

[12] Transactions of the Medical Society of London, vol. xxi., p. 358.

[13] I cannot find the account of this case in British Journal of Dermatology.

The conclusions at which I arrive are the following. 1. That the disease (or morbid syndroma) which I am more especially considering in the present article affects and is transmitted by both sexes. 2. That the hæmorrhage in most cases is only from the nasal mucous membranes. 3. That in most cases the morbid syndroma is not connected with any hæmophilic tendency or any diminution of blood coagulability. 4. That the cutaneous angiomata are generally not congenital but that they are "late developmental" and usually first attract attention towards middle life. Some of the minute red spots of the capillary angioma class tend to develop into raised bluish nodules approaching the cavernous venous angioma in character. 5. That in most cases a tendency to nose-bleeding has been present from early life, or at all events many years before any cutaneous angiomata have been observed. 6. That with advancing years both the attacks of hæmorrhage and the anæmia usually become more severe. 7. That probably a kind of "vicious circle" is established, the repeated attacks of bleeding giving rise to a grave condition of anæmia, which in its turn increases the tendency to hæmorrhage. This consideration would furnish a reason for occasionally employing iron and arsenic as part of the treatment. 8. That the hereditary nature of bleeding telangiectases of the nasal mucous membrane may be compared to the occasional family tendency to suffer from hæmorrhoids, or to have ordinary varicose veins of the lower extremities, or multiple smaller varices and multiple hair-like cutaneous telangiectases on various parts of the body.[14] Hæmorrhoids in some cases may, in fact, be termed "hereditary developmental bleeding angiectases."

The study of families affected with multiple angiomata of the skin and mucous membranes might help to throw light on the general subject of pathological inheritance in man. In these cases it is the morbid tendency only which is inherited, just as it is in cases of hereditary tendency to pulmonary tuberculosis, but the study of the latter hereditary tendency is complicated and obscured by the fact that the advent of a microbe (the tubercle bacillus) is necessary for the fulfilment of the "morbid promise" or potentiality in question.

Harley-street, W.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF PARTIAL PERFORATION OF THE BOWEL SIMULATING APPENDICITIS; OPERATION; RECOVERY.

By W. PERCY BLUMER, F.R.C.S.EDIN.,

HONORARY SURGEON TO THE SUNDERLAND INFIRMARY.

THE patient, a coal hewer, aged 48 years, was admitted to the Sunderland Infirmary under my care on April 21st, 1907, complaining of a very severe pain in the right inguinal region and shooting across the abdomen. The history of the case was as follows. Whilst working in the Ryhope pit about 8 P.M. on April 18th he strained himself by slipping his foot when pushing a tub. He felt as if "something had torn in his bowels." There was no acute pain felt then nor for some hours afterwards. He continued to work until midnight—the end of the shift—with only momentary interruptions. The only other symptom which caused him any trouble was an urgent desire to micturate. He was able to pass a pint of clear urine and also had an action of the bowels. After finishing his work he was conveyed home to Ryhope by ambulance car and was seen by his medical attendant very soon afterwards. On examination there was no localised tenderness in the abdomen nor did palpation or percussion reveal anything abnormal. There was dorsal decubitus with both legs drawn up and abdominal facies. The temperature was 99° F. and the pulse was 76. Twelve hours later pain began in the hypogastrium and gradually became diffused over the abdomen. Tenderness on deep pressure was present over the appendix area. The temperature was 102° and the pulse was 80. There was no sickness. The subsequent symptoms changed but little up to the evening of the 21st (the date of his admission), the temperature fluctuating between 101° and 103° and the pulse always being below 80, with a gradual diminution in tone and volume. There was no history of any previous attack.

On admission to the infirmary the patient was in a rather collapsed condition (having driven three miles) and in great pain. There were great tenderness, rigidity, and some fulness over the right iliac fossa. He had a dry tongue and a feeling of nausea but there was no vomiting. The temperature was 101° and the pulse was 104. The symptoms pointed to appendix abscess. His abdomen was opened over the appendix area within an hour of admission. Recent inflammatory adhesions were found in the neighbourhood of the appendix. A small tear through the serous coat of the anterior part of the cæcum was found situated about two inches from the root of the appendix. The inner coats were bulging through. A purse-string suture was applied to the rent and the appendix, which was healthy, was removed for safety. For the first three days after the operation the condition of the patient was one of collapse, giving rise to some anxiety, but thereafter recovery was uninterrupted, and he was discharged quite well on May 23rd.

I have not been able to find the record of a similar case. The interesting points seem to be: an apparently simple slip causing a comparatively severe injury, the man being able to work for three or four hours after the injury, and the simulation of appendix inflammation.

I am indebted to Dr. Alfred Rutter of Ryhope and to Mr. Lionel H. Booth, my house surgeon, for the notes of the case.

Sunderland.

### INJURY TO SHOULDER; HERPES ZOSTER; INFLUENZA.

By JOHN ALLAN, M.B., CH.B. EDIN.

THE following case presents several points of interest and the sequence of events is unusual. A youth, 18 years of age, was seen on March 30th, 1907, on account of injury to his left shoulder. It appeared that when at work he fell and struck the back of his left shoulder against a block of wood. On examination no bruising was seen and no fracture or dislocation could be detected. Lead and opium lotion was applied to the part. During the next day or so he complained of pain at the back of the left shoulder and arm, but nothing definite could be made out to account for it. On April 3rd there appeared a herpetic eruption on the posterior aspect of the left side of the chest and on the left arm and forearm. This was accompanied by a good deal of pain. The temperature was slightly raised and the patient felt out of sorts generally. He was put to bed and the eruption was dusted with a simple dusting powder. He was given salicylate of sodium (15 grains) thrice daily and fresh vesicles as they appeared were painted with collodion. He progressed favourably until April 8th. On that date his temperature rose to 102·6° F., he was sick and vomited frequently, and he complained of headache and sore throat. On the following day his temperature was 103·8° and a scarlatiniform rash appeared over his body. This was most marked over the lumbar region and the buttocks. The face and neck and the extremities were not affected by the rash. The throat was very much congested and he had great difficulty in swallowing even fluids. He had pains throughout the body generally, especially in the back. Five grains of salicylate of quinine were given every four hours instead of the salicylate of sodium and a potassium chlorate gargle was prescribed. The temperature next morning was 103·2°, and thereafter it gradually fell to normal. The rash disappeared after 48 hours and the other symptoms gradually got less severe and by April 16th he was quite convalescent. A tonic mixture was then given and by April 20th he was cured. There was no desquamation.

---

[14] Cf. F. Parkes Weber: A Note on Cutaneous Telangiectases and their Etiology: Comparison with the Etiology of Hæmorrhoids and Ordinary Varicose Veins, Edinburgh Medical Journal, April, 1904, p. 346. In regard to the view that varicose veins are venous overgrowths, allied to venous angiomata, see A. Pearce Gould's Lettsomian Lectures in Transactions of the Medical Society of London, 1902, vol. xxv., p. 132; also W. Thorburn's remarks on Developmental Varix, Brit. Med. Jour., Nov. 17th, 1900, p. 1421; and Sir W. H. Bennett's remarks on Congenital Varix, THE LANCET, Nov. 22nd, 1902, p. 1374. For similar views regarding the etiology of hæmorrhoids see G. Reinbach, "Path.-anat. und Klinische Beitrage zur Lehre von den Hämorrhoïden," Beiträge zur Klinischen Chirurgie, Tübingen, 1897, vol. xix., p. 1; and "Hämorrhoïden im Kindesalter," Mittheilungen aus dem Grenzgebieten der Medizin und Chirurgie, Jena, 1903, vol. xii., p. 272.

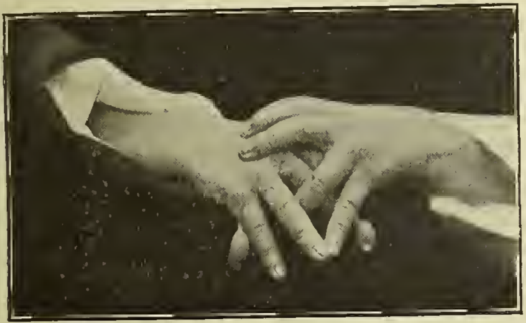
In this case it is somewhat difficult to decide whether the initial pain complained of resulted from the injury to the shoulder or whether it merely heralded the onset of the herpes zoster, the fall either precipitating the onset of the herpes or drawing the patient's attention to the pain. The attack of influenza which subsequently supervened is interesting because it was accompanied by a rash, a rather uncommon though not unknown occurrence. That it was influenza is proved because several people who came in contact with the patient contracted influenza and the nurses in attendance developed influenzal colds. The rash, too, had not the characteristic distribution of scarlet fever and there was no subsequent desquamation.

Kidderminster.

## A CASE OF SUPERNUMERARY DIGITS.

BY WILFRID H. W. ATTLEE, M.D.CANTAB., M.R.C.S.ENG., L.R.C.P. LOND.

THE accompanying illustration of the hands of a newly born male infant may be of interest. On each hand there was an extra digit attached to the ulnar side of the little finger by a soft pedicle consisting only of skin and blood-vessels.



Reproduction of photograph of infant's hands showing supernumerary digits.

Each digit had a well-formed nail. In all other respects the hands were normal. The child's parents are first cousins and one of their uncles had a supernumerary thumb on one hand. This man would be the infant's great-uncle.

Eton.

# Medical Societies.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on July 11th, Mr. W. D. Spanton, the President, being in the chair.—Dr. J. Hutchinson Swanton showed a specimen of Fibromyoma of the Vagina and read notes of the case. This occurred in a widow, aged 40 years, who gave a history of five pregnancies and four abortions, the last being five years previously. The clinical history was one of endometritis. The tumour was discovered in routine examination high up on the anterior wall and presented no symptoms. Removal was recommended as it increased in size recently. It was found to be a pedunculated fibromyoma measuring three-quarters by one-third of an inch.—In the discussion which followed Dr. H. Macnaughton-Jones said that such tumours were comparatively rare. It was important to know whether they became degenerated or malignant. Such growths were sometimes sarcomatous.—Professor J. W. Taylor had met with similar growths four times and in one instance it recurred three times after removal, although on examination presenting the histological characters of a myoma.—Dr. J. J. Macan raised an interesting point in the pathology of these tumours. —The President said that the question centred around the possibility of these growths becoming malignant.—Dr. Swanton also showed a specimen of Cystic Adenocarcinoma of the Ovaries and Vermiform Appendix removed from a patient, aged 69 years, originating in cystic growths and becoming malignant.—The President remarked on the extreme malignancy of these growths when arising in such a manner.—Dr. A. E. Giles commented on the diagnosis and said that carcinoma of the ovary was not often directly diagnosed, especially where there was no free fluid.—Dr. Macnaughton-Jones considered that the prognosis depended upon the escape of carcinomatous fluid into the peritoneum or not.—Dr. Macan said that malignant disease very frequently involved both ovaries, although not in an equal degree.—Dr. E. A. Neathy wished to know whether ovarian carcinoma occurred more frequently as a primary or secondary condition. He related an interesting case where recurrence took place in the adjacent intestine some months after removal of the ovarian tumour.—Dr. Macnaughton-Jones showed a specimen of Large Myoma removed from an unmarried patient, aged 32 years, who complained of menorrhagia and secondary anæmia. The growth was encapsuled by peritoneum and arose from the right of the body and cervix burrowing under the peritoneum. Another peculiarity was the presence of a lymphatic sac which seemed like the dilated and thinned-out body of the uterus undergoing degeneration. Both ovaries were removed as they were cystic and had degenerated.—Professor Taylor thought the cavity might be accounted for by the separation of layers of the peritoneum.—The President considered that the condition might be explained as being the result of peritonitis.—Dr. Swanton showed a Cyst of the Clitoris removed from a patient, aged 20 years, who thought that it was due to trauma and commenced three months previously. The growth was situated at the anterior extremity of the left labium minus, being three-quarters of an inch across. The clitoris and cyst were removed. The contents consisted of blood, pus, and sebaceous matter.—The President thought that such cases were rare and suggested that it might have had an origin similar to that of vaginal cysts.—Professor Taylor thought that the position was unusual and regarded it as a suppurating sebaceous cyst.—Dr. Macan said that such cysts were very rare. In the absence of further microscopical details it was difficult to decide as to the nature of the cyst.—The President then delivered his valedictory address and said that the amalgamation of the societies would act as an incentive to closer observation and more scientific methods. He hoped that the provincial members would come forward in the future as in the past. The death of the society meant but an entrance into a higher life of greater usefulness and enlarged opportunities in communion with similar interests. He then gave a *résumé* of the work accomplished by the society during the last 23 years. The first specimen shown was a multiple uterine myoma removed by hysterectomy. The view then expressed was that now held that to extirpate a tumour simply because it was a tumour which gave little or no trouble implied taking a responsibility on the part of the surgeon which he ought to decline. Other subjects discussed included matters such as asepsis, antisepsis, puerperal septicæmia, Porro's operation for cancer of the uterus, electrolysis in fibroid tumours as advised by Apostoli, myomata and pregnancy, morbid pelvic states and associated mental conditions, and displacement of the uterus and the use of mechanical supports. During the short session now brought to a close the subjects were of a practical nature and included uterine hæmorrhage, membranous dysmenorrhœa, prolapse of the uterus, inflammatory diseases of the appendages, mobile kidney, and the treatment of general peritonitis.—Hearty thanks were accorded to those who assisted in bringing about the amalgamation.—The meeting unanimously agreed—

> That we desire to record our appreciation of the courtesy and cordiality with which the Obstetrical Society of London united with our society in their arrangements for amalgamation.

—The meeting then terminated and the President signed the minutes.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on July 10th, Dr. J. W. Ballantyne, the President, being in the chair.—Professor J. A. C. Kynoch (Dundee) read a paper on a Series of Five Cases of Cæsarean Section for Contracted Pelvis. Three of the patients had been born in Glasgow. The first patient was in her second pregnancy; in her first she had been delivered of a stillborn child by version, after repeated attempts with forceps in Walcher's position had failed. The true conjugate was about three inches, the pelvis being of the small, flat, rickety type. The case was unfavourable for the performance of induction of premature labour. The mother and child did well. The second patient was a primipara in labour for 24 hours, with a true conjugate under two and a half inches; both did well. The third patient was in her second pregnancy; the first child was delivered by craniotomy; her true conjugate was two and three-quarter inches. She was operated on near to full time; the child lived but the mother died from septic peritonitis. The fourth patient was a primipara in labour for seven hours; her true conjugate was two and three-quarter inches; both did well. The fifth patient was a primipara in labour with a true conjugate of two and three-quarter inches; both mother and child recovered. The surviving mothers all nursed their infants. Professor Kynoch discussed the question of sterilisation and considered that if the patient was intelligent enough to understand the situation, and if she was willing to undertake the risk of a second operation, then sterilisation might be omitted at the first operation. Many cases had been reported where the operation had been repeated successfully two, three, or four times on the same patient. In Frau Rittgen's case it proved fatal at the fifth repetition of the operation. In all the cases reported Professor Kynoch had sterilised the patient by ligature and division of the tubes; this he considered a trustworthy enough method and safer to the patient than hysterectomy, which should be restricted to cases of atony and suspected infection of the uterus. Some recommended waiting till labour had begun, as they thought there was less chance of hæmorrhage from uterine atony and that a dilated condition of the cervix insured free drainage of the lochia. The first fear was groundless, as the uterus contracted quite as well before as after the onset of labour. A dilated condition of the cervix was of the greatest importance. In the first two cases Professor Kynoch incised the uterus between the bars of a flat vulcanite pessary, as recommended by Cameron, to diminish hæmorrhage from the uterine incision, but in the latter cases he discarded this method and did not find any marked difference in the amount of bleeding as a result. Further hæmorrhage in the course of the operation was best controlled by grasping the broad ligaments and subsequently maintaining uterine contraction by sponge pressure. The uterine incision in all cases was a vertical one; the transverse incision of Fritsch did not seem to have proved itself in any way superior. If sterilised towels were well packed round the uterus it was not necessary to adopt Müller's suggestion of eventrating the uterus before opening into it, as this involved a very large abdominal incision. But after the uterus had been emptied of its contents and as a consequence diminished in bulk the introduction of the uterine sutures was facilitated by bringing the uterus outside the abdomen.—Dr. A. H. F. Barbour, Dr. J. M. Munro Kerr, Dr. W. Fordyce, Dr. J. Lamond Lackie, and the President made remarks on the paper, and Professor Kynoch replied.—Dr. James Lochhead read a paper on the Carbohydrate Metabolism of the Fœtus. The part played by carbohydrates in the metabolism of the fœtus was discussed with special reference to the glycogen. An attempt was made to trace the changes which carbohydrates undergo in their passage from the maternal to the fœtal organism.—Dr. Barbour, Dr. James Ritchie, Dr. B. P. Watson, Dr. M. Campbell, Dr. Fordyce, and the President discussed the subject, and Dr. Lochhead replied.—Dr. Seichu Kinoshita, professor of gynæcology and obstetrics of the Imperial University, Tokio, Japan, was elected an Honorary Fellow.

# Reviews and Notices of Books.

*The Nutrition of Man.* By Professor RUSSEL H. CHITTENDEN of Yale University. With illustrations. London: William Heinemann. 1907. Pp. 321. Price 14*s.* net.

THIS new work by the author of "Physiological Economy in Nutrition," which was reviewed in THE LANCET of July 8th, 1905, p. 84, covers to a considerable extent the result of the researches set forth in that work. Since the time when Professor Chittenden studied under Kühne few men have devoted themselves more assiduously to the study of the problems of nutrition in man. Indeed, in the United States this is a subject which has attracted great attention. Authors, such as Atwater and the workers for the *U.S. Bulletin*, have done an enormous amount of useful work. In the end the object is the study of human nutrition.

The present book is the outcome of a course of eight lectures which have been delivered before the Lowell Institute of Boston during the present year. The first three chapters—on Foods and their Digestion, Absorption, Assimilation, and Metabolism—do not contain anything new, but give a very readable account of these subjects. We may in passing give an example of the happy expressions from the work of Dr. Curtis on "Nature and Health" to which reference is occasionally made. "Alongside of its brother proteid gelatin stands as a prince of the blood whose escutcheon bears the 'bend' sinister. Such a one, though of royal lineage, never aspires to the throne." This has reference to the fact that gelatin cannot even go to make the very kind of tissue of which itself is a derivative. We are treated to the results of Pawlow's work in connexion with the æsthetics of eating in relation to their important influence upon the flow of digestive secretions. Perhaps the following may interest the reader—viz., that the quantity of hydrochloric acid secreted by the stomach by the normal individual under ordinary conditions of diet amounts to what would constitute a fatal dose of acid if taken at one time in concentrated form. While three distinct ways—all reflex—are admitted for the flow of gastric juice into the stomach as a prelude to gastric digestion, and although secretin is treated of in connexion with pancreatic digestion, we failed to find a reference to the part played by gastric secretion as pointed out by Edkins. The curdling of milk in the stomach causes the casein to remain for a longer period in the stomach, like any other food, and its partial digestion by gastric juice to be made certain. Hence, for these reasons milk should not be treated as a drink in our daily diet. Each animal has its own particular type of proteid adapted to its particular needs. This leads to the ingenious theory of Abderhalden that the intestinal ferments ultimately split up proteids, leaving, however, a very resistant residue, non-proteid in nature, which is termed polypeptid and which may serve as a starting point for the synthesis or construction of new proteid molecules. Cohnheim's researches, however, go to show that ferments break down proteids completely. At most, however, digestion is the handmaiden of nutrition. We come across the following remark: "How wise the provision that all sugar should pass from the alimentary canal into the portal system." We find no reference to Heidenhain's explanation. The importance of intracellular enzymes is emphasised; indeed, in all tissues and organs of the body there is present a large number of enzymes of different types, endowed with different lines of activity. Man's body is always in a state of unequilibrium; it is a sort of "maelstrom" of continuous chemical changes and decomposition at the expense of the proteids, fats, and carbohydrates of the food and tissues with the liberation of the stored-up energy of these organic compounds.

It is in the chapter on the Balance of Nutrition that the author foreshadows his views. One fact of importance is that the nitrogen outgo tends to keep pace with the income of nitrogen, the body always striving to maintain a condition of nitrogen equilibrium. The human body does not store up proteid, no matter how greatly the tissues are in need of replenishment. In man it is impossible to accomplish any large permanent storing of flesh by over-feeding and the muscular strength cannot be greatly increased by excessive intake of food. Marked permanent deposition of flesh is connected with the "regenerative energy of living cells." Race and individuality count for much. "A given diet with Cassius may lead to different results than with Anthony." Obviously, the diet must depend largely on the muscular work done, and this in turn will depend on the material used up in connexion with muscular work. The energy may come from all three classes of organic foodstuffs. Even in fasting animals, where the store of carbohydrate is more or less used up, severe muscular work causes no little appreciable increase of nitrogen output, showing fat as the source of the energy; indeed, only about 1 per cent. of the animal's proteids is eliminated each day.

The latter half of the volume deals with the "*true* nutritive requirements of the body." According to the author, arguments based on the dietetic customs and habits of mankind are not to the point, nor are instinct and craving wise guides to follow in the choice and quantity of food. Direct physiological experiment is the guide to the "ideal diet" (p. 165). The author cites his own observations on proteid diet already published, such as those on 20 men from the Hospital Corps of the army, and again he comes to the same conclusion as before that the body weight and nitrogen equilibrium can be maintained on an amount of proteid food far below the fixed dietary standards. University athletes are then referred to, and the results of Fischer of Yale on strength as distinguished from endurance are considered, and the same conclusion is arrived at as regards the reduction of proteid food. Overfeeding is the predominant dietetic sin. As to resistance to disease, the author has no evidence that this is diminished on his reduced proteid diet. A new group of experiments on dogs to test the effect of low proteid diet on high proteid animals is detailed and the results again confirm the author in his opinion. It will be seen, therefore, that the author maintains his position as to the excessive amount of proteid even in our "normal" and "standard" dietaries. This work is largely a reflex and extension of his previous volume.

---

*Archives of Neurology.* By F. W. MOTT, M.D. Lond. London: Macmillan and Co., Limited. Pp. 626.

THE third volume of the "Archives of Neurology" of the Pathological Laboratory of the London County Asylums, consisting of the record of work done by Dr. F. W. Mott and by assistants under his direction, is a most notable achievement. Dr. Mott has truly founded a school of pathology in this country, and as his opportunities are great so has he taken corresponding advantage of them. The London County Council, in applying its money to the maintenance of research work and in not stinting the means at its disposal, is in reality doing the work of a State-aided academy, and by these published results it justifies its confidence in the zeal and diligence of its officers who, relieved of departmental and economical worry, are able to carry out investigations in the true scientific spirit untrammelled by perfunctory monotony.

Of the 26 chapters in the book 15 are written by Dr. Mott (one, however, in conjunction with Dr. W. D. Halliburton) and 11 by others connected with the laboratory. Some of these chapters are in reality essays, involving much time and laborious investigation, and whilst some are sufficiently distinctive to constitute a life-title for excellence in research work, others may be characterised as distinguished, whilst none are mediocre. Merely to name the subjects of the various contributions is unnecessary because our limits do not allow us to criticise them all, but we may call especial attention to three of them—viz., the Mammalian Cortex, with Special Reference to its Comparative Histology, the Suprarenal Glands in Nervous and other Diseases, and the Effects of Alcohol on the Body and Mind as shown by Asylum and Hospital Experience. The first named of these is the "Bowman Lecture," founded on work done by Dr. Mott in the laboratory at Claybury. It is an epoch-marking contribution and by itself stamps the originality and profundity of the author. The second article, written in conjunction with Dr. Halliburton, is of great interest not only to those concerned with the treatment of insanity but to general physicians, whilst the third is of immense importance for every practitioner of medicine.

One chief value of the work is the model that it provides of what can be done by the personality of a central director in associating with himself contributors and workers in many different directions, forming a totality energised in bringing its materials to elaborate the unity of the processes of disease in all parts of the body.

The book is not for everyone to understand. To read it presupposes a large amount of training and special knowledge, and as it represents years of work so will it take a considerable time for assimilation, but it may be taken up at disposable moments and gradually incorporated, with the conviction that it relates facts to be stored up and not mere probabilities which do not merit the trouble of acquisition. There is nothing electric about the book, nothing startling in the shape of fascinating theories, but it is a solid piece of thorough work which may be safely used as an effective cantilever for further additions. Dr. Mott hopes that by more extensive collaboration it will be possible for sufficient research work to be produced to enable a volume to be published annually. We hope, however, that no pressure will be put upon the workers, no stress to produce a volume annually merely because so many months have elapsed. The drawings and photo-micrographs are of great excellence. We should prefer to find the leaves cut and we venture to suggest an index in future volumes.

---

*Food and Hygiene.* By WILLIAM TIBBLES, LL.D., L.R.C.P. Edin., M.R.C.S. Eng., L.S.A. London: Rebman, Limited. 1907. Pp. 672. Price 8*s*.

"FOOD and hygiene" is a well-nigh inexhaustible subject and anyone dealing with it must realise the difficulty of keeping his observations within such limits as not to exceed the space usually allotted to a text-book of average size. The chief merit of the book before us is that the author has contrived to cover a good deal of ground within the limits of a volume which is decidedly less bulky than are many standard works on the same subject. In doing so he has sacrificed on the whole very few, if any, essential points. He has in particular succeeded in conveying to the reader the relations between food and health. Starting with some generalisations on food in its relation to the wear and repair of the body, he prepares the reader with a good priming of physiological and chemical knowledge so far as they bear on the great metabolic processes. Next he introduces him to the materia alimentaria in 11 well-written chapters, the two chapters at the end of this section dealing with water, air, ventilation, climate, clothing, and so forth. In the chapter on stimulants and narcotics he acknowledges drawing a good deal of material from the pages of THE LANCET. He quotes, for example, numerous analyses of wines and spirits which have been published from time to time in our columns. We may be excused for pointing out that some of the figures are incorrectly printed; the higher alcohols for "three star" brandy should read *120·58* and not 12·0, while the footnote incorrectly states that the secondary products are reckoned in grammes per litre. "Per litre" should read *per 100 litres of absolute alcohol present.* The chapter on water, though short, sums up the situation very well in the light of modern knowledge and of course includes a reference to the share which bacteriology and chemistry take in elucidating questions of the fitness or unfitness of water for drinking purposes. We must, however, point out one mis-statement in this section. In describing the simple test for the presence of organic matter in water, which consists of adding some permanganate of potassium to the water and observing whether the colour of the liquid changes or whether a deposit is produced, it is stated (p. 313) that "the organic matter in the water will be oxidised and deposited as a brownish sediment." The "brownish sediment" is not the organic matter but the manganese hydrated oxide which separates as a result of the permanganate being reduced by organic matter. In most cases the organic matter would very probably be oxidised into carbonic acid gas, water, and nitrogen, and these clearly do not form the elements of a sediment. Part III. is devoted to the important subject of food and hygiene in sickness and here again the author may be congratulated on his choice of facts and on his power of discriminating essentials from detail. On the whole, the author has carried out his responsibilities well and has succeeded where not a few fail in harmonising theory with practice so far as that is possible in the light of modern views.

## LIBRARY TABLE.

*Hadden's Pocket Vocabulary of Medical Terms.* By Henry Payne, M.D. Brux. Fourth edition. Revised and enlarged by Philip Cowen, M.D. Durh., and Herbert Davey of the Middle Temple. London: Hadden, Best, and Co. Pp. 229. —The object of this vocabulary is to supply a want felt by registrars, Poor-law officials, and others who, not being medical men, have still much to do with the profession in the way of receiving death and other kinds of certificates. In selecting the words those have been chosen that are in most frequent use among the members of the profession; a few others are added for the help of nurses who often hear words used by a surgeon that do not indicate diseases but simply symptoms. In giving the pronunciation, the words have been divided into syllables, spelt as sounded, and those to be accented are indicated by the mark ′ placed above and beyond the syllable; in addition some of the vowels are sounded long and others short, these being indicated by the usual signs. The meanings of the words are given as simply as possible; a very short account is added of some of the symptoms of the diseases. An explanatory list of parasitic diseases is also included. The little book is a very useful one for those for whom it is intended; we can recommend it as a careful compilation.

*Surgical Emergencies.* By Percy Sargent, M.A., M.B., B.C. Cantab., F.R.C.S. Eng., Surgeon to Out-patients, St. Thomas's Hospital; Assistant Surgeon to the National Hospital for the Paralysed and Epileptic, Queen-square; and Surgeon to the Victoria Hospital for Children, Chelsea. (Oxford Medical Manuals.) London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 256. Price 5*s.* net.—This is a little book likely to be useful to the junior members of the profession when confronted with surgical emergencies, or rather it should be read and the teaching contained in it should be assimilated before the emergency arises, as when sudden need occurs there is little time for referring to books. As the author mentions in the preface, it is not complete but deals with the more common of the surgical conditions in which prompt action is needed. The chapters are headed Hæmorrhage, Burns, Fractures, Strangulated Hernia, and so on. A chapter is devoted to the injuries and diseases of the ear and another to those of the eye. A dogmatic style is employed, which is best adapted for those who need help suddenly. The book is well printed in large type.

*A Manual of Prescription Writing.* By Matthew D. Mann, A.M., M.D. Revised by Edward Cox Mann, M.D. Sixth edition, revised according to the United States Pharmacopœia of 1906. London and New York: G. P. Putnam's Sons. 1907. Pp. 232. Price 4*s.* net.—The fact that this little book has reached a sixth edition is a sufficient guarantee of its utility. The posological information is based on the United States Pharmacopœia and is prefaced by the naïve statement that "the determination of the doses for the different drugs, proper under all circumstances and conditions, is simply impossible." The remaining chapters are of equal use to English and to American students and deal with the pharmaceutical and grammatical construction of prescriptions with examples of all the various methods of exhibiting drugs, in which the metric equivalents of doses are given. A good list of incompatibles concludes the book. It is at this date somewhat strange to read in the original preface of 1878 a complaint of the lack of text-books dealing with the subject.

*The Annual Charities Register and Digest.* With an Introduction by C. S. Loch, Secretary to the Council of the Charity Organisation Society. London: Longmans, Green, and Co. and Charity Organisation Society. Sixteenth edition. Pp. cccxxiv. + 705. Price 5*s.* net.—This work is undoubtedly of the utmost value and contains an enormous amount of information which is conveniently arranged and exceedingly well indexed. The index is, indeed, its most salient feature as it enables anybody who is interested in a particular case of distress to discover at once all the available methods of dealing with it. The book is prefaced by the note: "As far as possible all fraudulent institutions and societies have been excluded. It must not be concluded, however, that the entry of a charitable institution in the Register is equivalent to a general recommendation of it." Although it would be an almost intolerable task to verify the *bona fides* of every institution mentioned there is no doubt that the great majority of them are in every sense described by the word "charitable," if we except such societies as those devoted to anti-vivisection and vegetarianism, and all who take an active interest in philanthropic work will find much to interest and to assist them in this book. The excellent introduction contains a full account of the methods of Poor-law relief and the importance of its coöperation with private enterprise. A review of the year is included and short special articles are contributed on subjects such as tuberculosis, inebriates, epileptics, provident dispensaries, rescue work, and so on. The bulk of the book consists of a directory of charitable institutions for every purpose, with a summary of their constitutions.

*The Manipulation and Fitting of Ophthalmic Frames.* By Harry L. Taylor. Birmingham: J. and H. Taylor. 1907. Pp. 117. Price 4*s.*—It is advisable that every ophthalmic surgeon should know how lenses are ground and spectacle frames made and fitted. Mr. Taylor's book gives sufficient information upon the latter subject and will repay perusal, since it does not go too technically into the question. We welcome the book as an indication that British opticians are taking more care in the fitting of glasses than has been their custom in the past. It is second only in importance to the correct ordering of lenses and should occupy their attention to the exclusion of functions which they are unqualified to deal with.

## JOURNALS AND MAGAZINES.

*The Journal of Physiology.* Edited by J. N. Langley, Sc.D., F.R.S. Vol. XXXV. Nos. 5 and 6. July 2nd, 1907. London: C. F. Clay. Pp. 143. Price 9*s.*—The articles contained in these numbers, which are issued under one cover, are: 1. The Innervation of the Bladder and Urethra, by T. R. Elliott, George Henry Lewes student. This is a long and carefully prepared article which does not admit of being briefly abstracted, but the chief conclusions at which Mr. Elliott has arrived from experiments upon cats, dogs, rabbits, ferrets, goats, mongooses, and other animals are that the physiological innervation of the bladder varies in different genera of animals, so that whilst in all mammals the pelvic visceral or sacral nerves cause the whole bladder to contract, in some, as the cat and rabbit, they also inhibit the sphincter. Hence the nervi erigentes, or pelvic visceral nerves, springing from cells situated in the sacral segments of the cord below the lumbar enlargement, are the nerves of micturition. In the cat, and in a less degree in the monkey and pig, the hypogastric nerves, which have a root origin above the lumbar enlargement, constrict but do not shorten the urethra and relax the bladder. They are nerves which promote retention of urine. They do not have this action in man. Automatic rhythmic contractions practically only occur in bladders supplied with inhibitory nerves. In the dog the hypogastrics control only a very small area at the base of the bladder close to the sphincter. Universal inhibition of the bladder as in the cat is not observed. Variations in the extent of area innervated by the hypogastrics are found to exist in different animals, being large in the ferret and male goat and small in the rabbit, female goat, and mongoose. The effects, immediate and remote, of nerve section are given. 2. The Functions of the Epiglottis and of the Glosso-Epiglottic Fossæ, by T. P. Anderson Stuart, M.D., Professor of Physiology in the University of Sydney. Professor Stuart supports the generally accepted view that in deglutition the larynx is closed by the whole organ, as may be felt by placing the finger on the pomum Adami which is then drawn upwards and forwards under cover of the base of the tongue. The epiglottis shows little or no movement. The arytenoid cartilages are first apposed to each other and somewhat raised, and then together they glide and incline forwards to come into contact with the epiglottis, movements that are facilitated by the disposition of the squamous epithelium covering their surface. The taste buds on the laryngeal surface of the epiglottis are true organs of taste. 3. The Regeneration of the Post-Ganglionic Vaso-constrictor Nerves, Part II., by Basil Kilvington and W. A. Osborne. The conclusion arrived at by these experimenters is that when the sciatic nerve of the dog is divided in the mid-femoral region and immediately sutured complete regeneration of vaso-constrictor nerves need not be expected prior to the 205th day. 4. Cholein in Cerebro-spinal Fluid, by Otto Rosenheim, M.D., lecturer on chemical physiology at King's College, London. 5. The Physical Properties of Horse Serum, by John Mellanby, M.A. 6. Metabolism during Starvation—1, Nitrogenous, by E. P. Cathcart, M.D. Glasg. These numbers of the *Journal of Physiology* contain also the Proceedings of the Physiological Society for March 23rd and for May 18th, 1907, as well as the index and title-page for Vol. XXXV., 1906–1907.

*St. Thomas's Hospital Gazette.*—The June issue contains the concluding section of the very interesting paper on Alcohol and Insanity, read by Dr. F. W. Mott, F.R.S., before the St. Thomas's Hospital Medical and Physical Society. The different types presented are discussed and a brief account is given of the structural changes met with in the nervous system in cases of alcoholic polyneuritic psychosis. The paper is illustrated by micro-photographs and diagrams. Lighter fare is provided in an amusing skit entitled, "A Hospital Appeal," parodying the methods of a leading representative of another hospital.

*St. Mary's Hospital Gazette.*—The June number contains the valedictory address delivered by Dr. D. B. Lees, reviewing some of the opinions which are associated with his name. Thus, he emphasises the value of the ice-bag and bleeding in pneumonia and of the former alone in other inflammatory conditions. He accepts the micrococcus rheumaticus, or, as he here calls it, the rheumatococcus, as the proved cause of acute rheumatism and lays stress once more upon the dilatation of the heart which may occur in this malady as well as in diphtheria and influenza. He enforces the need for careful percussion of the cardiac area to ascertain the existence of dilatation of the different cavities of the heart, especially the right auricle and the left ventricle, and holds that salicylates often fail in rheumatic conditions owing to the employment of insufficient doses. Finally, he maintains that percussion is a most important aid in the early diagnosis of pulmonary tuberculosis, and that the treatment of this affection by inhalation of volatile antiseptics gives very gratifying results.

*The Bristol Medico-Chirurgical Journal.*—In the June number of this magazine Dr. J. Michell Clarke writes on Some Unusual Complications of Pneumonia, including peritonitis, thrombosis of vessels, endocarditis, nephritis and arthritis, and Dr. W. Kenneth Wills analyses 80 cases of Lupus Vulgaris, which he classifies under seven different types. Dr. Bertram M. H. Rogers records a case of Narcolepsy in a patient, aged about 30 years, who came of a neurotic stock, and Dr. F. Percy Elliott an instance in which compression of the aorta was successful in saving the life of a woman suffering from post-partum hæmorrhage.

*The Bio-Chemical Journal.* Edited by BENJAMIN MOORE, M.A., D.Sc., and EDWARD WHITLEY, M.A. Vol. II. Nos. 7 and 8. June 20th, 1907. University of Liverpool: Johnston Laboratories.—These numbers contain: 1. Allyl Sulphide, Some Aspects of its Physiological Action with an Analysis of the Common Leek (Allium porrum), by Wace Carlier, M.D., and C. Lovatt Evans. The authors found the composition of the leek to be: water and volatile oil, 88; fixed oil and glycoside, 0·65; resin, 0·48; organic acids and colouring agents precipitable by lead acetate, 1·10; sugars and extractives not precipitable by lead acetate, 2·24; gums and pectous substances soluble in water, 2·20; proteins, 1·55; pectous substances soluble in dilute NaOH, 1·69; cellulose, 0·77; soluble in $B^n$ $NH_4OH$, 0·46; soluble ash, 0·72 (5 per cent. Cl); and insoluble ash, 0·14. The oil $(C_3H_5)_2S$ is yellow in colour, is absorbed with difficulty through the mucous membrane of the alimentary canal and skin, and is excreted by the lungs and skin, though not apparently by the kidney. In neurotic people garlic and onions act as an excitant. Allyl sulphide has no solvent action on uric acid or the urates. In rabbits the injection of 15 minims of a 1 per cent. solution of the oil caused in the first instance slight fall and then increase in blood pressure with reduction of the respirations from 51 to 39 and even 33 in the minute. 2. On the Effects of Acids, Alkalies, and Neutral Salts on the Fermentative Activity and on the Rate of Multiplication of Yeast Cells, by Eric Drabble, D.Sc., and Daisy Scott, M.Sc. The neutral salts of potassium and sodium fail when in small proportion to exhibit any marked inhibitory action on fermentation and the yeast cells reproduce actively in all strengths. Hydrochloric and nitric acids in strength 0·1 per cent. are fatal to the cells. 3. On the Phosphorus Percentage of Various Samples of Protagon, by A. C. Lockhead and W. Cramer, Ph.D. The authors found it to be 1·07 per cent. 4. Observations on the Behaviour of Opsonic and Serum Proteids during Pressure Filtration, by Warrington Yorke, M.B., Ch.B. Liverpool. The author finds that opsonins are not dialysable. 5. Heat Rigors in Vertebrate Muscles, by C. H. Vrooman, M.D., C.M. Winnipeg. The author finds that both the striped and unstriped varieties of mammalian living muscle subjected to a gradually rising temperature undergo two marked and comparatively sudden contractions, first, at about 47° C.; and secondly, at about 62° C. 6. The Conductivity of Blood in Coagulation, by T. M. Wilson.

---

HOUNSLOW HOSPITAL.—The question of the abuse of the out-patient department at this hospital is now under consideration by the committee of management, which has appointed a sub-committee to investigate the cases.

THE LANCET.

*LONDON: SATURDAY, JULY 20, 1907.*

# Considerations as Regards the Administrative Control of Tuberculosis.

THE recent report of the Royal Commission on Tuberculosis has raised some extremely important issues with reference to the administrative control of the disease. So great is the influence of authority in swaying public opinion that the unwarranted statement made by Professor KOCH in 1901 had practically the effect of diverting all attention from the bovine animal as a source of tuberculosis in man and of attaching, at least for the time being, an altogether distorted importance to the human bacillus. Now, after some six more years, we are face to face with a statement equally authoritative and based upon experimental data of a far more trustworthy and scientific character than the few adduced by Professor KOCH to the effect that a very material amount of human tuberculosis is undoubtedly of bovine origin—how much cannot as yet be known. The answer depends upon whether the bovine bacillus can by residence in the human economy become so altered as to be indistinguishable from the human bacillus. If this is found to be the case it is not altogether inconceivable that the bovine animal before long may be shown to be the main source of tuberculosis in man. Side by side with these revelations are others based also upon experimental research of a high order which point very strongly to the conclusion that whether from the bovine or the human source it is in infancy that the major portion of human tuberculosis is acquired and that, having been acquired, it remains latent in the glands of the body until age proclivities, puberty, overwork, overcrowding, and other forms of physical and mental strain render the body a suitable soil for the multiplication of the latent bacilli and an obvious and active tuberculosis results, accompanied by efforts on the part of the parasite to free itself from its dying host and so to perpetuate its existence. Again, certain other experiments are tending, so far as they go, to discredit the theory of infection by inhalation; this method of contracting the disease is rare, some say impossible. On the contrary, the nearest route to the lungs is said to be *viâ* the intestines—i.e., by the route by which food and other particulate matter reach the economy.

Whilst these far-reaching controversies are being waged the disease, in so far as England and Wales are concerned, continues to decrease, as evidenced by the death-rate. Indeed, the behaviour of the disease in this country seems to suggest that tuberculosis, like leprosy and typhus fever, may be tending towards extinction, and the problem in administration which is presented to all intelligent minds is as to the means by which the decrease in the death-rate may be accelerated. Is this best attempted, according to the views of the lay mind, by dealing with tuberculosis as with small-pox, by locking up all those who present even suspicions of the malady, or is it practicable to hasten the departure of the disease in a fashion which is less drastic and which will not disorganise society to such an inconvenient extent? If it be true, as the Germans say, that everyone at death manifests a focus of tuberculosis and if it be true that a very large proportion of the population would manifest some reaction to the tuberculin test, it is clear that to search out, as is the custom in outbreaks of diphtheria, all those who are carriers of the bacillus would inevitably lead to commercial and social paralysis. The bulk of the population would be segregated and the non-tuberculous would remain in an isolation of a somewhat inconvenient character. It will at once be conceded that "stamping out" methods such as these are not likely to receive the consent of Parliament; indeed, the application of such methods might materially thin the attendances at Westminster. Some regard must be had to the proportions of the problem and a first and elementary distinction has to be made between "closed" and, to other persons, harmless tuberculosis as opposed to the "open" or tubercle expectorating form of the disease. It would be well if this distinction could be appreciated and acted upon. The suggestion to impose compulsory notification of pulmonary tuberculosis upon London with its 5,000,000 people is a proposal which in our view has not been fully digested, and it is to be hoped that medical practitioners will themselves take into consideration the desirability of discussing the question from their point of view. It is one thing to notify to the health authorities cases in which their visits can obviously prove of value in the matter of cleanliness, overcrowding, instruction, and so on; it is another to label as tuberculous persons who have years of work before them and who, on the most accentuated view as regards infectivity, are of no danger to their fellows. In many cases the medical practitioner might be allowed to use his discretion as to whether he should notify or not and, if necessary, he might by some legal provision short of compulsory notification of all cases, early or late, "closed" or "open," be relieved of legal consequences in the matter of professional secrecy in this sense.

As regards sanatoriums, we have still much to learn or, perhaps, rather much to unlearn. The public has been told that with sanatoriums alone it is possible to stamp out pulmonary tuberculosis. Those who have made this statement will, we trust, live to see its confutation. Sanatoriums are useful institutions, both from the point of view of treatment and of education, but the majority of those who are entering them to-day will have solved the riddle of the universe within the next four or five years, or be a charge upon the rates or their friends. The remainder will not improbably be performing useful work and may continue to do so for many years to come. But the erection of sanatoriums upon economical lines should be encouraged, as there is no doubt that they form a useful portion of the administrative machinery necessary to deal effectually with the problem of tuberculosis. It is to be feared, however, that what may be termed the small-pox standard of infection is leading to the erection of sumptuous institutions, costing sometimes as much as £1000 per bed, and to the provision of enormous sites to allay the public dread as regards infection. All these things are not essential. There are to-day a large number of institutions constructed of wood or other cheap material which are affording opportunities for health and renewed vigour to numerous tuberculous patients who, were the £1000 per bed standard regarded as essential, would still be in their homes in the slums of large cities, and possibly in some instances infecting others with whom they lived. If these poor people are to be debarred from obtaining fresh air, food, and rest at a cheap rate by the requirement of standards necessitating at least 2000 cubic feet of space per bed, and walls around the site rising to seven feet, beyond which the patients are never to stray until death or "cure" releases them from bondage, there is not likely to be much progress made in the erection of sanatoriums, and if these unnecessary standards are to be made retrospective the majority of the sanatoriums must be closed and the patients sent back to their homes where, unrecognised and uncontrolled, they will await the final scene. It is to be hoped that no such restrictions will be imposed upon sanatoriums in which, so far as the evidence goes, the sick are not dangerous to the healthy. These are a few of the problems which are awaiting solution by the Local Government Board and we cannot say that we altogether envy it the task of determining what is practicable in the face of much which lacks the sense of proportion, more especially as at the same time it will be necessary to deal far more stringently with the food aspect of the tuberculosis problem, to control not only home-bred tuberculous milk and meat but also, to be strictly logical, the meat, cream, butter, and other dairy produce which reach us in such enormous quantities from other countries wherein we can inspect neither the cattle before slaughter nor the udders of the cows from which the milk is drawn.

◆

# Athletic Championships and National Physical Development.

The winning of the Grand Challenge Cup at Henley for the second year in succession by a Belgian crew, the recent victories of Colonial football players, the success of M. Massey at golf, of Mr. Gould at tennis, and of Mr. Brookes at lawn tennis, with other similar incidents of athletic competition, have aroused a correspondence in various newspapers, contributed by writers who for the most part deplore these occurrences as if they were national calamities or symptoms of national physical decay. The coincidence of so many "championships" in athletic games being won within a short space of time by young men and women not of British birth may be without precedent, and to a limited extent may be due to all or some of the various causes which have been assigned to it by the letter-writers referred to—namely, to a growing "slackness" on the part of the British youth, to a tendency to look on at the games of champions, instead of partaking personally in such games without seeking any startling supremacy, or to a recently developed and increasing taste for cigarettes. It is, however, also possible to contend that these causes may have nothing to do with the matter or may only contribute towards it, or even to suggest that the loss of "championships" is not a national misfortune, and in part, at any rate, may be due to causes by no means to be deplored. If the failure to attain supremacy is due to the diminished numbers and deteriorating quality of the mass of healthy adolescents from which the ranks of the champions must presumably be recruited, we have a regrettable fact to deal with, but is it one which can be established? The champion oarsman, or cricketer, or golfer, or tennis-player is a being fitted by nature and educated by constant practice for the position which he and those who applaud him are prone, we suggest, to endow with an exaggerated importance. The falling off, if there be such, in the supply of athletes of championship standard may be due to a growing feeling that the importance of being a famous oarsman, or cricketer, or golfer, is one which, at any rate, is capable of exaggeration, and that those who devote themselves to a game between the ages of 22 and 40 to the detriment of their professional prospects may regret doing so when they compare themselves in middle age with contemporaries whose athletic feats were confined to their boyhood. Athletes of distinction have risen to high positions in after life, but such names as Wordsworth, Chitty, Denman, Brett, Lyttelton, and Reid revive memories of men whose constant and prominent participation in athletics ceased soon after they left college, at the age when a young fellow has to choose whether he will give up a favourite pastime a few years before nature will compel him to do so, or will start in the race of adult life heavily handicapped. We have mentioned the name of the headmaster of Eton and of his brother, the late Colonial Secretary, both among the most famous amateur cricketers of their day, and we might add that of Mr. A. G. Steel, K.C. None can say that these gentlemen, had they devoted themselves for several years to county cricket after leaving Cambridge, would have attained the positions which they now occupy, or can deny that their university degrees, which possibly have not affected their careers materially, would have been higher had not the cares of the University Eleven to some extent diminished the time which they were able to devote to study. After all, does it matter to them now if, after attaining a position in the world of games which their contemporaries will never deny them, they realised in time that a game is but a game and abandoned it in favour of the pursuits of manhood? If we have referred above to the amateur athlete only much of what we have said might be adapted to the case of the professional who early in life is exalted into a social and material prosperity apparently of a highly enviable nature, but who in after years frequently finds himself less well off than if he had applied his muscles and brains otherwise.

We confess that we cannot prove by any evidence that the defeats referred to in our opening paragraph are due to any marked diminution in the general reverence for athletic distinction. At the same time, however, we must point to a lack of evidence that they have been caused by a falling-off in the physical energy of the nation. We have invented certain games, being a people fond of athletic amusement, and others have learnt to play them as well as, or better than, ourselves. Why should they not?

Other races have as much right to possess a supply of healthy young men and young women as ourselves and in some instances do more than we do to secure it. The cultivation of an extreme degree of skill in athletics by those best adapted to exercise it has a tendency to reduce the numbers of the players and to relegate inferior performers to the position of spectators, and even when games are generally played their importance may to some extent be overrated. Improved physical development in the mass of young men and women of all ranks of life who have ceased to be mere boys and girls is not likely to be induced by active exertion in pursuit of a ball on one afternoon of the week when other points necessary to health are neglected. What is known as "physical culture" obtains a good deal of attention from some and the regular performance of well-selected exercises coupled with moderation in food, drink, and tobacco, plenty of fresh air, and a sufficiency of sleep will develop the body without overtaxing it, and will maintain in good health those who would find it difficult to train on the river or to indulge in cricket or in football. Exercise, however, without the excitement of personal emulation or the display of any particular skill is apparently not attractive to the young Briton. Our Volunteer battalions enlist but a small percentage of our young men, who acquire as a rule no great smartness in their drill, although, no doubt, many work hard and derive considerable benefit from it. The organised performance of gymnastic exercises by large bodies of men of the working classes such as takes place in Switzerland and in some other European countries is a form of pastime unknown to us, and we have no compulsory military training to force physical exertion upon those unwilling to undergo it. If we add the Japanese to the Swiss we shall have mentioned two nations who have not contributed to our recent athletic defeats but who might teach us much in the way of developing our national resources of physical strength without waste of time upon that which has no practical utility. We may not be willing as a nation to learn lessons from these but at any rate they may suggest the direction in which our physical training should be guided.

Let us combat "slackness," whether mental or bodily, in our children by all means, in whatever rank they may be born. There are round-shouldered loafers among the boys who cheer their school fellows at Lords as well as among those who flock in tens of thousands to witness a league football match. If it be possible to stimulate these to develop their bodies by exercises suitable to the purpose let us do so, but we need not declare them to be worse than their predecessors in order to show that they are capable of better things. Let us also not forget that the development of their minds is of equal importance with that of their bodies, if they are to become useful citizens and the fathers of a useful progeny. Let us hesitate before we avow a belief that the supremacy of our countrymen in certain games which they have sedulously practised implies national physical preeminence. Still less let us encourage the devotion of the young to the cultivation of physical excellence to the detriment of their future lives as individuals and as members of the community.

# Population and Progress.

MR. MONTAGUE CRACKANTHORPE, K.C., a highly esteemed member of the legal profession, who is also known outside its ranks by his occasional excursions into the domain of sociology, has lately made one of these excursions with much sound of trumpet. He has republished an article on "The Morality of Married Life," which he contributed to the *Fortnightly Review* 35 years ago, has appended to it two others from the same source but of recent date, and two which have not previously appeared, and has issued the whole as a volume under the title of "Population and Progress."[1] The leading idea of the book is that it is the duty of married people to place artificial limits to increase of population; and it is a curious evidence both of the sincerity of the author's beliefs and of their fixity that his essay of 35 years ago does not appear to have been modified in any important particular prior to its republication. There are probably few persons whose minds, with regard to any important social question, could have remained stationary for so long a period, or could even now be so little influenced by the teaching of contemporary events. "Why," he inquires, "is France, where, during the last fifty years, the population has only increased by four millions, *pacific as well as prosperous*, whilst Germany, where the population during the same period had increased by twenty-six millions, is in a condition of unrest?" This was written not 35 years but only six months ago, and is curiously illustrated by the events which have since occurred in the French wine districts.

MR. CRACKANTHORPE is apparently convinced, not only that it is the duty of married people to limit the number of their offspring, but also that, if this duty were acknowledged and fulfilled by the better classes, their example would be followed by the proletariate. He does not appear to have bestowed a thought upon the physiology of the subject, upon the methods to be employed, or upon the possible influence of these methods upon the health either of parents or of children; but he republishes a letter addressed by him to the *Fortnightly Review* in 1872, in reply to questions consequent upon the appearance of his first article. In this letter he very briefly refers inquirers to "physiological laws first enunciated about thirty years ago, and since recast with greater exactness of limitation." He mentions as authorities the treatises of RACIBORSKI (1844) and others, and adds that "M. RACIBORSKI'S latest work (1868), while properly qualifying the absoluteness of his previous conclusions, does not lessen their practical value to the bulk of the community." It would appear from this that in 1872 Mr. CRACKANTHORPE supposed that sterility could be secured by limiting sexual access to the concluding days of the intermenstrual period, but in a note appended to the present re-issue he casts doubt upon the correctness of this belief. He therein quotes, without comment, a German sentence by Dr. AUGUST FOREL, written in 1905, to the effect that conception after intercourse at the period in question, although less probable than at other times, is not excluded, and that those who trust to the supposed rule may be much deceived (*schwer enttäuscht*). Mr. CRACKANTHORPE supplies no substitute and gives no farther information or guidance to his disciples. That they will indeed be liable to be much deceived is, we think, well within the probabilities of the case. If a healthy man and woman, of procreative ages, are living together *maritalement*, it is evident that the births of successive children can only be prevented by complete or partial abstinence from intercourse (the latter, according to Dr. FOREL, being but an imperfect precaution), or by the use of artificial methods for the prevention or premature termination of pregnancy; and it is time that Mr. CRACKANTHORPE, and others like him, who desire to bring about the end, should not only be explicit with regard to their choice of means, but should also be prepared for any indirect consequences which resort to these means may entail. It is possible, of course, that a husband and wife of a certain temperament may agree to practise abstinence; but the question is one which would seldom be discussed before marriage and which might easily lead, not only to grave unhappiness, but also to infidelity, in the event of subsequent disagreement with regard to it. The privileges of the husband, so far as the marriage bed is concerned, have perhaps never been questioned by any important authority; and the claims of the wife to payment of the conjugal debt, which have been explicitly upheld by many legislatures, notably by those of the Athenians and of the Jews, will also, we think, be upheld both by physiology and by the moral sense of the great majority of mankind. It is manifest that abstinence would destroy the apostolic antithesis between "to marry" and "to burn," by rendering it possible, or even customary, to do both; and we believe that the great majority of married folk would not materially limit the number of their children by any course short of complete abstinence. As for other devices, the procuring of abortion is both a criminal offence and a source of immediate danger to life, and gynæcologists can testify as to the likelihood of disease being set up by practices which aim, on the one hand, at stimulating a natural function into activity and, on the other, at preventing its physiological purposes from being attained.

---

[1] Chapman and Hall, 1907.

Mr. CRACKANTHORPE is eloquent upon the neglected state of the children of the poor, upon the ghastly mortality which prevails among them, and upon the diseased and crippled conditions which too often afflict the survivors. All these evils are undeniable; but they arise not so much from the birth of children as from the environment in which they are left by the permitted ignorance of their parents and by the defective sanitary administration of the State. Among children, as among all young animals, there must be a certain proportion of weakly individuals, not well calculated to survive, and the mortality of the first year of life must always be in excess of that of later periods, when the dangers besetting infancy have been escaped. But the excessive early mortality, which is justly regarded as a matter of national reproach, is largely an urban phenomenon, consequent upon remediable external conditions. During the ten years 1891–1900 the infantile mortality of England and Wales was 153 per 1000; but it ranged from 102 in Wiltshire and Dorsetshire to 160 in London and 179 in Lancashire; while out of the 153 for the whole country 44 deaths per 1000 were due to "wasting diseases" and 38 per 1000 of these occurred within three months of birth, while nearly half of them were attributed to debility or prematurity, the children possessing too feeble a vitality for the maintenance of an independent existence. It is well known that of children born prematurely between the end of the sixth and the middle of the ninth month more than two-thirds die before they are brought into the world, and less than one-fifth of the rest survive longer than a month. Moreover, in considering the effect of urban surroundings, it is well to remember that less than 60 years have elapsed since SIMON wrote of the City of London that "in houses containing all the sanitary evils which I have enumerated—undrained, and waterless, and unventilated—there are swarm of men and women who have yet to learn that human beings should dwell differently from cattle; swarms to whom personal cleanliness is utterly unknown; swarms by whom decency in their social relations is quite unconceived; women suffering travail in the midst of the males and females of three several families of fellow-lodgers in a single room; and, generally, people who are suffered to habituate themselves to the uttermost depths of physical obscenity and degradation." It is true that great changes for the better have since been wrought; but the effects of the conditions described by SIMON must endure much longer than the conditions themselves, and many generations must pass away before large sections of our urban populations can possess adequate conceptions of the requirements of health and decency. If Mr. CRACKANTHORPE were to carry his survey of Germany a little beyond the "unrest" which he attributes to a superabundant population, he might observe a people who are sufficiently educated to understand the value of scientific truth, industrial populations who are cleanly in their persons and apparel and comfortable and orderly in their homes, and parents who are successful in rearing and educating the children of whom he and those who think with him would deprive them, and who may often be the support and comfort of their declining years. It must not be forgotten that Mr. CRACKANTHORPE addresses his advice primarily to the more intelligent classes of the community, and that for them to follow it would be to diminish the number of their offspring both absolutely and relatively. Their comparative childlessness, like the celibacy of the clergy in the Middle Ages, would withdraw important intellectual and moral elements from the rising generation, and would afford increased room for a growth of tares by which the harvest of a better humanity would be choked. Among the English middle classes there has long been a sense of the value of the training which the conditions of a "large family" are commonly found to impart; and a very distinguished soldier, administrator, and public servant has lately told the readers of his "Memories" that he had the great advantage of growing up with ten elder brothers and sisters to teach him his place, and with eight younger to reconcile him to the inevitable supersession of seniors by their juniors. The lesson is, we think, at once a more moral and a more hopeful one than that which Mr. CRACKANTHORPE would inculcate.

# Annotations.

"Ne quid nimis."

## SOME INSTANCES OF UNSCIENTIFIC ADMINISTRATION.

An article in our contemporary *Nature* for June 13th under the above heading by Professor Ronald Ross deserves to be read widely, if it be only to inform the public what large opportunities exist in India for the successful prosecution of research into the cause, nature, and cure of diseases which yearly exact a toll of many thousands of lives; how in the Army Medical Staff there are hundreds of able men with abundant leisure and eager for employment, who having been taught in our universities and medical schools, are familiar with the use of the microscope and thoroughly competent to understand its revelations; how funds are set aside and accessible for any reasonable demand; and yet how, with opportunities, men and money forthcoming, little encouragment has been given in the past to lines of investigation which, had they been promoted and the workers encouraged, might by this time have resulted in the prevention of scourges like plague and malaria. Professor Ross's article is a scathing indictment directed against the authorities, both civil and military, for their want of support in regard to those who were found self-sacrificing enough to pursue researches on the diseases of hot climates, which differ materially from those of a temperate zone, and to emulate such work as that of Lewis and Cunningham. For such men even leave of absence was grudgingly given or altogether refused. "The officers of the Indian Medical Service had and have leisure and opportunity unparalleled. A microscope, a few test-tubes, a word from the chief, a little approbation, some evidence that scientific work leads if successful to preferment, and the authorities could have had almost for nothing scores of enthusiastic and, I will expressly add," says Professor Ross, "capital workers for the great cause of medical science. But the pigeon-holed report and the official snub awaited us and we returned disappointed to our idleness." Professor Ross dwells upon, and criticises severely, what, as an officer of the Indian Medical Service, he terms the brainless character of much of the administration. He records that he once asked his chief if he would like him to investigate fevers during his abundant leisure. It will scarcely be credited that the answer given was that his "duty was *not* to investigate but to cure—as if we could do the second without the first," and Professor Ross's experience was only that of many others. He states that not only were leave and opportunities for study reluctantly given but that the heads of the medical department were remiss in obtaining the most recent scientific literature. Sprue, ankylostomiasis, beri-beri, various forms of fever, guinea-worm, and other parasites received little official attention. He makes some surprising revelations in regard to malaria. About one-third of the admissions into hospital are due to this disease and it causes a mortality, directly and indirectly, possibly of some millions a year in India, while nothing does more to hamper military, engineering, and agricultural undertakings. Its cause was discovered by Laveran in 1880, enabling an accurate diagnosis to be made promptly. But with the exception of Vandyke Carter's confirmation in 1887 literally nothing of consequence was done on the subject in India for 15 years, though the Italians and others were publishing numerous researches. Not only did these momentous advances seem to be unknown to the authorities but they were almost entirely neglected in the hospitals and not even the necessary microscopes were provided—equivalent to a failure to supply surgeons with instruments. Professor Ross was himself asked as recently as 1905 by a rich native Rajah to investigate the malaria of his domain and his expenses were guaranteed, but the presiding Civil Service genius vetoed the suggestion. He instances, in addition to his own case, that of King who many years ago prepared a good vaccine and was rewarded by being deprived of his appointment for attempting to disseminate small-pox, whilst the same fate befell Haffkine in consequence of tetanus erroneously referred to his plague prophylactic; reference to this occurrence of tetanus at Mulkowal is made by Professor W. J. R. Simpson in the Croonian lecture which is published at p. 142 of our present issue. Professor Ross refers to the ignorance of the authorities in regard to the nature and means of prevention of the spread of plague in India, when introduced into India from Hong-Kong, which has caused the death of over five millions of people since 1896.

## THE METROPOLITAN HOSPITAL SUNDAY FUND.

Sir William S. Church presided at a meeting of the distribution committee of the Metropolitan Hospital Sunday Fund which was held at the Mansion House on July 12th. The committee reported that £43,000 were available for distribution, being the smallest amount raised in recent years. For the first time since 1899, in consequence of the death of Mr. George Herring, the Fund has been deprived of an annual contribution which varied from the sum of £10,000 to £12,000, but the committee believes that the Fund is likely to benefit by a portion at least of the interest of the residue of Mr. Herring's estate. One regrettable feature of this year's collection is the considerable decrease in the offertories at some of the West-End churches. This, of course, clearly points to the growing custom among the well-to-do of spending the week-end in the country, a custom which will certainly not diminish with the increasing facilities for quick locomotion. Year by year we have urged those who spend their Sundays out of London to remember the needs of the hospitals none the less and to send their contributions in their absence, but this year, at any rate, our words seem to have fallen upon deaf ears.

## STREET ACCIDENTS AND FIRST AID.

The report of the Chapter General of the Grand Priory of the Order of St. John of Jerusalem in England for the year 1906 is a document of some interest, especially that portion of it which deals with the work of the St. John Ambulance Association. The central executive committee of this department states with regard to the number of accidents which happen in the streets of our large cities from time to time that in Manchester during the year 1906 3000 cases of sudden illness or accidents occurred in the streets and received prompt aid at the hands of the police. The average number of persons requiring first aid in the streets of Manchester has exceeded 2000 a year for many years past. In the City of London the number of accidents caused by horses and vehicles numbered 1330, involving six deaths. In the City police force the possession of a St. John certificate is a *sine quâ non* for membership and the case is reported of a constable who, fracturing his shin as the result of a fall, called upon the bystanders for handkerchiefs and wood, rendered first aid to himself, and was told by the hospital surgeon who afterwards attended to him that he had probably prevented a compound fracture. Consequent on the enormous quantity of traffic in the metropolitan area the number of street accidents appears to be steadily increasing. As reported by the metropolitan police these accidents amounted in 1891 to 4766; in 1901 they reached 7995, an increase of a little over 42 per cent. in ten years. In 1903 they amounted to 10,363, an increase of over 25 per cent.

in two years and of the 10,363, 154 were fatal. These and other figures quoted in the report show that a real necessity exists for an extension and improvement in our street ambulance service. We have on many occasions called attention to the matter and the reports of meetings of the Metropolitan Street Ambulance Association, of which Mr. Reginald Harrison is the president, which have appeared in our columns, together with the correspondence relating to the subject, show that the medical profession has done its best to awaken the public interest in a matter which deeply concerns them. In a letter which Mr. Harrison addressed to us as recently as June 29th he pointed out—

> (1) That the present position for dealing with such accidents and casualties in the streets is admitted to be inadequate and obsolete and that an unnecessary amount of mortality and physical suffering is thereby permitted to continue; (2) that though the better organisation of existing ambulance provision may to some extent improve matters a more extended system of first aid by the police or others who may undertake this duty, as well as improvements in signalling and in appliances and forms of ambulance are absolutely and urgently needed; (3) that no service for London can be regarded as efficient that does not include a proportion of rapid transit ambulances, motor or horse, capable of communicating immediately with accidents when authoritatively requisitioned by telephone or otherwise and containing, if required, necessaries for first aid attendance; in fact, in special circumstances and urgency reversing the order of things and bringing the hospital, so to speak, to the patient in the street.

The rapidly increasing traffic in our streets, especially motor traffic, makes it imperative that action should be taken with as little delay as possible. A Home Office inquiry relative to ambulances is now proceeding and every possible support should be given to the Metropolitan Street Ambulance Association in its endeavours to promote a more efficient service for the many thousands of accidents that occur annually in our streets. The secretary of this association is Dr. Arthur W. James, 69, Gloucester-terrace, Hyde Park, London, W.

## THE "SIMPLIFIED EXPERT ALIENIST."

IN the second number of Vol. VIII. of the *Journal of Mental Pathology* (New York) one of the editorial articles deals with the partisan expert, an individual not uncommonly found in important murder trials. In this article we read that "the business of the simplified expert alienist" consists in simplifying the science of psychiatry. His definitions of mental derangements are strictly *sui generis* and cannot, therefore, be found in any of the writings of standard authors. "The field of activity of the 'simplified expert alienist' is in the court-room, where he may appear for the purpose of making it possible either for sane gentlemen murderers to escape the penalty of the law or for chronically insane gentlemen murderers to escape being landed in an asylum for insane criminals." The Penal Code (Section 20) for the State of New York reads as follows: "An act done by a person who is an idiot, imbecile, lunatic, or insane is not a crime. A person cannot be tried, sentenced to any punishment, or punished for a crime when he is in a state of idiocy, imbecility, lunacy, or insanity so as to be incapable of understanding the proceedings or making his defence." Now the "simplified expert alienist" so simplifies the nomenclature of mental diseases that such terms as idiocy, imbecility, paranoia, and other specific terms indicative of incurable mental diseases will be non-existent to him and when hard-pressed by overwhelming evidence for an opinion he commonly describes the insane gentleman's mental state prior to the murder somewhat as follows: "not perfectly healthy condition but not insane"; "unstable mentally but not insane"; "not lasting mental state but not insane"; "pathological suspect but not insane"; "on border line of insane instability and normal state but not insane." "All these and similar definitions may apply to the gentleman murderer's mental status *before* the commission of the murder. At the very moment of the murder the insane gentleman murderer may be found, however, to be suffering from a 'brain storm' or a 'brain explosion' and is absolutely insane. But *after* the commission of the crime and at the time of the trial for murder the insane gentleman murderer is perfectly sane." The article concludes with the following remark: "We earnestly hope, therefore, for the sake of equity, public safety, and common decency that the present 'rule of evidence' may be changed in the near future and so perfected as to make it an act of justice to the public on the part of the people's attorney to kick out of court the 'simplified expert alienist' if he happens to appear therein in the rôle we have described and neatly to kick him into jail if he happens to deliberately attempt to aid and abet crime, criminality, and criminal acts."

## FORCIBLE REDUCTION OF FRACTURE-DISLOCATION OF THE NECK.

A NUMBER of cases has now been recorded of recovery from fracture-dislocation of the cervical vertebræ but very few cases have been published of complete recovery after operation. In the *Journal of the American Medical Association* of June 8th Dr. A. A. Law has reported the following case. A boy, aged 16 years, was looking over the gate of a freight elevator with his chin over the edge. The elevator descended striking him on the back of the head. At the same time the gate ascended striking him in the region of the larynx. He was taken to hospital where Dr. Law saw him 20 minutes later. He was unconscious and rigid and made violent incoördinate movements. The limbs were markedly flexed and there were complete anæsthesia, exaggerated knee-jerks, ankle clonus, and paralysis of the sphincters. Respiration was diaphragmatic, shallow, and slow, and he was cyanotic. The pulse was 120 and thready. The head was forced back out of position and there was a dimple at the back of the neck over the spine of the third cervical vertebra. Palpation of the pharynx showed prominence of the body of the second cervical vertebra, which was dislocated forwards. The boy appeared to be *in extremis* and Dr. Law advised his parents that he should be given the chance of operation but would probably die on the table. He was placed on his back on the table, his head and shoulders extending over the edge. No anæsthetic was administered. While he was held by assistants by the shoulders and body Dr. Law, with one hand under his occiput and the other under his chin, made powerful traction on the head with no other result than to twice produce dislocation of the lower jaw which had to be reduced. Then with a folded towel over the teeth to protect his hand he made traction from this point and from the occiput. Meanwhile an assistant with his fingers in the pharynx pressed out the vertebræ. This was also unsuccessful. Finally, an assistant gripped Dr. Law's wrists and pulled with him. With all their strength they first extended and then flexed the head on the neck sharply and the vertebræ slipped into place. The symptoms instantaneously improved, showing that pressure on the cord had been relieved. The pulse and respiration became quieter, the incoördinate movements ceased, and sensibility returned. The patient was put to bed with the head of the bed raised and a 10 pounds extension weight on the head. Bromide of potassium was administered. Catheterism was performed for the first 24 hours, then urine was passed involuntarily. The temperature for the first ten days ranged from 100° to 102° F., while the pulse was 120. He remained unconscious for 12 days and was fed per rectum for four days. On the seventh day, extension being made on the head, the body was slipped over the edge of the bed and was held by assistants while Dr. Law applied a heavy plaster cast from the hips to the top of the head enveloping the patient completely save his face from the eyebrows to the mouth. This absolutely immobilised the head and shoulders. When the plaster set the extension was removed. He was left in the cast for four weeks. When he regained consciousness, on the twelfth day, the temperature was normal but the pulse still ranged from 100 to 110. When the cast was removed recovery was complete. He was allowed to go about with a simple collar of plaster, more for the purpose of reminding him to be careful than for anything else. A skiagram taken seven weeks after the injury showed that the second intervertebral space, where the dislocation had occurred, was a little more prominent than normal, but the vertebræ were in perfect position.

## NEAT CLOTHES AND CLEAN BODIES.

THE recent honour bestowed upon one who has devoted so many years of unselfish service to those "who have none to help them" was an act of grace which all will approve but we appeal for the elimination of the word "ragged" from the official vocabulary. To speak plainly, we as a nation should be advanced beyond ragged clothes and dirty bodies, yet unfortunately this is a consummation which every thinking observer must admit we have not reached. It is true that, speaking generally, business men, clerks, shop attendants, and others of this class are well dressed and present, as a rule, a neat and attractive appearance which gains approval, but the condition of the working class is nearly always deplorable, and what a contrast does the clever artisan present with his white apron and sleeves rolled up, hard at work: he seems to be the very embodiment of labour triumphant. In the street, however, the same man appears in disreputable garments, an old hat, a seedy coat, completely reversing the spectacle of a neat and tidily clothed person as he is when engaged at his work. Surely there must be something wrong here; an ill-dressed man is depressed, an ill-dressed woman demoralised. Employers might do much to encourage their workers to leave their occupations clean and tidy and every facility should be afforded to them in the shape of bath- and dressing-rooms of doing so. Quite good clothing can be had cheaply enough and so can soap and water, and these are elements which a man should use to make himself a pleasure to himself and, need it be added, to others also.

## THE DEATH OF SIR WILLIAM PERKIN, F.R.S.

THE founder of the great coal-tar colour industry has not lived long to enjoy the distinctions and honours showered upon him just a year ago, while only last month he received the honorary degree of D.C.L. at Oxford. Sir William Henry Perkin died at his residence at Sudbury, Harrow, on Sunday night, July 14th, from double pneumonia after an illness of four days. Chemical industry and pure chemistry have thus been suddenly deprived of a great leader and an earnest and successful inquirer into the nature of things. Medicine, too, will recognise that it has lost one who did eminent service in its cause, for it is abundantly evident that the discovery of coal-tar dyes has placed in the hands of the biologist and chemist a valuable adjuvant, our knowledge of the great biological processes being extended almost every day as the suitable stain reveals the nature of formation or the arrangement of structure. William Perkin's bent was unquestionably chemistry and he started the practical study of the science at a very early age. How rapidly he gained his knowledge may be seen from the fact that at the age of 17 years he was acting as a private assistant to the great Professor Hofmann in his research laboratory. The world knows now how his great discovery was made. Impressed with the importance of being able to prepare quinine artificially he attempted to make the basic substance aniline his starting-point and accordingly submitted that body to a process of oxidation. The result was the formation of an intense purple colouring matter afterwards known as aniline purple or mauve. Before he was 20 years of age Perkin, with the assistance of his father, proceeded to construct works not far from the house in which he recently died, and there to manufacture the dye on some considerable scale. Later a more remunerative process followed Perkin's discovery of a method for manufacturing alizarin (artificial madder) in bulk. He also turned his attention to artificial indigo and to the synthetic production of perfumes. In pure science his *magnum opus* was the remarkable series of papers read before the Chemical Society on magnetic rotation, the application of which has done much to elucidate the composition of compounds and their molecular weights. Perkin was born in 1838, was twice married, and leaves a family of four sons and three daughters. Two of the former are well-known chemists.

## VINCENT'S ANGINA.

SINCE Vincent in 1896 described the peculiar form of ulcerative sore-throat which is now usually called after him, a number of cases of that condition have been recorded and several interesting papers have appeared. In this country the disease has been recognised and carefully worked out by Dr. H. W. Bruce[1] who describes two types—a mild diphtheroid form which is generally superficial, limited in extent and unilateral, and is not associated with swelling or injection of the fauces, and an ulcero-membranous form in which the condition spreads rapidly and is much deeper in its extent. There is a slow separation of the slough in from ten to 14 days with extensive destruction of the tonsil or uvula; in some cases glandular enlargement occurs but never goes on to suppuration. The condition may be so severe as to cause septic pneumonia and death, while, according to Mayer, endocarditis is an occasional sequela. The lesion differs from that of diphtheria, which it may resemble very closely, in that there is no formation of a false membrane as in that disease but a necrosis of the superficial layers in the part affected with the formation of an ulcer. As described by Vincent, a fusiform bacillus and a spirillum are found in this condition; the former has been regarded by Sir A. E. Wright[2] as having affinities with a trypanosome, while the latter is considered by many pathologists to be a normal inhabitant of the buccal cavity and to become pathogenic only in the presence of other micro-organisms. Dr. J. Douglas Blackwood[3] records seven cases of this condition observed in the Children's Department of the Philadelphia Hospital during the summer of 1904. Smears were made from the throats of 21 children attending the department, of which nine gave positive results. Of these nine, seven were of the superficial or mild diphtheroid type of Bruce; the other two were healthy children, in one of whom both organisms were present, in the other the bacillus fusiformis only. The actual cases of the disease began with a sudden rise of temperature, reaching 103° F. in one instance. The course of the fever was irregular and in all cases it fell by lysis. There were few constitutional symptoms, except in one case, in which the child was comatose for the first four days of the attack. The parts affected in these cases were the lips, the tongue, the gums, the cheeks, the tonsils, or the pharynx, but in none of them was there marked destruction of tissue; nor was there glandular enlargement, except that which had been present before the onset of the disease. In all of them the fusiform bacilli were present in greater numbers than the spirilla. The duration of the attack varied from four to 22 days. An interesting case of the same condition, in which the ulceration was confined to the larynx, is recorded by Dr. F.

---

[1] THE LANCET, July 16th, 1904, p. 135.

[2] THE LANCET, July 9th, 1904, p. 73.

[3] Proceedings of the Pathological Society of Philadelphia, vol. ix., 1906.

Reiche of Hamburg,[4] who states that a primary laryngeal case had not been recorded previously. The patient was a painter, aged 39 years, with a condition in the larynx very similar to that seen in the pharynx in Vincent's angina. The mucous membrane presented a thick, yellow, membranous infiltration in certain parts, but with very little irritation of the tissues around and with no enlargement of the lymphatic glands. The process spread for a few days and after separation of the pseudo-membrane a superficial ulceration of the mucous membrane was left which healed completely. There were not at any time any urgent symptoms although the vocal cords were involved, the chief clinical features being hoarseness and cough with abundant thin, watery expectoration. Fever was at first moderate; on one occasion the temperature rose to 39·8° C., but it fell to normal and remained there before the condition had ceased to spread. No diphtheria bacilli were discoverable either in the pseudo-membrane or in the expectoration, while the fusiform bacillus was present in great numbers. The spirilla usually found in association with it were not discovered in this case. Other interesting features were the protracted course of the disease in this instance and the occurrence of severe complications. At the height of the disease nephritis developed and later peripheral neuritis supervened, with paralysis of accommodation, weakness of the lower extremities, and some laryngeal paresis. The case is noteworthy not only because of the rarity of primary laryngeal implication but also because of the absence of spirilla and the marked similarity in the sequelæ to those of diphtheria, for which it would doubtless have been mistaken but for the careful bacteriological investigation.

## A NEW ROMAN OCULIST SEAL.

TWO Roman oculist seals have been discovered during 1905 and 1906 which bear somewhat fuller inscriptions than usual and which deserve notice in our columns. The first was found at Este, in Italy, and will not now be further referred to here because the discussion as to the correct translation of part of its text is still proceeding. The second seal comes from Reimersheim, near Mulhouse, and has been edited by Commandant Espérandieu who numbers it as 222 of the known seals,[1] the series of signets given by him in the Berlin Corpus of them in 1905 having terminated with number 219. The seal bears the name of two oculists, probably a proof of medical partnership, of which several instances have occurred previously. For instance, a seal preserved at Gotha belonged to T. C. Apollinaris and to Q. C. Quintilianus. The names upon the newly found specimen are Caius Julius Potentinus and Aurelius Amphio. Both names are new and nothing is known about their owners. The inscription graven respecting their favourite collyria runs as follows: "C. I. Potentini. Collyrium crocodem. Collyrium Stactum crocodes ad claritatem. Diamisus ad veteres cicatrices. Aureli Amphio Penicille ex ovo." Unfortunately this text does not afford any new scientific information, for all these collyria and terms for maladies have been exemplified upon signets found earlier. Crocodes was saffron and the herb is undoubtedly indicated by many, if not all, of the occurrences of the word upon oculist seals. But a French medical author has stated that often the saffron employed by the Roman oculist was not the vegetable product but what was entitled "Saffron of Mars," a name derived from its colour, and that it was really a hydrated oxide of iron. As metallic ingredients were especially popular with the seal owners this suggestion is possible. But, on the other hand, they certainly used the vegetable saffron as a remedy. Galen in his Περὶ συνθέσεως enumerates various collyria containing true saffron. The finest specimens of the plant for medical purposes, Celsus and Pliny assert, came from Sicily, though Dioscorides states that Sicilian saffron was not so powerful as that grown elsewhere. The great use made of it for medical purposes is proved by his devoting a special chapter to it. Marcellus and Aetius also allude to its use by oculists. Upon oculist seals it is stated to be efficacious against many forms of disease of the eyes, such as trachoma. Upon a seal found at Ratisbon it is styled *Crocodes regium tetrapharmacum.* It is mixed in collyria with misy, copper, and Judean balm. In this inscription it is united with stactum, or oil of myrrh, an ingredient presented upon more than 50 oculist seals. Here it is advised "ad claritatem," merely meaning to produce clearness of vision, just as some marvellous collyrium of green colour, styled Chloron, was by a certain G. Tittius Balbinus said to be useful "ad expurgationem et repletionem." The third collyrium, diamisus, is almost certainly sulphate of iron and the cicatrices which it cured were diseases of the cornea, but in some cases where the words "ad cicatrices" alone are used they may have been intended to promise that the ingredients would tend to cicatrise ulcerations and so to ease or to cure them, for Pliny vouches for a certain eye powder as producing such results. Penicillum was a species of fine sponge. Pliny in his "Natural History" speaks of it. It is nearly always on the seals qualified by the epithet "lene," or gentle. The mixing with the white of an egg has previously been found upon a seal associated with "penicillum lene," and it is advised to be used with incense, a decoction of rose leaves and nard, upon the oculist seals.

## PNEUMATURIA.

THOUGH pneumaturia has been described so long ago as 1671 by Raciborsky its literature is still scanty and its investigation far from complete. In the *Boston Medical and Surgical Journal* of June 13th Dr. A. E. Taussig reported the following case. A coloured woman, aged 34 years, had carcinoma of the cervix uteri which involved the vagina and left parametrium. Panhysterectomy and removal of the parametrial connective tissue were performed. As usual after such operations she was unable to micturate and catheterisation was necessary. The urine was normal. On the sixth day after operation it became cloudy and on the following day when the catheter was introduced the urine was expelled with bubbles of odourless gas. First, a varying quantity of turbid urine was expelled, then puffs of gas interrupted its flow, and finally a quantity of frothy urine was passed. The pneumaturia continued for ten days, during the last few of which the power of micturition was regained. Under boric acid irrigation the cystitis gradually ceased, but two months later it recurred and continued until death from recurrence of the cancer. At the necropsy the bladder showed only the characters of chronic cystitis and no communication with the rectum was found. The urine during the period of pneumaturia was faintly acid. It contained pus but no sugar. Cultures of the urine on agar, aerobic and anaerobic, showed only one microbe, a thick bacillus with rounded ends, often so short as to resemble a micrococcus. It was slightly motile, produced no spores, and did not retain Gram's stain. It grew readily on all ordinary media. In neutral red glucose agar and in nutrient agar and gelatine gas was produced. But attempts to imitate the intravesical formation of gas by inoculating normal urine or the patient's urine failed—an experience which is similar to that of other observers. Attempts to analyse the gas were only partly successful; the presence of carbonic acid was ascertained. There are two forms of pneumaturia. One is due to the passage of gas from the rectum into the bladder by a fistula or, more usually, to the passage of fæcal matter containing microbes which cause intravesical putrefaction and formation of gas. The other and more important form is due to fermentation of the urine. This form may be divided into two varieties, diabetic and non-diabetic. In the former glucose is fermented by yeast or, more usually, the colon bacillus with the production of carbon dioxide. In the non-diabetic variety the albuminous urine of cystitis is fermented with production of carbon monoxide and hydrogen. It is this form which is of chief clinical and bacteriological interest to-day. Only eight cases have been satisfactorily investigated from the bacteriological standpoint. In three cases the organism was the bacillus lactis aerogenes, a microbe closely resembling the bacilli of the colon group but characterised by the production of slime, capsule formation, and production of gas on all ordinary culture media. Four cases were due to the colon bacillus or a closely related organism. The organism present in Dr. Taussig's case belonged to the group of colon bacilli, but it resembled the bacillus lactis aerogenes in that the first few generations on artificial media produced gas. Some bacteriologists hold that this organism is closely related to the colon bacillus. The albuminuria of ordinary cystitis and the ordinary colon bacillus do not appear to be sufficient for the production of pneumaturia. Otherwise the condition would be much more frequent than it is. The urine must contain some unusual albuminous constituent or some special strain of colon bacillus. In most of the cases of pneumaturia there was some interference with micturition. Treatment must be directed against the underlying diabetes or cystitis.

---

[4] Münchener Medicinische Wochenschrift, 1907, No. 17.

[1] Bulletin de la Société Nationale des Antiquaires de France, 1906, p. 148.

## THE TENURE OF OFFICE OF MEDICAL OFFICERS OF HEALTH.

WE drew attention a few weeks ago to the urgent necessity for placing medical officers of health in the provinces upon the same terms as regards their appointments as their metropolitan and Scottish colleagues. We suggested to the President of the Local Government Board that he should at any rate make the appointments non-lapsing of medical officers of health of combined districts who devote their whole time to their duties. We have soon been provided with an illustration of the way in which a district council may take advantage of the present system of short term appointments and perpetrate an injustice not only to an individual medical officer of health but to the public health service generally. Mr. Charles Wills has been for 28 years medical officer of health to several districts in Nottinghamshire. He has been re-elected by each sanitary authority for periods of one year and when his re-election was recently considered by the Southwell rural district council a motion was carried by a majority of two that his salary should be reduced from £214 per annum to £107. The only apparent reason for this extraordinary action of the council appears to be that the Local Government Board, after perusing Mr. Wills's annual reports, has recommended the appointment of an additional sanitary inspector. This new appointment costs the district £100 a year and it appears quite just to the majority of the members of the district council that Mr. Wills should be made to pay for doing precisely what he is required to do by the Orders of the Local Government Board—namely, to report upon the sanitary circumstances of the district. It is difficult to believe that the central authority will sanction the proposal of the Southwell council. The salary which Mr. Wills has hitherto been receiving is by no means exorbitant considering the size of the district, 177,484 acres and its population of 19,000 persons. The members of the council appear to have very little idea of what would be adequate remuneration for the work which has to be done by the medical officer of health, for at the last meeting of the council one gentleman made the extraordinary statement that £214 was a fair figure for a medical man to give his whole time in one district. If this view is held to any great extent by members of other sanitary authorities throughout the country it is not surprising that rural district councils should have received such sweeping condemnation as that to be found in the report of Sir John Dickson-Poynder's select committee upon the housing of the working classes.

## ROYAL SOCIETY OF MEDICINE.

WE are informed that proposal forms for candidates for election either as Fellows or as Members of one or more of the society's sections are now ready and can be obtained upon application to the secretary, 20, Hanover-square, London, W. The library of the Royal Society of Medicine will be closed on Thursday, August 1st, and will probably remain closed until the end of September in order to allow time for the considerable alterations that will have to be made in view of the increased use of the library which is anticipated.

## THE INCOME TAX REDUCTION LEAGUE.

WE have received a circular letter from the general committee of the recently formed Income Tax Reduction League with a request to give publicity to its purposes. Since the medical profession as a body feel the burden of the tax especially heavily, we have pleasure in stating the objects of this league and we wish it success in their attainment. The committee's letter states that:

> The Income Tax Reduction League has been formed because we feel that the time has arrived when this tax should no longer be maintained at a war rate. The income tax is essentially an emergency tax and we consider the prolonged maintenance of the tax at a war rate to be unsafe from a national point of view, unwise from the revenue point of view, injurious to our trade and industries, and unjust to a large body of the citizens of this country.
>
> The league is a non-party body. Its objects are to unite the forces of income tax payers of all parties and of either sex in one strong association whose efforts to effect reform in the income tax will not lightly be ignored by any Government. The specific purposes of the league are: (1) to organise income tax payers for purposes of self-defence: (2) to impress upon our countrymen the necessity for a substantial reduction of the rate; and (3) the restriction of income tax to profits actually received by shareholders or by individual traders and to exempt depreciation funds from the operation of the tax.

Subscriptions are invited from sympathisers, which will be received by the honorary treasurer of the league, care of Messrs. Robarts, Lubbock, and Co., Lombard-street, London, E.C., or by the honorary secretary, 2, Cloisters, Temple, London, E.C. The president is Lord Avebury and Mr. Hallett Fry is acting honorary secretary and treasurer.

## THE TREATMENT OF SUPPURATIVE PYELITIS BY LAVAGE OF THE RENAL PELVIS.

WHEN a purulent pyelitis does not yield to internal medication, if such a happy result ever follows medicinal treatment, there are only two courses open to the surgeon: he may either open the renal pelvis by an incision in the loin and then treat it by local applications, or he may wash out the pelvis of the kidney by means of a ureteral catheter. When possible the latter is the better method, but ureteral catheterisation is by no means easy. Kelly in 1894 was the first to show that it was possible to wash out the renal pelvis by a catheter passed into the ureter, but all his work was done in women, and catheterisation in the male is much less simple. Dr. Winfield Ayres of New York has obtained the best results by employing a direct-view catheterising cystoscope, which he devised, and in the May number of the *International Journal of Surgery* he describes six cases in which he has used this method. The results varied with the condition present; when no real kidney substance was left only slight improvement occurred, but when the suppurative process had only affected the kidney itself to a small extent rapid improvement or recovery followed. In most of the cases the gonococcus was present and it seems probable that it is the commonest organism giving rise to pyelitis. The solutions employed for washing out the pelvis were nitrate of silver (1 in 8000 and 1 in 5000) and argyrol. Of the six cases two were failures and nephrectomy was the only possible method of cure; the four other cases were satisfactory, three recovering completely. In one case both pelves were affected but the ureteral catheter had to be passed only four times and perfect recovery followed. It is certain that this patient suffered much less discomfort than if the pelvis had been opened by a lumbar incision. In this case no gonococci were found and the more rapid recovery may possibly be connected with this fact.

## EPIDEMIC CEREBRO-SPINAL FEVER.

The fact of the diminished prevalence of epidemic cerebrospinal fever seems now to be well established. In Scotland during the week ended July 13th there were 6 deaths from this cause registered in Glasgow, 4 in Edinburgh, 2 in Leith, 1 in Dundee, and 1 in Paisley. In Glasgow the weekly report issued on July 12th showed that there were at that time 58 cases under treatment. In Belfast during the week ended July 6th there were 10 deaths registered as being due to this cause.

## AN INTERESTING CASE OF GASEOUS EMBOLISM.

A remarkably accurate and complete translation of an interesting case of gaseous embolism reported by Lieutenant N. Low in the *Journal of the Royal Army Medical Corps* for April last appears in the *Archives de Médecine Navale* for June. The name of the translator is not supplied but he is to be congratulated on his admirable rendering of a language differing in so many respects from his own vernacular. Without being given word for word the precise meaning of the original is conveyed in elegant and idiomatic French. We have been able to detect one slight mistake only. Referring to the body weight lost by the patient the translator in a note says that a stone is equal to 3·628 kilogrammes, and adds that it is the unity employed in weighing meat. It is no wonder that he was led into error. The number of different "stones" used in this country must be most perplexing to a foreigner accustomed to the simplicity of the metric system. It is true that the only legal weight bearing the name is the British imperial stone of 14 pounds, but in various parts of the kingdom stones of other values are in use, as a stone of 24 pounds for wool, 22 pounds for hay, 16 pounds for cheese, 32 pounds for hemp, 5 pounds for glass, 8 pounds for butcher's meat, and in Scotland 7 pounds for oatmeal.

## THE DEATH OF DR. DUPRÉ.

Analytical chemistry loses one of the best of its exponents in the death of Dr. August Dupré, which took place on Monday, July 15th, at Sutton, Surrey. His name came prominently before the public in connexion with the Fenian outrages in the early "eighties" when, as chemical adviser to the Explosives Department of the Home Office, he investigated the explosives and infernal machines employed in the Fenian propaganda. He was also engaged on some important medico-legal cases and was associated with Dr. (now Sir) Thomas Stevenson in the task of detecting poisons which had been criminally administered. Dr. Dupré was an authority on water analysis and did much to render exact the analytical processes concerned. Perhaps his most important investigation in this connexion was that relating to the amount and estimation of oxygen dissolved in waters. He presented a report on this subject to the Medical Department of the Local Government Board in 1884, and one interesting conclusion was that in the vast majority of cases the consumption of oxygen from the dissolved air of a natural water is due to growing organisms and that in the complete absence of such organisms little or no oxygen would be consumed. Dr. Dupré added considerably also to our knowledge of the chemistry of wines and spirits and was the first to propose a rational method for the estimation of the higher alcohols, or, as they were then called, fusel oils, in spirits. He was at one time public analyst for Westminster and was lecturer on chemistry for over 30 years at the Westminster Hospital Medical School.

## THE CALCUTTA CORPORATION AND PUBLIC HEALTH.

The Calcutta Corporation is engaged in organising its health department, which is not a new departure for seldom does a year pass without some scheme being broached. It is to be hoped that the one now adopted will prove satisfactory, for continual change, or the threat of change, does not conduce to efficiency or to enthusiasm on the part of the department concerned; nor does too frequent criticism of a hostile character help a department to do its best. Praise, even when it is seldom and when well deserved, has often a more powerful effect. Good pay and fixity of tenure, two important conditions which the munipality is rather inclined to ignore, will always secure good men, and with these granted it is pretty certain that the most serious difficulties confronting the health administration would disappear. Into the merits of this new organisation scheme we cannot enter, because from the papers before us it is not very clear whether it is merely an amalgamation of the hitherto separate plague department with the health department under the health officer or whether it is the abolition of the plague department and the transference of these duties to the health department. If it is the latter we think that the corporation is making a great mistake. The city of Calcutta is not only the capital of India but it is also the great commercial centre of that part of India. It is of the highest importance, therefore, that plague should be kept under control, for if this disease by any relaxation of effort should gain a further hold on Calcutta and become epidemic the loss in lives and in money would be great. The amount of money expended annually in maintaining a plague department is microscopic compared to the losses which would be incurred in a week's time in consequence of an epidemic in such a prosperous city as Calcutta.

## THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

The Second International Congress on School Hygiene will be held at the University of London from August 5th to 10th under the presidency of Sir Lauder Brunton. We have already expressed the hope that the results of its labours will be a more general recognition on the part of the public of the fact that the mental and physical condition of children must be taken into consideration in connexion with any scheme of primary education. Science has already recognised the folly of educating children at the expense of their bodily and mental health, but a strong public opinion is needed before any legislation can be expected. The public are, we believe, beginning to see the necessity for some alteration of the present system of education and the Government has displayed great interest in the matter, even though it is possible to suggest that not much has been done as yet. On July 15th, in answer to a series of questions in the House of Commons, Mr. McKenna said that the Board of Education was greatly interested in the approaching Congress on School Hygiene and had intimated its intention of sending three of its officers to attend the Congress. He hoped, he said, to derive much information from its proceedings and he had done his best to facilitate its deliberations by arranging for special investigations and reports to be prepared in elucidation of some important matters which would come under discussion. The Foreign Office had already forwarded special invitations to foreign Governments and a considerable number of delegates had signified their intention of attending the Congress. In addition to the accommodation which the University of London was providing for the Congress he (Mr. McKenna) was also placing certain rooms at South Kensington at its disposal. Sir Lauder Brunton has not a high opinion of the practical sympathy of the Board of Education, which he describes in a letter to the *Times* as being limited to a small donation in money—this being in direct controversion of the statements of the Minister of Education. We hope that Sir Lauder Brunton is wrong in his estimate of the capacities both for work and sympathy of the Board of Education.

THE Department of Public Health of Queensland in a bulletin dated June 1st states that for the week ending on that date there were 3 new cases of plague notified after an interval of 43 clear days since the last case notified on May 27th. The three cases were as follows: Case 31, a schoolboy, aged 12 years, notified only after death; Case 32, a male, aged 16 years, attacked on May 24th; and Case 33, a male, aged 17 years, attacked on May 27th. The two latter cases were both employed in a hotel. Another case, that of a girl, aged 12 years, was reported from Ipswich, near Brisbane, on May 23rd. Port Douglas is now considered as free from plague. As regards the Cape Colony, the medical officer of health of the colony states that for the week ended June 22nd 1 case, that of a European female, was discovered at King William's Town. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on July 12th states that for the week ending July 10th there occurred 1 case of plague and 1 death from the disease.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, July 18th, 1829.

### THE PHARMACIE CENTRALE OF PARIS.

THE *Pharmacie Centrale* is no doubt one of the "most beneficial institutions under the superintendence of the Administration Generale." Its object is to supply all civil hospitals, lunatic asylums, prisons, poor-houses, and public charitable institutions of every description in Paris, as well as in the departments, with drugs and medicinal preparations. It is obvious that this manner of proceeding is both simple and economical, and best prevents all adulterations and impositions with respect to the preparing and selling of medicines. Every month the Parisian hospitals send a report to the Pharmacie Centrale of their present supply; the provincial institutions send their reports every other month. The receipts which are transmitted by the different institutions to the "Pharmacie Centrale," serve to check its annual accounts with the Administration Generale. In the year 1822, the amount of its whole expenses was not more than 423,222 francs, which, considering the extent of its operations, will appear very trifling. The institution possesses a large building, with the necessary warehouses, laboratories, &c., and an excellent apothecary's shop, which serves only as a model, no medicines being sold there.

The "Boulangerie" and "Cave Generale," are institutions similar to the Pharmacie Centrale; the latter for the supply of wine, the expense of which in 1822, amounted to 573,532 francs. The "Boulangerie" requires annually 15,000 sacks of meal. During the last 15 years, the amount of its supply was 15,500,000 francs. In 1822, 2,820,064 lbs. of white bread and 4,223,030 lbs. of rye bread were consumed.

# REPORT OF AN INQUIRY AS TO THE EXISTING SUPPLY AND THE PRESENT RATE OF REMUNERATION OF MIDWIVES IN ENGLAND AND WALES.

THE Association for Promoting the Training and Supply of Midwives appointed an advisory committee last year (1906) to consider the whole question of the supply of midwives (especially in view of that part of the Midwives Act that will come into operation in 1910) and to collect the necessary information. The latter function was intrusted to a subcommittee, consisting of Mrs. Wallace Bruce, Dr. C. J. Cullingworth, Mr. A. G. R. Foulerton, Miss Gill, Miss Alice Gregory, Mr. T. Almond Hind (chairman),[1] Miss Lucy Robinson, Dr. E. C. Seaton, and Miss Wilson, with Mrs. E. V. Lucas as honorary secretary. The instruction to this subcommittee was to inquire in the first instance as to what evidence there is of a need for an increased supply of midwives —i.e., for a supply beyond such as is likely to be afforded by voluntary charitable effort and by private enterprise on the part of the trained midwives themselves. The subcommittee was asked to formulate its answer by tabulating the existing information as to (*a*) the number of midwives retiring; (*b*) the number or proportion of untrained midwives on the roll—i.e., of women admitted to the roll within the first two years after the passing of the Act, in virtue of their having been in *bonâ-fide* practice as midwives for the 12 months preceding the passing of the Act; (*c*) the average rate of payment of midwives in private practice, especially in rural districts, and the average number of cases which they attend annually; (*d*) the proportion of rural districts in which it would, and the proportion in which it would not, be possible for a midwife (under existing restrictions as to her following other occupations)[2] to earn a livelihood; and (*e*) the extent to which it may reasonably be expected that the need would be met by existing voluntary organisations. The subcommittee was also asked to obtain further information on these various points where the existing information is inadequate.

It will be seen that the inquiry upon which the subcommittee was asked to enter was of very wide scope and it will easily be understood that the task of collecting and arranging the desired information has been a formidable one. By a careful division of labour, however, a considerable amount of very valuable information has now been collected and (thanks especially to the kindness of Mr. Foulerton who most generously placed his large experience in the compilation of statistical reports at the subcommittee's disposal) has been arranged in tabulated form. The following is a summary of the results of the inquiry as embodied in a report presented to the advisory committee on June 14th, 1907.

(*a*) *Number of midwives retiring.*—On the passing of the Midwives Act of 1902, and especially on the publication of the rules of the Central Midwives Board, large numbers of women in every county of England and Wales signified their intention to retire from practice. Thus, for example, up to the month of October, 1904, out of 106 practising midwives in Cambridgeshire 88 expressed their intention of ceasing to practise, as did 541 out of 582 in Cheshire, 377 out of 417 in the county of Durham, 419 out of 481 in Gloucestershire, 479 out of 553 in Worcestershire, and 725 out of 800 in the West Riding of Yorkshire. Many of those giving up practice were no doubt "undesirables," either on account of their age or of their incompetence; but in some districts this wholesale retirement has left extensive areas of country entirely without midwives and in that way, for the present at least, has occasioned a considerable amount of hardship. It may be mentioned here that the total number of midwives on the roll up to the end of 1906 was 23,278, of whom it is estimated that only about 14,430 are practising midwives, the majority of the remainder being engaged in monthly nursing, &c.

The number of known deaths amongst midwives on the roll during the years 1904–06 was 194; this number is manifestly far below the truth. The deaths must of necessity, owing to the number of aged women enrolled under the "already in practice" clause,[3] be for some time very considerable. The number of midwives struck off the roll during the years 1905–06 was 41.

---

[1] To the great regret of the subcommittee Mr. Hind was unable to attend its meetings or to take any part in its proceedings. In his absence Dr. Cullingworth was appointed to act as chairman.

[2] Rule 1b, Section E, of the Rules and Regulations of the Central Midwives Board reads as follows: "No midwife shall undertake the duty of laying out the dead, or follow any occupation that is in its nature liable to be a source of infection."

(b) *The number or proportion of untrained midwives on the roll*—i.e., of women admitted to the roll within the first two years after the passing of the Act in virtue of their having been in *bonâ fide* practice as midwives for the 12 months preceding the passing of the Act. The last edition of the Midwives Roll which was published in July, 1906, gives the names of 23,278 midwives; of these 12,356 were placed on the roll in virtue of having been already in practice before the Act was passed. If, to the number remaining, is added the number of women who have since been enrolled, in virtue of having passed the examinations held by the Central Midwives Board in June, August, October, and December, 1906, and in February, 1907—viz., 1282—the number thus obtained will represent (approximately) the total number of trained women now on the roll.

The following table showing in respect of certain counties and county boroughs, (1) the population, (2) the number of practising midwives, and (3) the number of trained midwives will convey some idea of the enormous proportion of untrained women at present practising:—

| County, or Borough. | Population. | Number of practising midwives. | Number of trained midwives. |
|---|---|---|---|
| Cardiff | 183,823 | 108 | 22 |
| Cheshire | 629,217 | 435 | 86 |
| Cambridgeshire | 120,150 | 66 | 24 |
| Derbyshire | 524,620 | 400 | 51 |
| Glamorganshire | 467,954 | 573 | 36 |
| Gloucestershire | 321,442 | 269 | 84 |
| Monmouthshire | 230,806 | 197 | 11 |
| Newport | 75,585 | 36 | 13 |
| Plymouth | 120,063 | 36 | 7 |
| Lancashire | 1,774,467 | 991 | 204 |
| East Riding | 148,237 | 26 | 4 |
| North Riding | 250,712 | 60 | 11 |
| West Riding | 1,473,366 | 833 | 134 |
| Shropshire | 239,783 | 342 | 72 |
| Walsall | 94,000 | 47 | — |
| Warrington | 69,153 | 29 | 12 |
| Wolverhampton | 100,867 | 45 | 9 |
| Worcestershire | 385,610 | 407 | 76 |

In addition to the untrained midwives on the roll there is a considerable number of women practising as midwives without being on the roll. Thus, for example, in Berkshire there are about 90 such women practising, and at South Shields (according to the medical officer of health) from 30 to 40.

(c) *The average rate of payment of midwives in private practice, especially in rural districts, and the average number of cases which they attend annually.*—It has been difficult to obtain accurate statistics as to the average rate of payment of midwives, but some trustworthy information has been obtained with regard to certain districts; thus, at East Hoathly, in Sussex, the fee is 7*s.* 6*d.*; at Chipstead, in Surrey, the fee is 10*s.* 6*d.* (a bottle of brandy being also expected); in an agricultural district near Hythe, in Kent, where the wages range from 16*s.* to 20*s.* a week, the old midwives received a fee of 7*s.* 6*d.* and at least one bottle of spirits, to be shared with the patient; and in an agricultural and mining district near Radstock, in Somersetshire (wages being from 14*s.* to 24*s.*), the old fee was 3*s.* 6*d.* for the confinement alone and 5*s.* if the baby was washed during the ensuing week, five or six shillings' worth of spirits being also invariably expected. In these two last-named districts of Kent and Somersetshire the midwife did not cook, wash, or assist in housework. "It would," says Miss Alice Gregory (to whom the committee is indebted for most of the above information), "probably be a fairly accurate statement to say that in rural districts ...... the cost of a midwife's attendance has averaged 10*s.*, although this amount is rarely paid entirely in money. In better-class neighbourhoods of London, as West Kensington and Plumstead, midwives charge a minimum fee of 10*s.*, but in London generally 10*s.* would be more correctly described as the average fee, and in districts near training schools this fee would be unobtainable ......." In Bath the midwife's fee varies from 5*s.* to 15*s.*, attendance on mother and child for ten days being included; but the usual charge is 7*s.* 6*d.* In Manchester the average fee is 10*s.* 6*d.*

The average number of cases attended annually is even more difficult to compute. In a town, where the cases are near together, 200 is said to be a not very unusual number for a trained and active midwife, but the average is considerably below that number. For example, of 212 midwives in London 22 attended more than 300 cases in the year, ten attended between 250 and 300, 12 between 200 and 250, 22 between 150 and 200, 32 between 100 and 150, and the remaining 94 under 100.[4] In Bath one midwife attended about 90 cases, two district nurses attended about 90 between them, 96 cases were fairly evenly distributed amongst three midwives, and 102 were unevenly distributed amongst 24 midwives.

On the question of the average remuneration of midwives valuable information has been furnished by Miss Amy Hughes, General Superintendent of the Queen Victoria's Jubilee Institute for Nurses, which, though not strictly relevant to the inquiry as to the rate of remuneration *in private practice*, nevertheless has an important bearing on the general question, especially in view of the fact that the Queen Victoria's Jubilee Institute is the largest employer of midwives in this country.[5] "The midwives working for the Institute in country districts are not paid by the case," says Miss Hughes, "but are paid a salary. The salaries of the Queen's nurses begin at £30 a year and 'all found'; the salaries of the village nurses range from £45 to £70, and they 'find themselves.' The payment of the patients to the associations varies from 2*s.* 6*d.* to 15*s.* (in Sussex from 1*s.* 6*d.* to 7*s.* 6*d.*; in Yorkshire, from 5*s.* to 30*s.*, and in Herefordshire from 5*s.* to 21*s.*)."

In rural districts generally the number of trained midwives following the occupation of midwife alone is very small. In Miss Gregory's own practice in Somersetshire the largest number that she attended in any one year was 150 and Miss Gregory is of opinion that in any similar district—that is, in a district extending three or four miles from the midwife's house in every direction—that is about as large a number as can be satisfactorily attended. In East Sussex only 20 midwives attended more than 20 cases each per annum. Of these 20 midwives, 14, of whom 12 were in private practice, practised in urban districts and six, of whom three were in private practice, in rural. Of the 12 who were in private practice in urban districts one attended 76 cases, one 60 cases, one 52 cases, and one 50 cases, while the remaining eight attended 246 cases amongst them, an average of 32. The three who were in private practice in rural districts attended exactly 24 cases each. The average number of cases attended in small urban and rural districts by each practising midwife is 18.

(d) *The proportion of country districts where it would, and where it would not, be possible for a midwife following no other occupation to earn a livelihood.*—In reference to this question of the possibility of earning a livelihood Miss Hughes says: "We have no districts [in connexion with the Queen Victoria's Jubilee Institute] that could support a midwife who did no other work and it is our experience that rural midwifery can be quite well combined with 'non-infectious' nursing. In fact, this seems to be the best solution to the rural problem." In a supplementary note to the very valuable statistics which he has prepared and of which a summary will be found incorporated in this report Mr. Foulerton makes the following observations: "This inquiry having been made mainly with the view of ascertaining the means of subsistence available, under the existing condition of things, for properly qualified midwives, we may call attention to the following facts. In the first place the supply of certified midwives is, at first sight and as judged merely by the actual number of births, very much in excess of that required by the demand for their services. The number of certified midwives whose names appear in the last edition of the Midwives Roll (1906) is 23,278, and the total number of births registered in England and Wales in 1906 was 934,391; so that if all the certified midwives were in practice there would have been only about 20 cases for each, assuming that about 50 per cent. of the births were attended by medical practitioners. On the other hand, a number of certified midwives do not practise as such but are engaged only in general and monthly nursing and the returns before us suggest that the proportion of actually practising midwives may be estimated as being about 62 per cent. of the whole number, or about 14,430. And on this estimate there would have been about 33 cases for each midwife actually in practice, representing a gross annual income of about £16 10*s*. Whilst this applies to England and Wales as a whole the demand for the services of midwives varies considerably, as one would expect, in different localities according to the prevailing social conditions. Thus, in Group I. of our tables we find that the average number of cases in the year to each practising midwife is nearly 18. The preceding applies to the state of things in smaller urban and in rural districts; in the large boroughs included in Group III. the average number of cases to each practising midwife rises to 61. We believe that the fee paid to a midwife in rural districts varies between 5*s*. and 10*s*. a case, but rarely exceeds 8*s*.; in towns the fee would appear to vary from 5*s*. to 15*s*., but 10*s*. per case would seem to be a fair average. And under these conditions it is obvious that comparatively few of the midwives who are in practice can be earning a living wage by direct payment from patients. Under the conditions prevailing in sparsely populated rural districts we feel convinced that it is simply impossible for a midwife to earn a living wage, or anything approaching a living wage, unless she is working under a county or other charitable association."

---

[3] For example, out of 346 midwives in Shropshire 99 are between 60 and 70 years of age and 28 are over 70.

[4] There are 490 midwives in London, but of these only 212 sent in lists of births sufficiently regularly to be available for this purpose.

[5] In 1906, 11,502 midwifery and monthly cases were attended by 429 certified midwives connected with the Institute.

Dealing with the same question Miss Alice Gregory, who has herself been in private practice for eight years in a rural district, writes as follows:—

> If we take a 10*s*. fee as the suitable average to be charged in the future and 150 cases as the limit that can be properly attended by one midwife in a scattered country district, it is evident that she can earn £75 (a living wage, though a bare one) in every area where this number of cases may reasonably be expected. 23 in 1000 is a fairly low average birth-rate. Of these the midwife cannot, under the most favourable circumstances, expect to attend more than 18, and of these, some she will attend as a monthly nurse under the doctor (though always on the same basis of daily visits as her other patients). We see therefore that a strong woman, who is a good cyclist and popular with her patients, may anticipate the probability of earning her own livelihood in every district where she can reach a population of 8000 within four miles in every direction from her own home. It will take her from five to ten years to work up such a practice and during that time she will *not* be earning her livelihood but will need assistance.

Almost every medical officer's report seems to show that in spite of a certain economy in numbers which will be made possible when well-trained and more active midwives are employed, the number of cases for each midwife will remain too small to enable her to be self-supporting. It is owing to this fact that in the large and sparsely populated districts the Act is at present being administered so gently. In Manchester there is one midwife to every 3600 persons; in Shropshire there is one to every 700 persons. In Derbyshire the gentlest administration of the Act has been found necessary amongst a very illiterate and unsatisfactory class of midwife in order to retain sufficient women for the needs of so sparsely populated a county. In the rural districts of every county the best is being made of bad material, since it is impossible for the trained midwife to make a living out of midwifery alone.

Having answered the questions submitted to it so far as was possible from existing information the subcommittee, with a view to supplement that information, issued on Dec. 5th, 1906, schedules of inquiries to local supervising authorities. Amongst the subjects of inquiry were: (1) the number of certified midwives resident in the several areas; (2) the number of certified midwives who are actually practising; (3) the proportion of practising certified midwives who are engaged in public and in private practice respectively; (4) the proportion of births attended by medical practitioners and by certified midwives respectively; and (5) the means of subsistence of certified practising midwives. The schedule of inquiries was sent to the 134 local supervising authorities in England and Wales, of which 62 are county and 72 are borough authorities. Replies were received from 40 county and 60 borough authorities. In addition to these, replies were received from various urban and rural local authorities acting under delegated powers in Dorset, Kent, and Lincoln and from the municipal borough of Woolwich. The population of the areas to which these returns apply is estimated as having been 24,413,738 at the middle of the year 1906—i.e., at a time when the total population of England and Wales was estimated by the Registrar-General as being 34,547,016.[8]

Taking the subjects of inquiry one by one the results may be summarised as follows.

1. *The number of certified midwives resident in the various areas.*—The total number of certified midwives returned as resident in the areas concerned (with an estimated population of over 24,000,000) is 12,494; of these, 2948 are trained, 6803 are untrained, and with regard to 2743 no information is given. It may be assumed that the majority of this last group are untrained. These returns, however, are obviously not quite accurate. In some instances the returns give merely the number of midwives who had given notice of their intention to practise within the areas. From the figures given in the last edition of the Midwives Roll (July, 1906) and from other data it is estimated that the number of midwives resident in the areas concerned is probably about 16,600 instead of 12,494 as given in the returns.

2. *The number of certified midwives who are actually practising.*—The total number of practising certified midwives in the areas from which returns have been received is 10,407. This figure is probably correct. Supposing that the number of resident midwives is 16,600 (see preceding paragraph) the percentage actually engaged in practice is 62·6. Some of these attend very few cases, less than half a dozen perhaps in the year.

3. *The proportion of practising certified midwives who are engaged in public and in private practice respectively.*—Out of a total of 10,407, 105 were employed in hospitals, 669 were employed by county, district, and other associations, 148 were employed in Poor-law work, 4128 were engaged in private practice, and with regard to 5357 no information is given. Of this last group it is fairly certain that an overwhelming majority were engaged in private practice.

4. *The proportion of births attended by medical practitioners and by certified midwives respectively.*—Of the 195,774 births occurring amongst an estimated population of 7,227,493 in the areas (Groups I. and III. on Table) as to which closely accurate information has been obtainable, the number returned as attended by medical practitioners is 100,889, or about 52 per cent., and the number attended by certified midwives is 94,885, or about 48 per cent. As the percentage attended by medical practitioners has in some instances been arrived at by crediting *them* with all the births not known to have been attended by certified midwives it is certain that it is over-estimated. The actual proportion of births attended by medical practitioners in England and Wales is probably under 50 per cent. The number of cases attended by midwives varies considerably in different areas, from about 90 per cent. of the total births in one district to "almost none" in others. Speaking generally, the proportion of births attended by midwives is highest in the industrial districts and lowest in agricultural districts.

5. *The means of subsistence of practising certified midwives.*—On this point it has only been possible to obtain very scanty information. Thus no information at all was forthcoming as to 7611 midwives out of the total number of 10,407. Of the remainder 1162 were married women who supplemented their incomes by attending midwifery cases, 706 combined midwifery with other work, whilst 928 made their living by midwifery alone. It must not, however, be supposed that this last group maintained themselves entirely by private practice as a considerable number of them were in the employ of various charitable associations. Of the 7611 as to whom no information is given it is probable that a very large majority are married women who merely supplement their incomes by attending midwifery cases.

The difficulties here shown to exist in regard to the possibility of a trained midwife earning a livelihood in private practice in rural districts are met with also in connexion with the various local associations which are frequently only able to offer very small and inadequate salaries for the services of a district midwife. The association that initiated the present inquiry has been confronted with this difficulty in a form that has occasioned much anxiety, for when it has expended its funds on the training of suitable women as district midwives it has found it no easy matter to place them. "In many cases," says the last annual report (1906), "the barest living is offered, with no possibility of anything whatever being put aside for old age or even the necessary clothing or holidays; and this is supposed to suffice for a woman whose possession of the certificate of the Central Midwives Board shows her to have good abilities and to be fitted for responsible and very arduous work."

---

[8] Returns were also received from Cornwall, Leicestershire, and Southampton, but these being incomplete were not included with the rest.

The object of this report is to furnish information, not to suggest remedies. The matter, however, is urgent and the subcommittee earnestly hopes that some efficient means of overcoming the present difficulties will speedily be devised.

## APPENDIX.

In the accompanying tables the various areas from which returns have been received are grouped together as follows:—

*Group I.* includes eight entire administrative county areas, with a combined population of 2,939,148, from which full returns have been received.

*Group II.* includes 32 entire administrative county areas with a combined population of 11,956,860, from which the returns which have been received, whilst not so full as in the former case, are still of considerable value.

*Group III.* includes 23 county borough areas, with a combined population of 4,288,345, from which full returns have been received.

*Group IV.* includes 37 county borough areas, with a

TABLE I.

| — | Total number of births and number of births per 1000 of population. | | | Number of births attended by medical practitioners and others. | | Number of certified midwives resident in area. | | | | Number of certified midwives practising in area. | Proportion of number of certified practising midwives to population and number of births. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Population. | Total number of births in one year. | Birth-rate. | Attended by medical practitioners and others. | Attended by certified midwives. | Total number returned as belonging to area. | Trained. | Untrained. | Not stated. | | Ratio of practising certified midwives to population. | Ratio of number of practising midwives to total number of births. | Ratio of number of practising midwives to number of births attended by midwives. |
| Group I. (8 administrative county areas) ... ... ... ... ... ... ... | 2,939,148 | 71,738 | 24·4 | 48,275 | 23,463 | 1,581 | 715 | 866 | — | 1,314 | 1 : 2,237 | 1 : 54·5 | 1 : 17·8 |
| Group II. (32 administrative county areas) ... ... ... ... ... | 11,956,860 | — | — | — | — | 7,468 | 1138 | 3953 | 2377 | 6,147 | 1 : 1,945 | — | — |
| Totals for Groups I. and II. (40 administrative county areas)... | 14,896,008 | — | — | — | — | 9,049 | 1853 | 4819 | 2377 | 7,461 | 1 : 1,996 | — | — |
| Group III. (23 county boroughs)... | 4,288,345 | 124,046 | 29 24 | 52,614 | 71,432 | 1,464 | 579 | 667 | 218 | 1,166 | 1 : 3,626 | 1 : 106 | 1 : 61 |
| Group IV. (37 county boroughs) ... | 4.677,883 | 126,943 | 27·13 | — | — | 1,743 | 415 | 1180 | 148 | 1,591 | 1 : 2,943 | 1 : 79 | — |
| Totals for Groups III. and IV. (60 county boroughs) ... ... | 8,966,228 | 250,989 | 27·99 | — | — | 3,207 | 994 | 1847 | 366 | 2,757 | 1 : 3,252 | 1 : 91 | — |
| Group V. (parts of 3 administrative county areas—Kent, Lincoln, and Dorset. Part of London County Council area—Woolwich) ... ... ... ... ... | 424,157 | — | — | — | — | 163 | 40 | 123 | — | 155 | 1 : 2,736 | — | — |
| | 127,345 | — | — | — | — | 75 | 61 | 14 | — | 34 | 1 : 3,745 | — | — |
| Total for Group V. ... ... ... ... | 551,502 | — | — | — | — | 238 | 101 | 137 | — | 189 | 1 : 2,917 | — | — |
| Total for Groups I., II., III., IV., V. ... ... ... ... ... ... | 24,413,738 | — | — | — | — | 12,494 | 2948 | 6803 | 2743 | 10,407 | 1 : 2,345 | — | — |
| Group VI. (3 administrative county areas—Cornwall, Leicester, Southampton) ... ... | 965,840 | — | — | — | — | 613 | — | — | — | — | — | — | — |

TABLE II.

| — | Number of certified midwives in areas. | | | | Number of certified midwives actually practising in areas and their employment. | | | | | | Means of subsistence of certified midwives practising in areas. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trained. | Untrained. | Not stated. | Total. | Employed in hospitals. | Employed by other charitable institutions. | Employed in Poor-law institutions. | Employed in private practice only. | Not stated. | Total. | Midwifery only. | Midwifery with other work. | Married women acting as midwives. | Not stated. | Total. |
| Group I. ... ... | 715 | 866 | — | 1,581 | 4 | 152 | 16 | 447 | 695 | 1,314 | 66 | 155 | 191 | 902 | 1,314 |
| Group II. ... ... | 1138 | 3953 | 2377 | 7,468 | 17 | 396 | 34 | 1563 | 4137 | 6,147 | 110 | 323 | 336 | 5378 | 6,147 |
| Group III. ... ... | 579 | 667 | 218 | 1,464 | 55 | 58 | 62 | 971 | 20 | 1,166 | 354 | 98 | 290 | 424 | 1,166 |
| Group IV. ... ... | 415 | 1180 | 148 | 1,743 | 17 | 51 | 24 | 994 | 505 | 1,591 | 365 | 114 | 286 | 826 | 1,591 |
| Group V. ... ... | 101 | 137 | — | 238 | 12 | 12 | 12 | 153 | — | 189 | 33 | 16 | 59 | 81 | 189 |
| — | 2948 | 6803 | 2743 | 12,494 | 105 | 669 | 148 | 4128 | 5357 | 10,407 | 928 | 706 | 1162 | 7611 | 10,407 |

combined population of 4,677,883, from which the returns received were less ample.

*Group V.* includes various urban and rural areas situated in the administrative counties of Dorset, Kent, and Lincoln (part of Kesteven), and in the metropolitan borough of Woolwich with a combined population of 551,502.

*Group VI.* includes the administrative county areas of Cornwall, Leicestershire, and Southampton.

The populations of all areas are estimated to the middle of the year 1906, the number of births and the birth-rates in the respective administrative county areas are generally those for the year 1905, whilst the numbers of births for the county boroughs are those for 1906 as extracted from the Registrar-General's returns.

## URBAN COTTAGES AND SMALL HOLDINGS IN THE GARDEN CITY AT LETCHWORTH.

THE Garden City at Letchworth, Herts, grows apace and its first inhabitants are beginning to realise that a great town planned on artistic and hygienic lines is being rapidly developed around them. The interest of the public in the question of rural depopulation and urban congestion was stimulated in a practical manner by the Cottage Exhibition which was held in the Garden City in 1905. On that occasion the exhibition was limited to cheap cottages for rural workers and the use of temporary materials for building was permitted. The cottages were isolated and suitable for districts where large areas of land were available.

The present exhibition comprises cottages built under urban by-laws and at prices which will render it quite possible for exhibitors to combine economy with efficiency of construction and a class for homesteads suitable for small holdings. Prizes are offered for four classes of cottages, the cost ranging from £175 to £240, while a further prize is offered for the best artisan's cottage which is not limited as to cost. In regard to small holdings prizes are offered for (*a*) the best cottage with simple outbuildings suitable for small holdings of five acres, the cost not to exceed £200; (*b*) cottage with barn, stable, cartshed, and pigsty, suitable for a small holding of 20 acres of arable land, the cost not to exceed £250; and (*c*) a small holder's house (to contain dairy) with pigsty, shed, and cowhouse for two cows, the cost not to exceed £300. As regards the urban cottages, the conditions were that they must contain larder with outside window, water-closet and bath, and have gas and water fittings ready for connexion and drainage to the main sewer provided. The height of the rooms was to be not less than 7 feet 6 inches. The cottages in the small holdings section were to comply with rural building by-laws and to contain three bedrooms, water fittings, larder, and outside earth closet. The statements as to cost of building are guaranteed by the fact that the condition of entry into the exhibition is that the exhibitor shall, if called upon to do so, sell the cottage to the Garden City Company at the price stated in the catalogue, or shall undertake, if called upon to do so, to build a similar cottage at the same price for the company reasonably near and on the estate. The exhibition comprises over 30 different types of model cottages and will be formally opened by the Marquess of Salisbury to-day (Friday).

Briefly, the exhibition in its urban section is an attempt to show what may be done in an ordinary suburban street of any industrial town. An area of five acres only has been covered by 60 cottage sites grouped along complete streets with all the conditions of various aspects. The question of aspect is, of course, a difficult one when it is required to arrange rows of cottages with east, north, or west aspects in close proximity, but the designing of single cottages with a southern aspect is simple enough. The best, however, has been done, and it is most pleasing to observe the regard that has been paid to artistic effect, to the elimination of monotonous lines, to the economy effected as regards frontage, and to the exclusion of "built-up backs" and long projecting sculleries all conspiring to block out the light and air from the living rooms. Here is a useful demonstration of how the evils of overcrowding may be banished from our midst, of how the solution of the slum problem may be reached, and of how sanitation may be secured for the masses as well as the classes.

Letchworth is growing rapidly as an industrial centre. Already 11 factories have been erected and there are now between 3000 and 4000 people settled on the estate. It is not intended that the garden city shall ever grow to a town of a greater size than will accommodate 35,000 people and when this stage is reached development will stop so far as the city is concerned. When this consummation is attained the busy city will still be situated in an environment of fresh air and light. It must be admitted that the Garden City is a very interesting sociological experiment to which everyone who cares at all for the social and sanitary welfare of all classes, but especially the poorer working classes, will heartily wish success.

## THE HAMPSTEAD GENERAL HOSPITAL.

ON July 16th an extraordinary general meeting of the governors of the Hampstead General Hospital was held in one of the large wards in the recently completed and unoccupied new wing of that institution. We have already recorded the events leading up to the controversy concerning the constitution of the staff of the hospital and the many other points at issue, the chief of which are the question of amalgamation with the North-West London Hospital and the relations of the hospital's council to King Edward's Hospital Fund for London, to the body of subscribers, and to the local medical practitioners. The difficulty of this complicated situation and the vital effect that the solution which is to be adopted will have on the welfare of the hospital are fully recognised by the governors and found expression in a meeting numbering at least 200 ladies and gentlemen, all of whom have at heart the best interests of the institution.

The chair was occupied by Mr. EDWARD BOND who pointed out the gravity of the occasion and reminded the meeting that although it had been convened in protest against the council's action in accepting the terms of the King's Fund for a scheme of amalgamation with the North-West London Hospital and thereby agreeing to the replacement of the staff of local practitioners by one of consultants, yet that the council had acted within its rights as set forth in the articles of association of the hospital in so doing, and that any adverse resolution passed by the meeting would have no legal binding power on the council, although it would doubtless carry great moral weight.

Mr. ERNEST COLLINS, the chairman of the council, then detailed the protracted negotiations that had taken place with the King's Fund and claimed that the council had consistently and loyally supported the present staff and also the best interests of the hospital. He examined at length the financial advantages to the hospital under the amalgamation scheme and stated that at the very lowest estimate, after writing off a liberal sum for the added expense of keeping up the North-West London out-patient department, the Hampstead Hospital will gain a clear increase of £1500 a year income.

The MAYOR of HAMPSTEAD (Councillor C. HENDRICK) then rose to move:—

1. That the practice, hitherto followed, of appointing acting medical officers from among the members of the medical profession practising in Hampstead be continued.
2. That the number of physicians and surgeons on the consulting staff be augmented.

In a vigorous speech, though the vigour would have gained by some curtailment, he criticised severely Mr. Collins' estimate of the added revenues under the amalgamation scheme; he put these at a much smaller figure than £1500 and insisted that the great pride of the Hampstead Hospital was in being a local institution for Hampstead people. They did not, he said, want to emulate the big London hospitals and they greatly preferred in the interests of the patients to have such an excellent staff of local practitioners as they had at present to a staff of consultants who would not be of the first rank and who would live far away. He considered that if the proposed change was made much local support would be lost. He denounced the council for having shown a vacillating spirit and for having submitted too readily to the King's Fund, and accused it of exceeding its duties in having made such a revolutionary change in the hospital's affairs without reference to the body of subscribers. Although the Mayor was interrupted by some adverse ejaculations yet during his speech plaudits were much more frequent, and it certainly seemed that he had the sense of the meeting with him.

Alderman Fleetwood Pritchard seconded the motion.

Mr. Malcolm, the treasurer, speaking in support of the council, said that everything must be subordinate to financial considerations, which Dr. W. Coode Adams on Christian principles warmly denied.

Mr. J. S. Bergheim and Mrs. Meer, on behalf of the Ladies' Association, supported the motion and strongly advocated the retention of the present staff arrangements. They were listened to much more readily than was Mr. C. W. Sawbridge, who spoke no less strongly against it; but at this stage, when the debate was waxing somewhat heated, Mr. Donald Macmillan rose with a pacific suggestion that an arrangement might yet be come to agreeable to all parties. If the motion were put to the meeting it would of necessity cause disastrous dissension in their midst, he said, while he did not consider that there were enough facts before the governors to guide them in voting. He therefore proposed as an amendment that a committee of subscribers should be appointed to inquire and to report as to what course was most advantageous to the hospital and the people of Hampstead, and that it should have power to confer with the hospital council, the King's Fund, and the local branch of the British Medical Association, and that the meeting should stand adjourned until it was ready to make its report.

Dr. E. Collingwood Andrews tried to obtain a pledge from the council that in the interim the amalgamation proposals should be suspended but this was not fully given, although the chairman of the council promised that no more steps would be taken than those to which the council was already pledged.

At the request of the mover of the amendment, who speedily found a seconder, the Mayor withdrew his motion, and after further discussion a committee of six governors, known not to be active partisans in the controversy, was appointed. The amendment on being put to the meeting was carried with two dissentients, several governors abstaining from voting.

*Note.*—In our article on the Hampstead Hospital in last week's issue the sentence concerning the numbers of out-patients should have run: "at the North-West London Hospital there had been an out-patient practice of about 23,000 attendances a year, whilst that at Hampstead did not much exceed 2300." By an error of type the numbers were considerably multiplied, a mistake which must have been immediately perceived by all interested

# ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### Election of President.

A quarterly meeting of the Council was held on July 11th, the President, Mr. Henry Morris, being in the chair.

The President reported the result of the election of members of the Council as already published in The Lancet of last week.

Mr. C. W. Mansell Moullin, Mr. F. S. Eve, Mr. W. Bruce Clarke, and Mr. Charters J. Symonds were introduced, made declarations in the terms of the oath prescribed by the charter of 1800, and took their seats in the Council.

On the recommendation of the museum committee it was resolved that Volume III. of the second edition of the Catalogue of the Physiological Series of Comparative Anatomy in the museum should be offered for sale at 12*s.* per copy. The museum committee also submitted the revised copy of Part I. (Man) of the Osteological Catalogue.

A Member of the College, whose name has already been removed from the Medical Register, was ordered to be removed from being a Member of the College.

The Council referred to the committee of management's resolutions adopted by the General Medical Council on May 30th on the subject of the instruction of students in practical midwifery, and also the resolutions and recommendations of the General Medical Council in reference to professional education and professional examination.

A letter was read from Messrs. Dundas and Wilson reporting that by the death of Miss Moncrieff Arnott on June 10th the legacy of £1000 bequeathed to the College by Mr. James Moncrieff Arnott (who was President of the College in 1850) will become payable to the College free of legacy duty on Nov. 11th next, and reporting, by direction of Miss Arnott's executors, that by her will she requests them to offer to the College the portrait in oil of her father which is in the mansion house of Chapel, Fifeshire. The President stated that he had accepted the portrait on behalf of the Council and had conveyed to Miss Arnott's executors the assurance that the presentation of this portrait of a past President of the College would be warmly welcomed.

The Council then proceeded to elect professors and lecturers for the ensuing year and the following were appointed:—Hunterian professors: W. Sampson Handley, one lecture on Therapeutic Criteria in Cancer; W. F. Victor Bonney, three lectures on a Study of the Connective Tissues in Carcinoma and in Certain Pathological Conditions Preceding its Onset; Donald J. Armour, three lectures on the Surgery of the Spinal Cord and its Membranes; Arthur R. Thompson, two lectures on the Anatomy of the Long Bones relative to Certain Fractures; and Frank C. Shrubsall, three lectures on the Physical Anthropology of the Pigmy and Negro Races of Africa. Arris and Gale lecturers: F. A. Bainbridge, one lecture on the Pathology of Acid Intoxication; and Major Greenwood, jun., two lectures on the Physiological and Pathological Effects which Follow Exposure to Compressed Air. Erasmus Wilson lecturers: Samuel G. Shattock, one lecture on Ovarian Teratomata; J. W. H. Eyre, one lecture on the Surgical Importance of the Pyogenetic Activities of Diplococcus Pneumoniæ; and L. S. Dudgeon, one lecture on Infection of the Urinary Tract due to Bacillus Coli.

Mr. Henry Morris was re-elected President and Mr. Rickman J. Godlee and Mr. W. Watson Cheyne were appointed Vice-Presidents.

The President stated that the vacancy on the Court of Examiners occasioned by the resignation of Mr. C. H. Golding-Bird would be filled at the ordinary Council on July 25th.

The President further stated that the vacancies on the Board of Examiners in Dental Surgery occasioned by the resignation of Mr. A. Pearce Gould and by the expiration of the period of office of Mr. W. B. Paterson would be filled at the ordinary Council on July 25th. Mr. Paterson will offer himself for re-election.

A letter was read from Mr. C. R. Hewitt, stating that he has accepted a librarianship in the Royal Society of Medicine and tendering his resignation of the post which he has been holding in the College. The Council accepted the resignation and expressed its appreciation of the services which he had rendered to the College during 22 years.

The Secretary reported the death, on June 21st, of Professor Edward Hallaran Bennett, Honorary Fellow of the College. The President was requested to convey the sympathy and condolence of the Council to the widow and family.

The Secretary reported that Sir John Tweedy had presented to the College Rymer's "Fœdera" in 20 volumes, folio, published in 1711. The best thanks of the Council were given to Sir John Tweedy for his interesting and valuable gift.

# THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The seventy-fifth annual meeting of the British Medical Association will be held at Exeter from July 30th to August 3rd. The following is a brief programme of the proceedings.

The President of the Association for 1907–08, Dr. Henry Davy, physician to the Royal Devon and Exeter Hospital, will be inducted on Tuesday afternoon, July 30th, and in the evening will deliver his Presidential Address and welcome delegates from the colonial branches and distinguished foreign guests. The Middlemore prize will be presented at the evening meeting to Mr. Sydney Stephenson.

The Address in Medicine will be given on Wednesday afternoon by Dr. W. Hale White, physician to Guy's Hospital, who will advance "a plea for accuracy of thought in medicine." The Address in Surgery will be delivered by Mr. H. T. Butlin, consulting surgeon to St. Bartholomew's Hospital and formerly treasurer of the British Medical Association, on Thursday afternoon; his address will be "on the contagion of cancer in human beings, auto-inoculation." The popular lecture, a comparatively new feature in the Association week, suggested by the late Dr. G. Bagot Ferguson of Cheltenham, by whom the first was delivered in 1904, will be given this year by Sir John William Moore of Dublin, who will speak on weather, climate, and health, illustrating his subject by a large number of screen and lantern slides. The temporary pathological museum promises not to fall behind any of its predecessors; and the usual annual exhibition of foods, drugs, medical and surgical instruments, sanitary and ambulance appliances, &c., will be open on each day except Saturday from 9 A.M. to 6 P.M.

The arrangements for the social side of the meeting have not been neglected. On Tuesday afternoon the Mayor of Exeter will give a garden party; on Wednesday afternoon garden parties will be given by the President of the South-Western branch, Dr. P. M. Deas, and by Dr. D. W. Samways; on Thursday afternoon Sir Thomas Dyke Acland will give a garden party, and Mr. G. G. Gidley, Cullompton, will entertain a picnic party at tea; on Friday afternoon the High Sheriff of Devon, who is also President of the Royal Devon and Exeter Hospital, Sir Dudley Duckworth King, will give a garden party at Wear House; and there will be luncheon parties at Teignmouth, Torquay, and Sidmouth. On Wednesday evening there will be a reception by the South-Western branch on Northernhay; and on Friday evening the civic authorities will hold a reception in the Albert Memorial. The annual dinner of the Association will take place on Thursday evening and on the same evening ladies accompanying members will be entertained at the theatre by the ladies' committee. Excursions have been arranged to visit Devonport Dockyard; the Station Hospital, Devonport; the Royal Naval Hospital, Plymouth; the gunnery, torpedo, and training ships; and Plymouth Sound and the River Tamar. Those taking part in the last-mentioned excursion will be entertained at tea by the Earl of Mount Edgcumbe. Other parties will visit Falmouth and Ilfracombe; others Bideford and Clovelly, where they will be entertained by Mrs. Hamlyn of Clovelly Court; and others Tavistock, driving thence to Endsleigh, where they will be entertained at luncheon by the Duke of Bedford.

## MEDICINE AND THE LAW.

### *Fracture of the Thyroid Cartilage.*

Fracture of the thyroid cartilage is sufficiently uncommon to warrant notice of the following case tried before Mr. Justice Sutton at the Staffordshire summer assizes on July 12th last. James Lees, aged 33 years, a powerfully built man in the employ of the Burton Brewery Company, was indicted for the manslaughter of a fellow employee, named Henry Townsend, on June 12th. Mr. D. Cotes-Preedy, for the prosecution, stated that about 10.50 A.M. on that day the two men quarrelled. Lees struck the deceased two blows on the face and one on the neck. Five minutes later Townsend went to a friend near by with his nose and mouth bleeding and voice very hoarse and made a complaint. Dr. R. A. H. Atkinson, house surgeon to the Burton Infirmary, said that the deceased was admitted at 12.15 P.M. on the same day. The left cheek was contused and the inside of the lower lip was cut. On examining the neck a distinct grating was felt over the region of the left half of the thyroid cartilage, which pointed to a fracture. There was no external mark to correspond, but there were two small abrasions on the side of the neck. Townsend's voice was husky and indistinct. During the first day after admission the patient had half a dozen attacks of dyspnœa, and on the following day three attacks. His condition did not improve and on June 14th delirium tremens supervened with intervals of consciousness. To relieve the dyspnœa tracheotomy was performed on June 16th, but the patient sank and died on the same day. Townsend was a fairly healthy man. A post-mortem examination was made shortly after death by Dr. Walter George Lowe, of Burton-upon-Trent. There was a fracture of the left half of the thyroid cartilage. The vocal cords were still swollen. The lungs and right side of the heart were engorged with blood and the latter organ showed signs of commencing degeneration. The liver was rather fatty. In the witness's opinion death was due to asphyxia and heart failure brought about by the fracture of the cartilage. Both medical men agreed that such a fracture was most rare and that in all probability a severe blow must have been struck to cause the injury. For the defence Mr. Sherwood stated that the deceased man had threatened Lees with a shovel and pleaded for leniency on the ground of the latter's excellent character. His lordship bound Lees over in his own recognisances to come up for judgment if called upon.

### *The Fast Driving of Motor-cars.*

It will have been observed by many drivers of motor-cars that one of their number was sentenced at the recent assizes at Chester to nine months' imprisonment in the second division for manslaughter by negligently driving over and killing a man. The Lord Chief Justice who tried the case pointed out, in sentencing the prisoner, the grave danger necessarily occasioned by the reckless driving of motor-cars and observed that it appeared not to be realised sufficiently that when a machine of such a nature was driven along a public road the lives and property of others must be respected by the person in charge. At present there have been a good many deaths caused by motor-cars and comparatively few convictions for manslaughter, but many motorists seem to think that the increase in the maximum speed permitted to them by law enables them to drive at a pace approaching 20 miles an hour with safety wherever they are. A large number of motor-cars are to be seen daily in the streets of London travelling at a pace which may cause a serious accident at any moment, and the fault will be that of the driver, should one take place, even though something beyond his control may be immediately responsible for the occurrence. The owners of private motor cars incur a heavy responsibility in allowing or causing their chauffeurs, where these are employed, to drive at excessive speeds for the sake of convenience or pleasure. It may also be observed occasionally that familiarity with their work is beginning to breed contempt of danger in the breast of the driver of the motor-omnibus. Where these belong to rival companies, the spirit of competition is already leading to something very like racing, and when two or more motor-omnibuses are racing in a London street any accident that may occur is likely to be a very severe one.

## ASYLUM REPORTS.

*Surrey County Asylum, Brookwood (Annual Report for the Year 1906).*—On Jan. 1st, 1906, there were 1341 patients on the register of the asylum; of these, 542 were males and 799 were females. During the year 393 (174 males and 219 females) were admitted and Mr. James E. Barton, the medical superintendent, again draws attention to the incurable types of insanity from which many of these were suffering. The average age on admission was 43 years and 86 patients were over 60 years of age, which is strong proof of the large number of senile cases received into the county asylums. Of those discharged during the year 112 (54 males and 58 females) were "recovered," 37 (ten males and 27 females) were "relieved," and 102 (58 males and 44 females) were "not improved." The death-rate, calculated on the daily average number resident, was 11·26, which is higher than the previous year, but 69 out of the 155 patients who died were over 60 years of age. A few cases of dysentery and erysipelas are reported. This asylum, as is the case with so many county asylums in this country, was much overcrowded during the year and a contract was arranged with the Oxford Asylum for the reception of 40 males and 20 females and with the York City Asylum for the reception of 30 females, but great difficulty was experienced in finding the class of cases suitable for transfer, owing to the restrictions imposed in the contract and also to the Commissioners in Lunacy insisting that only the patients who were never visited by friends should be sent. At the end of the year the number of patients boarded under contract with other asylums was 130—viz., at Dorset, 40; at Exeter Borough, 10; at Oxford, 60; and at York, 20. There were 11 patients who escaped during the year and of these 10 were recaptured within the statutory period. Most of the escapes took place among those working in the farm or gardens. The Commissioners in Lunacy note in their report "that they were glad to see the children segregated from the adults on both sides, in small wards of 11 girls and three boys on the female side and 13 boys on the male side." The weekly maintenance rate for home county patients was 12*s.* per head. The farming and gardening account shows a credit balance of nearly £600.

*Croydon Mental Hospital* (*Annual Report for the Year ending March 31st, 1907*).—The annual report is made up to March 31st, 1907, but the statistical tables are for the year ending Dec. 31st, 1906. There were 161 patients (89 males and 72 females) admitted during the year 1906. Dr. E. S. Passmore states that of these there was a history of intemperance in 37 (26 males and 11 females), or nearly 23 per cent.; a history of venereal disease in 8·7 per cent., and hereditary influence in 31 per cent. He goes on to say that "if our feeble-minded and mental undesirables were prevented from propagating their species a large number of asylums in the country could be closed." The medical superintendent gives a table showing the increase of patients chargeable to Croydon since 1902. The yearly ratio of accumulated cases is 20·66 women and 8·44 men up to December last. During the year 79 patients were discharged (42 males and 37 females); of these, 54 (32 males and 22 females) are reported as "recovered," 22 (nine males and 13 females) as "relieved," and three (one male and two females) as "not improved." There were 51 deaths (33 males and 18 females) during the year 1906, and of these 13 were due to general paralysis and ten to pulmonary tuberculosis. The maintenance rate remains at 14*s*. The farming and gardening account shows a credit balance of £103. Owing to overcrowding on the female side in the main building the isolation hospital is being temporarily used to accommodate 18 female patients. There were no cases of infectious disease during the year.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8054 births and 3774 deaths were registered during the week ending July 13th. The annual rate of mortality, which had been equal to 12·5 per 1000 in each of the two previous weeks, declined to 12·3 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 15·1 per 1000, the rate in London during the same period being 14·6. The lowest rates in the 76 towns last week were 3·5 in Hornsey, 5·1 in Leyton, 6·2 in King's Norton, and 7·0 in Walthamstow; the highest rates were 17·7 in Stockon-on-Tees, 17·8 in Preston, 18·6 in Hanley, 19·1 in Oldham and in Tynemouth, and 19·4 in Bootle. The 3774 deaths in the 76 towns showed a decline of 79 from the number in the previous week, and included 341 which were referred to the principal epidemic diseases, against 427 and 366 in the two preceding weeks; of these, 127 resulted from measles, 103 from whooping-cough, 39 from diarrhœa, 33 from diphtheria, 29 from scarlet fever, and ten from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Southampton, Burnley, Swansea, Huddersfield, Hornsey, or in eight other of the 76 towns; the annual rates from these diseases, however, ranged upwards to 3·3 in Devonport, 3·7 in Derby, 4·7 in Wigan, and 5·4 in Walsall. The deaths from measles, which had been 158 and 130 in the two previous weeks, further fell to 127 in the week under notice; the death-rates from this disease ranged upwards to 1·4 in Merthyr Tydfil, 1·9 in Reading, 3·3 in Derby, 3·5 in Wigan, and 4·3 in Walsall. The fatal cases of whooping-cough, which had been 136 and 109 in the two preceding weeks, further decreased to 103 last week, the highest death-rates from this cause being 1·2 in West Ham and in Wigan and 1·7 in Barrow-in-Furness. The 39 deaths from diarrhœa showed a further slight decline from the comparatively small numbers in recent weeks; in Devonport the death-rate from this disease was 2·0 per 1000. Of the 29 fatal cases of scarlet fever, 11 belonged to London; and of the 33 deaths from diphtheria, eight were recorded in London and three in Liverpool. Not more than one death from "fever" was registered during the week under notice in any of the 76 towns. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had risen from 2658 to 3193 in the nine preceding weeks, had further increased to 3276 at the end of last week; 493 new cases were admitted during the week, against 414, 422, and 504 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 156 and 148 in the two preceding weeks, further declined to 139 in the week under notice, but were six in excess of the corrected average number in the corresponding week of the five years 1902-06. The causes of 35, or 0·9 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, Newcastle-on-Tyne, Salford, Leicester, and in 52 other of the 76 towns; the proportion of uncertified deaths, however, showed considerable excess in Liverpool, Birmingham, Sheffield, and Barrow-in-Furness.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 17·3, 15·0, and 14·5 per 1000 in the three preceding weeks, further declined to 13·7 in the week ending July 13th, but exceeded by 1·4 per 1000 the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·0 in Aberdeen and 10·6 in Paisley, to 17·3 in Dundee and 22·5 in Perth. The 475 deaths in these towns showed a decrease of 29 from the number in the preceding week, and included 60 which were referred to the principal epidemic diseases, against 84, 76, and 59 in the three preceding weeks. These 60 deaths were equal to an annual rate of 1·7 per 1000, which exceeded by 0·6 per 1000 the rate from the principal epidemic diseases in the 76 large English towns; they included 22 which were referred to whooping-cough, 14 to "fever," 12 to diarrhœa, eight to measles, two to scarlet fever, and two to diphtheria, but not any to small-pox. The fatal cases of whooping-cough, which had continuously declined from 57 to 18 in the six preceding weeks, rose again to 22 in the week under notice, and included 12 in Glasgow, five in Edinburgh, three in Dundee, and two in Paisley. The deaths referred to "fever," which had been 21 and 18 in the two previous weeks, further fell last week to 14, of which six were registered in Glasgow, four in Edinburgh, two in Leith, and one each in Dundee and in Paisley; all these 14 deaths were certified as from cerebro-spinal meningitis. The 12 fatal cases of diarrhœa showed a slight increase over the number in the preceding week, and included three in Glasgow, three in Edinburgh, two in Dundee, and two in Paisley. The deaths from measles, which had been four and five in the two previous weeks, further rose last week to eight, of which seven occurred in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 72 and 80 in the two preceding weeks, further increased to 88 in the week under notice, and exceeded by 30 the number in the corresponding week of last year. The causes of 22, or 4·7 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 20·8, 19·5, and 18·3 per 1000 in the three preceding weeks, rose again to 21·0 per 1000 in the week ending July 13th. During the 13 weeks of last quarter the death-rate averaged 25·4 per 1000, the rates during the same period being 14·6 in London and 17·1 in Edinburgh. The 157 deaths of Dublin residents registered during the week under notice showed an increase of 20 over the number in the preceding week, and included 14 which were referred to the principal epidemic diseases, against 11 and 19 in the two preceding weeks; of these, seven resulted from whooping-cough, five from diarrhœa, and two from measles, but not any from small-pox, from scarlet fever, from diphtheria, or from "fever." These 14 deaths were equal to an annual rate of 1·9 per 1000, the rate during the same week from the principal epidemic diseases being 1·1 in London and 2·1 in Edinburgh. The seven fatal cases of whooping-cough were slightly fewer than the number in the previous week, while the five deaths from diarrhœa considerably exceeded the number in any recent week. The 157 deaths from all causes in Dublin last week included 30 of children under one year of age and 42 of persons aged upwards of 60 years, these numbers being respectively six and ten in excess of those returned in the previous week. Four inquest cases and three deaths from violence were registered; and 58, or nearly 37 per cent., of the deaths occurred in public institutions. The causes of eight, or 5·1 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1907.

(*Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1907. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| **LONDON** ... ... ... ... ... ... ... | **4,758,218** | — | **1688** | **525** | **1** | **80** | **4** | **16** | **290** | **17** | **2621** | **7·2** | — | **229** | **47** | **41** | **180** | — | **7** | **1** | **60** | **565** | **1·5** | **4451** | **12·2** | **90** |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Paddington** ... ... ... ... ... ... | 149,909 | — | 34 | 9 | — | 1 | — | 1 | 8 | — | 53 | 4·6 | — | 4 | 1 | 2 | 3 | — | — | — | 1 | 11 | 1·0 | 109 | 9·5 | 85 |
| **Kensington** ... ... ... ... ... ... | 181,842 | — | 45 | 17 | — | 4 | 2 | — | 12 | — | 80 | 5·7 | — | 7 | 1 | — | 6 | — | — | — | — | 14 | 1·0 | 142 | 10·2 | 36 |
| **Hammersmith** ... ... ... ... ... | 122,337 | — | 29 | 14 | — | 2 | — | — | 3 | — | 48 | 5·1 | — | 3 | — | 1 | 3 | — | 1 | — | — | 8 | 0·9 | 111 | 11·8 | 50 |
| **Fulham** ... ... ... ... ... ... ... | 166,749 | — | 30 | 29 | — | 6 | — | 1 | 12 | 1 | 79 | 6·2 | — | 15 | — | 1 | 7 | — | 1 | — | 5 | 29 | 2·3 | 135 | 10·6 | 91 |
| **Chelsea** ... ... ... ... ... ... ... | 74,857 | — | 14 | 9 | — | — | — | 1 | 2 | 1 | 27 | 4·7 | — | 7 | — | 1 | 2 | — | — | — | 1 | 11 | 1·9 | 85 | 14·8 | 139 |
| **City of Westminster** ... ... ... ... | 172,219 | — | 32 | 12 | — | 2 | — | — | 4 | 1 | 51 | 3·9 | — | 2 | — | 2 | 4 | — | — | — | 1 | 9 | 0·7 | 149 | 11·3 | 86 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **St. Marylebone** ... ... ... ... ... | 127,718 | — | 37 | 9 | — | 3 | — | — | 3 | — | 52 | 5·3 | — | — | 5 | — | 3 | — | — | — | 1 | 9 | 0·9 | 119 | 12·1 | 56 |
| **Hampstead** ... ... ... ... ... ... | 91,137 | — | 15 | 4 | — | 5 | — | 1 | 3 | — | 28 | 4·0 | — | 1 | — | 1 | 1 | — | — | — | — | 3 | 0·4 | 52 | 7·4 | 74 |
| **St. Pancras** ... ... ... ... ... ... | 236,753 | — | 56 | 17 | — | 1 | — | — | 15 | 1 | 90 | 5·0 | — | 21 | 1 | 2 | 10 | — | 1 | — | 2 | 37 | 2·0 | 247 | 13·6 | 138 |
| **Islington** ... ... ... ... .. ... ... | 347,017 | — | 75 | 33 | — | 5 | — | 4 | 18 | 1 | 136 | 5·1 | — | 19 | 1 | — | 20 | — | 1 | — | 5 | 46 | 1·7 | 315 | 11·8 | 79 |
| **Stoke Newington** ... ... ... ... ... | 53,613 | — | 17 | 3 | — | 1 | — | 1 | 1 | — | 23 | 5·6 | — | 1 | — | — | 5 | — | — | — | — | 6 | 1·5 | 34 | 8·3 | 71 |
| **Hackney** ... ... ... ... ... ... ... | 232,993 | — | 129 | 27 | — | 5 | — | 1 | 23 | — | 185 | 10·4 | — | 5 | 2 | 2 | 4 | — | — | — | 3 | 16 | 0·9 | 191 | 10·7 | 61 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Holborn** ... ... ... ... ... ... ... | 55,134 | — | 11 | 6 | — | 1 | — | — | 1 | 1 | 20 | 4·7 | — | 1 | — | — | 1 | — | — | — | 1 | 3 | 0·7 | 65 | 15·4 | 91 |
| **Finsbury** ... ... .. ... ... ... ... | 96,732 | — | 41 | 13 | — | — | — | — | 5 | 1 | 60 | 8·1 | — | 8 | 4 | 1 | 7 | — | — | — | 2 | 22 | 3·0 | 145 | 19·5 | 129 |
| **City of London** ... ... ... ... ... | 20,310 | — | 7 | 3 | — | — | — | — | 1 | — | 11 | 7·1 | — | — | — | — | 1 | — | — | — | — | 1 | 0·6 | 29 | 18·6 | 143 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Shoreditch** ... ... ... ... ... ... | 115,662 | — | 56 | 21 | — | — | — | — | 14 | — | 91 | 10·3 | — | 7 | 1 | 1 | 17 | — | — | — | 3 | 29 | 3·3 | 133 | 15·0 | 109 |
| **Bethnal Green** ... ... ... ... ... | 130,831 | — | 83 | 21 | — | 3 | — | — | 18 | — | 125 | 12·5 | — | 7 | 2 | 3 | 1 | — | — | — | 3 | 16 | 1·6 | 139 | 13·9 | 119 |
| **Stepney** ... ... ... ... ... ... ... | 308,923 | — | 181 | 42 | — | 6 | — | — | 25 | 4 | 258 | 10·9 | — | 1 | 7 | 3 | 11 | — | — | — | 4 | 26 | 1·1 | 307 | 13·0 | 86 |
| **Poplar** ... ... ... ... ... ... ... | 171,086 | — | 71 | 21 | — | 3 | — | 1 | 8 | 2 | 106 | 8·1 | — | 9 | 2 | 4 | 16 | — | — | — | 4 | 35 | 2·7 | 204 | 15·6 | 119 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Southwark** ... ... ... ... ... ... | 209,781 | — | 79 | 24 | — | 7 | — | — | 23 | 1 | 134 | 8·3 | — | 29 | 4 | 2 | 10 | — | — | — | 3 | 48 | 3·0 | 289 | 18·0 | 143 |
| **Bermondsey** ... ... ... ... ... ... | 128,263 | — | 71 | 21 | — | 1 | — | — | 5 | — | 98 | 10·0 | — | 11 | 2 | 2 | 3 | — | — | — | 3 | 21 | 2·1 | 137 | 13·9 | 79 |
| **Lambeth** ... ... ... ... ... ... ... | 318,538 | — | 78 | 24 | 1 | 4 | 1 | 2 | 15 | 1 | 126 | 5·2 | — | 32 | 4 | 4 | 5 | — | 1 | — | 4 | 50 | 2·0 | 305 | 12·5 | 96 |
| **Battersea** ... ... ... ... ... ... ... | 181,736 | — | 72 | 15 | — | 2 | — | 1 | 15 | 1 | 106 | 7·6 | — | 10 | 2 | 2 | 5 | — | — | — | 2 | 21 | 1·5 | 155 | 11·1 | 91 |
| **Wandsworth** ... ... ... ... ... ... | 281,419 | — | 98 | 33 | — | 3 | — | 1 | 14 | — | 149 | 6·9 | — | 7 | 1 | 1 | 12 | — | 1 | — | — | 22 | 1·0 | 227 | 10·5 | 80 |
| **Camberwell** ... ... ... ... ... ... | 277,059 | — | 115 | 30 | — | 8 | — | 1 | 16 | — | 170 | 8·0 | — | 11 | 3 | 1 | 13 | — | — | — | 3 | 31 | 1·5 | 248 | 11·7 | 92 |
| **Deptford** ... ... ... ... ... ... ... | 116,510 | — | 46 | 19 | — | 1 | 1 | — | 8 | — | 75 | 8·4 | — | 7 | — | 2 | 2 | — | — | — | 3 | 14 | 1·6 | 113 | 12·6 | 76 |
| **Greenwich** ... ... ... ... ... ... | 107,222 | — | 45 | 19 | — | 1 | — | — | 3 | 1 | 69 | 8·4 | — | 2 | 1 | 1 | 2 | — | 1 | — | 2 | 9 | 1·1 | 81 | 9·8 | 41 |
| **Lewisham** ... ... ... ... ... ... | 152,532 | — | 45 | 16 | — | 1 | — | — | 5 | — | 67 | 5·7 | — | 2 | 2 | — | 1 | — | — | — | 2 | 7 | 0·6 | 93 | 7·9 | 41 |
| **Woolwich** ... ... ... ... ... ... ... | 129,336 | — | 76 | 14 | — | 3 | — | — | 10 | — | 103 | 10·4 | — | — | 1 | 2 | 5 | — | — | 1 | 2 | 11 | 1·1 | 92 | 9·3 | 88 |
| **Port of London** ... ... ... ... ... | — | — | — | — | — | 1 | — | — | — | — | 1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

Including membranous croup.

deaths during the week did not exceed 0·1 in London, while in Edinburgh it was 7·7. The 104 deaths in Belfast included ten which were referred to cerebro-spinal meningitis or cerebro-spinal fever.

### VITAL STATISTICS OF LONDON DURING JUNE, 1907.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 7·2 per 1000 of the population, estimated at 4,758,218 persons in the middle of the year; the rates in the three preceding months were 6·6, 6·9, and 7·1 per 1000 respectively. The lowest rates last month were recorded in Paddington, Chelsea, the City of Westminster, Hampstead, and Holborn; and the highest rates in Hackney, Shoreditch, Bethnal Green, Stepney, and Woolwich. No case of small-pox was notified in London during the month. The prevalence of scarlet fever showed a marked increase over that recorded in either of the two previous months; this disease was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Stepney, Bermondsey, and Woolwich. The Metropolitan Asylums hospitals contained 2975 scarlet fever patients at the end of last month, against 2614, 2586, and 2777 at the end of the three preceding months; the weekly admissions averaged 390, against 312, 332, and 368 in the three preceding months. Diphtheria was considerably less prevalent than it had been in any other month of this year; among the various metropolitan boroughs this disease showed the greatest proportional prevalence in Fulham, Shoreditch, Bethnal Green, Bermondsey, Deptford, and Greenwich. There were 806 diphtheria patients in the Metropolitan Asylums hospitals at the end of last month, against 1012, 946, and 933 at the end of the three preceding months; the weekly admissions averaged 107, against 136, 119, and 121 in the three preceding months. The prevalence of enteric fever showed a slight increase over that in the preceding month; this disease was proportionally most prevalent in Fulham, St. Marylebone, Hampstead, Bethnal Green, Southwark, Camberwell, and Woolwich. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 93, 66, and 47 at the end of the three preceding months, had risen again to 57 at the end of last month; the weekly admissions averaged 13, against 13, 12, and nine in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Stepney, Battersea, and Woolwich. The 16 cases of puerperal fever notified during the month included four in Islington and two in Lambeth. Of the 17 notified cases of cerebro-spinal meningitis, four belonged to Stepney, two to Poplar, and one to each of 11 other boroughs.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending June 29th the deaths of 4451 persons belonging to London were registered, equal to an annual rate of 12·2 per 1000; in the three preceding months the rates had been 16·9, 15·8, and 14·0 per 1000. The death-rates last month ranged from 7·4 in Hampstead, 7·9 in Lewisham, 8·3 in Stoke Newington, 9·3 in Woolwich, 9·5 in Paddington, and 9·8 in Greenwich, to 15·0 in Shoreditch, 15·4 in Holborn, 15·6 in Poplar, 18·0 in Southwark, 18·6 in the City of London, and 19·5 in Finsbury. The 4451 deaths from all causes in London last month included 565 which were referred to the principal infectious diseases; of these, 229 resulted from measles, 47 from scarlet fever, 41 from diphtheria, 180 from whooping-cough, seven from enteric fever, one from ill-defined pyrexia, and 60 from diarrhœa. The lowest death-rates from the principal infectious diseases were recorded in the Cities of London and Westminster, and in the boroughs of Hampstead, Holborn, and Lewisham; and the highest rates in Fulham, Finsbury, Shoreditch, Poplar, and Southwark. The 229 fatal cases of measles were 30 in excess of the corrected average number in the corresponding periods of the five preceding years; the greatest proportional mortality from this disease occurred in Fulham, Chelsea, St. Pancras, Finsbury, Southwark, Bermondsey, and Lambeth. The 47 deaths from scarlet fever were seven below the corrected average; among the various metropolitan boroughs this disease was proportionally most fatal in St. Marylebone, Finsbury, Stepney, Southwark, and Bermondsey. The 41 fatal cases of diphtheria were slightly below the corrected average number; the highest death-rates last month from this disease occurred in Bethnal Green, Poplar, Bermondsey, Deptford, and Woolwich. The 180 deaths from whooping-cough exceeded by 66 the average for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Islington, Stoke Newington, Finsbury, Shoreditch, and Poplar. There were only eight deaths from "fever" last month, against an average of 19 in the corresponding period of the five preceding years; these eight deaths belonged respectively to Hampstead, Fulham, St. Pancras, Islington, Lambeth, Wandsworth, Greenwich, and Woolwich. The 60 fatal cases of diarrhœa were 23 below the average; this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Deptford. In conclusion, it may be stated that the aggregate mortality from the principal infectious diseases in London last month was nearly 11 per cent. above the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 90 per 1000. The lowest rates were recorded in Kensington, Hammersmith, St. Marylebone, Hackney, Greenwich, and Lewisham; and the highest rates in Chelsea, St. Pancras, Finsbury, the City of London, and Southwark.

## THE SERVICES.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. S. F. Henderson has been appointed registrar and secretary at the Royal Victoria Hospital, Netley, vice Lieutenant-Colonel G. E. Twiss. Major G. A. T. Bray has been appointed embarking medical officer at Southampton. Colonel A. T. Sloggett, C.M.G., Principal Medical Officer of the London District, has been appointed president of a board of officers constituted for the purpose of examining candidates for commissions in the Royal Army Medical Corps, on July 24th, in London.

Lieutenant Francis J. Turner to be Captain (dated March 4th, 1907).

### VOLUNTEER CORPS.

*Royal Garrison Artillery (Volunteers)*: 3rd Lancashire: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel M. J. Fox resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated June 6th, 1907). 6th Lancashire: Surgeon-Lieutenant F. W. Bailey to be Surgeon-Captain (dated June 12th, 1907). 1st Midlothian: William Guthrie Porter to be Surgeon-Lieutenant (dated June 17th, 1907).

*Rifle*: 2nd Volunteer Battalion the Hampshire Regiment: Herbert George Harris to be Surgeon-Lieutenant (dated June 1st, 1907). 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry: Alexander Macphail to be Surgeon-Lieutenant (dated June 14th, 1907). 3rd Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry): Percy George McReddie (late Surgeon-Lieutenant) to be Second Lieutenant (dated June 4th, 1907). 1st Volunteer Battalion the Royal Welsh Fusiliers: Surgeon-Captain J. E. H. Davies resigns his commission (dated June 14th, 1907). 1st Volunteer Battalion the Duke of Cornwall's Light Infantry: Surgeon-Lieutenant K. M. Pardhy resigns his commission (dated June 15th, 1907). 3rd Volunteer Battalion the Welsh Regiment; Surgeon-Lieutenant C. R. White to be Surgeon-Captain (dated June 12th, 1907). 2nd Volunteer Battalion the Manchester Regiment: Surgeon-Captain J. A. K. Renshaw resigns his commission (dated May 24th, 1907). John Alfred Knowles Renshaw (late Surgeon-Captain) to be Captain (dated May 24th, 1907).

### THE MILITARY STATION HOSPITAL, DEVONPORT.

The Director-General of the Army Medical Service (Surgeon-General Sir A. H. Keogh, K.C.B.), and Sir James R. A. Clark, Colonel-in-Chief of the Royal Army Medical Corps (Militia), on July 10th made an inspection of the Royal Army Medical Corps (Militia) under training at the Military Station Hospital, Devonport. After the parade the Director-General, Sir James Clark, and Lieutenant-Colonel J. M. Jones, R.A.M.C., inspected the wards of the hospital.

# Correspondence.

"Audi alteram partem."

## THE APPOINTMENT OF SANITARY OFFICERS TO GENERAL HOSPITALS.

*To the Editors of* The Lancet.

Sirs,—The necessity of sanitary supervision is recognised not alone in the construction but also in the practical every-day working of all institutions where large bodies of human beings are brought together—schools, factories, theatres, prisons, barracks, &c., and which are, or should be, regularly inspected by competent experts. If this care is needed in the case of the healthy it is much more so in those suffering from disease. The body under these circumstances gives off many more deleterious substances. The sick are more susceptible to disease germs than the healthy and the concentration of a large number of those suffering specially from the infectious disorders renders the infection not alone more potent but also more virulent unless the greatest attention is observed in keeping the ventilation and other sanitary arrangements as perfect as possible. These considerations are almost so self-evident that it is a matter of surprise that at the present time very few general hospitals have any expert advisers responsible for the many details included under the term of modern sanitation. No doubt in the more recently constructed buildings the ventilation, heating, and removal of excreta will probably be specially looked after, but this is only one aspect of sanitation and even these particulars are liable to go out of order if not kept under constant supervision. In many cases these details are left completely in the hands of the architect who lacks the knowledge needed which can only be acquired by a sanitary medical expert who has an intimate acquaintance with the daily working of these institutions. The ordinary medical attendants of the hospital have neither the time nor, in the majority of cases, the special training and experience to act as sanitary experts. Where so many purely technical questions arise it would be undesirable, if not dangerous, to place the decision of them in the hands of those who had not both special training and practical experience, nor do I think that the ordinary medical attendants would be anxious to add to their already laborious duties. No doubt in certain cases, as in the arrangements to prevent the spread of infectious diseases, the sanitary expert should consult with the general staff, but I do not fear any clashing in this respect. The general staff would recognise that the sanitary adviser was an important factor in aiding them in their efforts to cure.

Amongst some of the details the sanitary adviser would specially report upon would be the size of each ward and number of beds in them, the position of the beds, the lighting (natural and artificial), the heating, and, still more important, the ventilation so as to insure the purity of the air without draught, the accommodation for storing patients' clothes, the position, &c., of the outdoor department and dead-house, and the removal of the excreta and dry refuse. The excreta are often infected with the germs of contagious diseases and to permit them to be thrown into the closets without efficient disinfection is to infect the public sewers and through them the soil and water. I drew attention to this danger several years ago in a communication to the Liverpool Congress of the Royal Sanitary Institute and showed in how many cases the so-called disinfection of excreta was practically useless.

The many serious questions connected with the spread of infectious diseases in the hospital could be arranged in consultation with the general staff. The carrying-out of the disinfection, &c., would be under the guidance of the adviser and the efficiency of the annual cleaning so as to insure the destruction of any dangerous germs should be under his direction. Lastly, I may refer to the important duties of the adviser in connexion with the food-supply of the hospital. I need hardly dwell upon the importance of a supply of pure unadulterated food to the sick, still in how many general hospitals do the general staff examine that food or could they be expected or be competent to form an opinion on the subject. For example, take one very largely used food—viz., milk. The milk-supply of unions, prisons, &c., is more or less kept under supervision and prosecutions for adulteration are not uncommon. Do cases of contamination of the general hospitals' supply ever come before the courts? Are we to understand from this that these contractors are always above suspicion or is it to want of any really efficient investigation and control? In the case of milk not alone should the supply be frequently tested but the contracts should have a clause permitting the adviser to visit and to inspect the dairies, cows, &c., at any time he thought fit. Outside the milk the meat, vegetables, and other food should be open to inspection and report by the adviser. I would be inclined to go further and permit him to give at least friendly advice on the cooking. It is no exaggeration to say that the cooking in many general hospitals leaves much to be desired, nay, reformed. The preparation of the diet of a sick person is not the least important element in effort at his cure.

I have perhaps said enough to justify my contention that the appointment of sanitary advisers to general hospitals would be public gain—alike beneficial to the patients, the general public, and the medical and surgical staffs.

I am, Sirs, yours faithfully,
July 8th, 1907. Antony Roche, M.R.C.P. Irel.

## GROCCO'S TRIANGLE: PHYSICAL AND ANATOMICAL EXPLANATION.

*To the Editors of* The Lancet.

Sirs,—The objection urged by Dr. Alexander Morison against personal names as a basis of medical nomenclature is not the only one which he might have stated. There is a further drawback in the uncertainty which often exists as to priority of discovery. In this instance the names of v. Koranyi and of Rauchfuss have also been mentioned in connexion with an early clinical observation of the sign in question. It is significant that the name which Dr. Morison proposes is derived from pure Greek, which for more than 25 centuries down to the end of the last has been the recognised official language of nosology. At the same time, the alternative term "paravertebral," although it is a hybrid and a rather long word, is hard to beat as a "finder." But it is now probably too late to discuss a merely academical point. Practically the expression "Grocco's sign" seems to have already received its *imprimatur* in every language. Its brevity is tempting. Moreover, its use is conveniently free from awkward limitations. For instance, Dr. Morison states, and it was established by demonstration on the operating table two years ago, as communicated to The Lancet in my postscript of July 22nd, 1905,[1] that the "paravertebral triangle of dulness" may be obtained as a result of an intra-abdominal as well as of an intrapleural collection of fluid and that the fluid may be pus just as it may be simple serous effusion. Further instances of this intra-abdominal causation have since then been obtained in a continuous series of cases of ascites. It is therefore essential that these alternatives in diagnosis should not be excluded in any name given to this physical sign which cannot be claimed as exclusively distinctive of intrapleural fluid.

In spite of these reservations, whenever there is obvious absence of any abdominal complication this sign is, in my experience, the most delicate test for the presence of free fluid in the pleural cavity. Neither the x ray nor ordinary percussion can succeed in proving whether after an attack of pleurisy the partial dulness which may persist at the base is due to fibrin, to fibrous adhesions, to thickening and inexpansion of the pulmonary tissues, or to a remnant of fluid. The needle itself is not a final appeal. "Dry tappings" have often occurred in cases diagnosed as of pleural effusion by means of the most trusted methods. Now and then one of these "dry tapped" subjects chances to die, and the post-mortem verdict may justify the physical signs against the needle. Professor Thayer[2] narrates a typically illustrative case—that of a previously aspirated effusion in which a few days later some basic dulness on percussion and the paravertebral triangle were to be got, but no fluid issued from the needle. Had the *crucial test* which I have introduced been applied in that case as in precisely similar cases in which I was able to apply it the presence of fluid might have been determined beyond reasonable doubt. When properly checked by test and counter-test the paravertebral triangle is our finest and apparently our only reliable reagent for the detection of small amounts of free fluid at the base of the pleura and also for some estimate as to its quantity. This method of diagnosis is at the same time by far the easiest and the most rapid to carry out. It is, therefore, likely to be regarded in the future not only as important but as often indispensable.

---

[1] Cf. vol. ii., 1905, p. 216.

[2] Journal of the American Medical Sciences, January, 1907.

I am, Sirs, yours faithfully,
WILLIAM EWART.

Curzon-street, Mayfair, W., July 14th, 1907.

## THE TSETSE FLY.

*To the Editors of* THE LANCET.

SIRS,—At a time when so much interest is being taken in the tsetse fly it may be of interest to some of your readers to make known publicly what I have already mentioned to one or two medical friends. About three years ago (when I was travelling commissioner here) I asked some native chiefs if they knew the fly that did harm to their cattle. They said they did but that the fly did no damage *unless it had previously bitten a "red" monkey*. By this I think is meant a "yellow" monkey, not uncommon out here (the natives have no names for different shades of colour as we have), and I never saw a "red" monkey. I give this for what it is worth, but there was no reason why a monkey should have been mentioned any more than a goat unless the natives thought there was some truth in the statement. Westwood ("Introduction to Study of Insects") mentions in a footnote that M. Vallot noticed the existence of an œstrideous larva in a monkey, and possibly it was a zimb. The matter seems worth looking into at any rate.

I am, Sirs, yours faithfully,
J. WINN SAMPSON, F.R.M.S.,
Police Magistrate.

Calabar, South Nigeria, June 14th, 1907.

## THE HAMPSTEAD GENERAL HOSPITAL.

*To the Editors of* THE LANCET.

SIRS,—In your last issue Mr. A. Craske makes a great deal of what is obviously an error in the report of my speech. My assertion was that the income from the invested funds of the North-West London Hospital was under £200 a year; it is actually £170.

I am, Sirs, yours faithfully,
E. COLLINGWOOD ANDREWS.

Hampstead, N.W., July 16th, 1907.

## THE IMAGINATIVE TEMPER IN SCIENCE.

*To the Editors of* THE LANCET.

SIRS,—I think homœopaths will have good reason to grumble with your article on the "Imaginative Temper in Science" and to comment on the taste and tact of the writer and also of the Editor in introducing this subject into a leading article and making statements about it which its followers will be unable to controvert, not because they cannot, but because their replies would be boycotted, as this one will be, by the Editor who places as a motto over one of his columns "Audi alteram partem."

I am, Sirs, your obedient servant,
J. J. G. PRITCHARD.

Dewsbury, July 14th, 1907.

## A NIGHT SHELTER FOR WOMEN AND GIRLS.

*To the Editors of* THE LANCET.

SIRS,—We beg your courtesy for a little space in your valuable journal for a special appeal on behalf of a cheap and decent night shelter for women and girls which we are anxious to establish in London. The idea is the outcome of hundreds of sympathetic letters received since the publication of "The Soul Market" which gave Mrs. Archibald MacKirdy's personal experiences among the poor and outcast. A lady has promised us £1000 if four other ladies or gentlemen will give or collect like sums.

The plans for the shelter are made on the most economical and practical lines. It is hoped it will, when built and equipped, be self-supporting. The charges will be 2*d*. to 4*d*. a night and this refuge will be the means of helping many a girl and woman back to good citizenship and decent living. We are favoured with Royal sympathy and our committee include the following ladies and gentlemen among others:—The Duchess of St. Albans, Lady Wemyss, Lady Brassey, Lady Evelyn Moreton, Lady Wright, Mrs. Herbert Gladstone, Lord Reay, Lord Curzon, Lord Brassey, Lord Strathcona, Sir W. Wright, Sir Dyce Duckworth, Sir W. S. Gilbert, and the Rev. Arch. Fleming.

Subscriptions may be sent to Lady Brassey, the treasurer of the fund, at 24, Park-lane, London, W.

We are, Sirs, yours very truly,
SYBIL DE V. BRASSEY,
OLIVE CHRISTIAN MACKIRDY.

July 12th, 1907.

## THE REFORM OF THE ROYAL NAVY MEDICAL SERVICE.

*To the Editors of* THE LANCET.

SIRS,—The Lords Commissioners of the Admiralty have just issued an order that naval medical officers are not to receive fees for evidence at coroner's inquests or for performing post-mortem examinations on a coroner's order, and that they are to consider this part of their duty as naval medical officers. I ask you to publish this letter because I think that this order may have been issued before their lordships had been sufficiently well advised upon the matter, and also in order that we may hear through your valuable columns the opinions of some of our brothers in the profession. I have always believed that on taking our diplomas to practise as medical men and becoming registered we were, partly by power of the Charter of the Medical Faculty to which we belonged and partly by right as a registered medical practitioner, entitled to certain privileges and at the same time bound by certain restrictions. The right to demand fees from a coroner I have always looked on as a right conferred by being a registered medical man. Surely, if one class of Government officials are to be debarred from receiving these fees that can only be done by Act of Parliament, which would alter the coroner's law, and at the same time surely it should be made applicable to all paid out of the public purse, whether Admiralty, War Office, Local Government Board, or municipal authority.

I regret to say that there is a feeling of uncertainty in our branch of the profession as to whether you would care to ventilate our grievances in your valuable journal owing to pressure from the medical department of the Admiralty, who are not anxious that candidates for the Service should be deterred from joining when they read what is published. As I am sure that you would not close your valuable journal to any true and sensible grievance I send you this letter. There is a widespread view that it is quite time that the suggested reforms by which many were lately induced to enter the Service should be brought in as there is a great desire for improvement by many, not in the direction of pay, rank, or privileges, but in promotion of efficiency throughout the Service. The open disapproval shown to men who endeavour to improve their general knowledge by working at bacteriology has caused much discontent. The present way of distributing hospital appointments which are so few as to be insufficient to enable every medical officer to obtain one during his whole career in the Service and which could so easily be remedied by shortening the term of office; and in order to avoid long journeys and expense to the department in travelling exchanges could be effected every 12 months with men serving in the port or in the fleet attached to the station. The present system of employment of large numbers of medical officers in the home and reserve fleets which all have reduced crews and most of the home fleet ships having two medical officers. These fleets, the home and reserve, have not sufficient work for one man for three ships. It certainly shows the kindness and generosity of the Admiralty in keeping the officers on full pay, but I for one would much rather have efficiency than idleness, as once appointed to one of these ships one has to remain on board daily from 9 A.M. to 1.30 and most ships until 3.30, although there may not be one man sick and there is always one ship flying a medical guard flag which signifies an officer on board all day for emergency. There are many who suggest that in the case of these medical officers they should, after visiting their ship in order to see the sick, be appointed to the hospital as medical or surgical registrars in order to keep them occupied during the forenoons and provide them with more material for compilation of their Service journal. Our large hospitals at home are all undermanned compared with the fleets and I believe the sole reason is that the hospitals come under a civil money grant which must be kept down.

The room for improvement is great and it is hoped that the favour shown to cricketers, footballers, actors, &c., in obtaining the best billets may soon cease. Lastly, when will something be done for the unfortunate sick-berth staff, the worst paid branch in the service, and who are entirely controlled by the executive and whose training is a farce?

I am, Sirs, yours faithfully,
July 13th. SURGEON, R.N.

*** It appears to us that in the case of sailors, marines, and civil employees of, or connected with, the Navy it would be manifestly part of the duty of a naval medical officer on full pay to attend any court of public inquiry at which his presence is required and make such professional investigations and examinations as may be necessary and we think that for this duty his pay and prospective pension is a retaining fee from the Service. In the case of an officer on half-pay we consider that the Admiralty has no moral or legal right to interfere in the matter. Naval medical officers on full pay are forbidden by the regulations to engage in private practice of any description, but in the event of any accident or sudden emergency occurring in the person of any civilian and in circumstances where the assistance of a private practitioner is not to be obtained, a naval medical officer, if summoned, would have a right to a professional fee. In such cases, which must be very rare, we cannot believe that the Admiralty has either the wish or the power to prevent him from receiving the fee due to him. In our opinion the Admiralty order to which our correspondent alludes is intended to refer only to duties connected with persons, whether civil or military, employed by the Admiralty in some one of its departments, ashore or afloat. We cannot believe that the naval medical officers who have done us the honour to read our columns believe that our prejudices are on the official side, and with some of the points mentioned by "Surgeon, R.N." we have already dealt. His whole letter, however, is an interesting and important document to which we shall later refer.—ED. L.

# SOME TURKISH LAZARETS

## AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(*With Reproductions of Photographs taken by the Author.*)

### XI.[1]

### YANBO.

*Situation and Character of the Town; it is the Port for Medina.—Proposal to put up here a Disinfecting Pavilion.—Difficulty in finding a Suitable Site.—A Floating Pavilion Suggested.—The Water-supply of the Town; its Precarious Character.*

THE ports of Yanbo and El Wej are comparatively rarely visited by Europeans, particularly the latter. The former is, after Jeddah, the most important of the Hedjaz coast ports, and will probably always be so, since it occupies much the same relation to Medina as Jeddah does to Mecca. Its distance, however, from the corresponding Holy City of Islam is very much greater than in the case of Jeddah, the journey from Yanbo to Medina occupying some four or five days, whereas that from Jeddah to Mecca can be done on a fast camel in a single night, and rarely takes more than two days. The actual distances are approximately 130 miles and 45 miles respectively.

Yanbo is situated on the northern shore of a small bay. It is surrounded by desert and has an arid appearance, with practically no sign of vegetation. Behind, but at a distance of many miles, rises the fine range of mountains called Jebel-Radwa, portions of which are as high as 6000 feet above sea level. The town is not only much smaller but also less picturesque and attractive than Jeddah; it has a far less well-to-do appearance and few of the houses are adorned with those elaborately carved (and no doubt costly) wooden windows and balconies that abound in the larger port. At the moment of my visit there Yanbo was being rapidly invaded by some 10,000 pilgrims arriving by sea from Jeddah. The ship I travelled there by, though only of between 400 and 500 tons, had brought its contingent of over 500 pilgrims and other and larger ships were arriving daily.

Yanbo has the reputation of being a less civilised port than Jeddah; the pilgrims there, it was said (in Jeddah), became more fanatical and less amenable to restraint; the inhabitants were thought to be less accustomed to the sight of Europeans, and it was freely said that landing there, or at El Wej, might involve a certain risk. As a matter of fact, there is, perhaps, a certain small risk in any of these pilgrim ports, less though from the pilgrims than from the native Arabs. The murderous attack made on the foreign consuls in 1895 (when the British vice-consul was killed, and the British consul, Russian acting consul, and a member of the staff of the French consulate were seriously wounded, at a short distance outside Jeddah) is still fresh in the memory of those who have to reside in these ports. That attack was the work of native Arabs and bore no relation to the pilgrimage. So far as my limited experience may be allowed to count, there would seem to be little reason for apprehending danger from the Hajjis themselves, whether at Jeddah, Yanbo, or El Wej. At Yanbo the pilgrims were far more occupied in making arrangements for the start to Medina, in listening open-mouthed to the chanting recitals of itinerant preachers, or in taking a final sea-bath before their desert journey began than in paying any attention to the rare European visitor in their midst. Fig. 38 shows the first caravan of the season forming up in the market-place of Yanbo preparatory to starting for Medina.

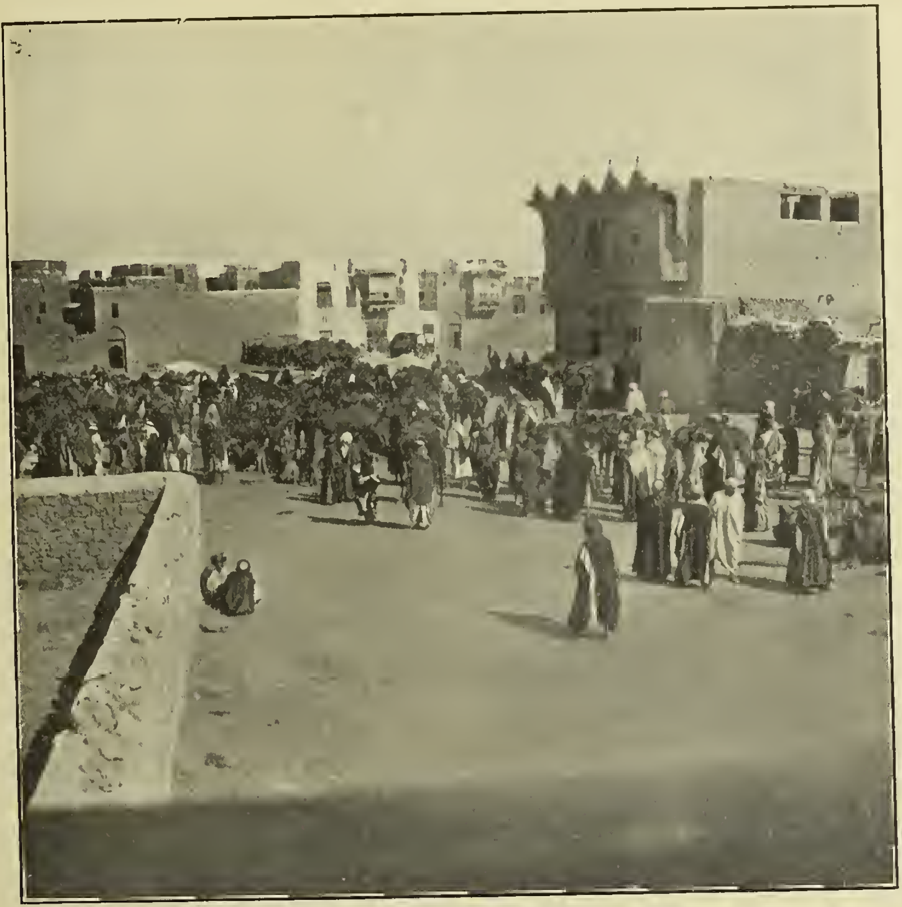
The principal object of my visit to this port (in which I was not accompanied by the other members of the Commission) was the choice of a site for a disinfecting station which it is proposed to establish here. There is no doubt that such a station would be a great convenience both for pilgrims and for pilgrim ships. As stated in an earlier article, a considerable number of pilgrims from the north visit Medina before going to Mecca. If there is any measure of quarantine in force against their country of origin they are compelled to go to the Jeddah lazaret to accomplish it. When such measure is confined (as is frequently the case) to a simple "medical visit and disinfection" it bears rather hardly on both pilgrims and ships that they should have to go so far out of their way before pratique is granted them at Yanbo, and in many instances the pilgrims have taken the law into their own hands and under threats of violence have compelled the captain of their ship to go directly to Yanbo. On such occasions they are landed at Yanbo without undergoing any measures at all. It is to meet this unsatisfactory state of affairs that the Constantinople Board of Health has long desired to establish at Yanbo a disinfecting station, where the pilgrims would undergo a douche bath and the disinfection of their clothes and belongings in steam stoves.

The principal obstacle to carrying out this proposal has been the difficulty in finding a suitable site. One or two vacant spaces on the sea-shore within the town walls had been suggested but they were obviously unsuited. It would be impossible thoroughly to isolate the building from the rest of the town were it put up on one of these sites. Another suggestion was to utilise a reef near the middle of the bay which becomes an island at low tide and is known locally as Hobsa Island. At high tide this reef is some feet under water. Finally, and as offering at first sight quite the best position, the island of Abbasieh had been recommended. This is a typical coral island rather further from the town than Hobsa, long, narrow, and crescent-shaped. Its length was found to be 666 metres and its breadth from 25 to 88 metres. At its south-eastern end is the tomb of a certain Sheikh Abbas, from whom the island takes its name. His tomb has some local reputation as the shrine of a saint but it is not visited by the pilgrims. Close

---

[1] Nos. I., II., III., IV., V., VI., VII., VIII., IX., and X. were published in THE LANCET of April 27th (p. 1188), May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), June 1st (p. 1518), 8th (p. 1607), 22nd (p. 1741), and 29th (p. 1810), and July 6th (p. 51) and 13th (p. 114), 1907, respectively.

FIG. 38.

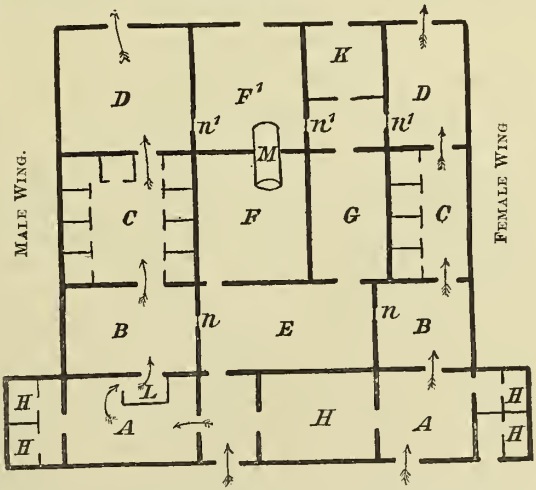


Yanbo : the first caravan of the season preparing to start for Medina.

by are a ruined stone building and some tents occupied by Arab fishermen. This island would be admirably fitted for the site for the disinfecting station but for one fatal drawback—it is surrounded by shallows and reefs for nearly half a mile in all directions; these are more or less dry at quite low tide but are for most of the 24 hours covered with a foot or two of water. In order to land on the island we were compelled to wade ashore for a distance of several hundreds yards. From subsequent exact measurements it was found that were it decided to build here a landing pier the extremity of which could be approached by boats at all states of the tide it would need to be 600 metres long. Hobsa presents almost equal disadvantages; it would be necessary either to raise its level artificially, so that its surface should be above water at all states of the tide, or to put up the building on piles; in either case a jetty of some length would be required. The architect who accompanied me to Yanbo estimated the cost of the pavilion and jetty at Abbasieh at about £T 2900 and at Hobsa at about £T.2300.

In view of the difficulty in finding a suitable site for a building on land the Constantinople Board of Health is now considering the possibility of having a floating disinfection station at Yanbo. The board already possesses one in the Bosphorus. It is called the *Burhanneddin* and is a floating structure, half lighter, half ship, upon which there is a small disinfecting pavilion containing one modern disinfecting stove. It was hoped that it might be possible to send this to Yanbo and it has been thoroughly examined by a committee of experts with that view. Unfortunately, however, they report that the *Burhanneddin* is not in a condition to be towed over the long distance that separates Yanbo from Constantinople and requires, indeed, serious repairs if it is to continue to be employed on the Bosphorus. If, therefore, Yanbo is to have a floating pavilion it will be necessary to build one specially for that port. Steps to that end are now being taken; plans and estimates have been asked for, and a definite decision on the matter may be expected very shortly.

PLAN VI.



Type plan of small disinfecting pavilion as adopted in certain Turkish ports. Scale 1/200. A, A, Waiting rooms. B, B, Undressing rooms. C, C, Douche baths. D, D, Dressing rooms. E, Room for sorting effects. F, Stove room ("contaminated"). F′, Stove room ("clean"). G, Room for chemical disinfection. H, Room for employee. K, Store-room for disinfectants. L, Doctor's cabinet for medical inspection of pilgrims. M, Steam disinfecting stove. At n, n the pilgrims' clothes are passed by a turnstile from the undressing rooms to the stove room ("contaminated" side) and at n′, n′ they are returned, after disinfection, from the stove room ("clean" side) to the dressing rooms.

The disinfecting pavilion, whether constructed on dry land or on a floating barge, will follow more or less closely Plan VI., which is reproduced here in miniature. Two pavilions on the same plan have already been put up, one at Jaffa and the other at Rhodes, and those which it is intended to build at Trebizond, Salonica, and Valona will be on similar, if not identical, lines. The plan explains itself; the left wing contains waiting room, undressing room, bath room, and dressing room for men; the right wing has similar, but smaller, rooms for women. In the middle are a room for sorting the clothes and effects of the pilgrims, two other rooms, "contaminated" and "clean," with the steam stove fixed in the party wall dividing them, and a room where chemical disinfection can be carried out. In the last will be constructed three large cement-lined troughs to hold the disinfecting solutions. The cost of such a pavilion varies in different localities; that at Jaffa cost rather more than £1000 sterling; the estimate for a similar pavilion at Yanbo (on land) amounts to nearly £1300.

Yanbo is said to contain about 5000 inhabitants; for the four hottest months of the year the great majority of the population migrate from the port, which is known locally as Yanbo-el-Bahr ("Yanbo by the Sea") to another town, some six hours distant, known as Yanbo-el-Nakhl ("Yanbo of the Dates"), where, as its name implies, dates are the principal product. The latter town is said to have an excellent supply of water, but at the former water is scarce and dear. Rain falls but rarely; once a year, perhaps, there may be a fall, but sometimes there is complete drought for two or three years. In the intervals the town is dependent for its supply upon the cisterns outside the walls, which in every way resemble those at Jeddah, described in an earlier article. Not infrequently there is a veritable water famine and the price of water becomes excessively high. In 1900, for example, at one moment the garrison of 120 soldiers was paying three Turkish pounds (£2 14*s.*) a day for its water. Some water is also brought into the town on camel back from Oués, some six hours distant; but the Bedouins, it is said, not infrequently attack the water-carriers and capture their asses and camels. Altogether, the conditions under which Yanbo obtains its drinking water can scarcely be regarded as ideal and it may be hoped that the declared intention of the Turkish Government to put up here, as at Jeddah, a distilling apparatus will in truth be carried out.

Yanbo has a kaimakam, or Turkish governor, and representatives of the Ottoman Public Debt Administration and of the Tobacco Régie reside here. There is also a representative of the Grand Sherif of Mecca, known as the Emir-i-Djuheiné, who has considerable powers; he is chief of the tribe to which he belongs and, as claiming descent from the Prophet, is much respected by the Bedouins.

(*To be continued.*)

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *The Dental Association.*

THE annual meeting of the North Midland branch of the British Dental Association has just been held at the University of Manchester. On July 12th Dr. Hopkinson, the Vice-Chancellor, gave an address of welcome to the members and referred to the closer connexion between the dental profession and the University that had grown up in recent years. There are now a large number of students preparing for the dental profession, and the University has instituted a degree and diploma which have received full recognition. The Vice-Chancellor said that "they wished to make the degree a work not only of practical proficiency but also of a good general scientific education." It seems that the dentists are to be furnished with a subject for controversy, for the retiring President, Mr. C. Rippon, said he regretted that a code of fundamental principles on the subject of provident dental aid had not been agreed upon and that in the meantime a provident institution had already been established in the south. Those who are aware of the troubles and the disputations over the provident medical dispensaries in Manchester will agree that the dental profession should carefully consider the matter and should take up a definite and well-thought-out position. The subject of attention to the teeth of school children was considered by both the retiring President and the new President, Mr. G. O. Whittaker. The former thought that the education authorities were now more fully alive than they were to the need of such attention and were ready to move with the association. In his address Mr. Whittaker pointed out the amount of physical disability caused by neglect of the teeth and the national loss which resulted. He thought that the mere examination of the teeth by a qualified man would do good. The dentist could report to the parents and where there was a dental hospital the remedy was within the reach of poor people. Absence from school through toothache means loss of grants and he thought that the cost of dental supervision in the public elementary schools would be largely provided by increased grants. In cotton mills, too, much loss to employers and employed is caused by "broken time" through "face-ache." He made a suggestion that no doubt will be welcomed by the Manchester and Salford Sanitary Association—namely, that it was desirable that a dentist should be appointed on the committee. However, the dentists and not the Sanitary Association are responsible for this deficiency, as the former have never, so far as I am aware, shown any wish to join the committee of the association.

### *Killed by Her Hairpins.*

An unusual cause of death was inquired into last week by the Blackburn coroner. A woman, 57 years of age, fell backwards downstairs and her head struck a door at the bottom. Several of her hairpins were driven "right into her skull." She died two hours afterwards. No other injuries were recorded. Many of the long, strong pins, with points like needles, with which women fasten on their hats are well known as dangerous weapons, but presumably in this instance the fatal injury was caused by the smaller variety, generally held to be comparatively harmless.

### *Stockport Infirmary and the Coroner.*

It is always to be regretted when adverse comments, even if they be undeserved, are made at a coroner's inquest on the treatment of hospital cases. It is acknowledged that, though an error in judgment is possible, those in charge of the sick and injured are painstaking and humane. Yet whenever an opportunity occurs to question the treatment adopted there seems a tendency to take the most unfavourable view. This is the more to be regretted, because it fosters the idea entertained by the more ignorant of the public, or a large section of them, that hospitals are "places for doctors," as it is often put, "to try their experience on you." An inquest was held on July 9th at Stockport on a man who was at his work in a brickyard when about half a ton of clay fell on him, covering the whole of his body with the exception of the head. He was released and taken to the infirmary and after being treated there was sent home. He was said to have been in great pain while at the infirmary, but the medical officer did not consider him bad enough to be detained. The coroner said that "he should like to have heard what the medical man at the infirmary had to say as to why the man had not been detained there. ...... There was sufficient cause to call for an explanation from the medical officer at the infirmary, and he hoped that such explanation would be forthcoming." The verdict returned was "Accidental death," and the jury regretted that the man was not detained as an in-patient. The tone of the coroner's remarks was not pleasing to the infirmary board, which met the day after, and the chairman said that the house surgeon's version was that the patient was examined by himself and Dr. Milner and that there was little reason why he should have been taken in. The members of the medical staff who were present expressed entire confidence in the senior house surgeon but said that if they had known the history of the case as they did then they would have detained the patient. It is, of course, quite possible that the case would have ended fatally if the man had been detained, but the moral to which it points seems to be that any case at all doubtful should be kept in until its character is fully known.

### *Weather and Vagrants.*

A curious fact testifying to the influence of the weather on various callings came out at the Bury board of guardians last week. Attention was drawn to the fact that the number of vagrants in the workhouse during the past few weeks was 50 per cent. higher than in the corresponding period of last year. The chairman said "this was remarkable considering the good trade that prevailed in the district." One member suggested that the bad weather affected outdoor labour. It may be feared, however, that the majority of the tramps are only waiting to resume their summer tour as soon as the skies are propitious.

### *Manchester Water-supply.*

Manchester is a great consumer of water and the chairman of the waterworks committee feels it his duty from time to time to speak against waste and to draw attention to the prospective insufficiency of the supply. For some time, however, there has been too great a supply for the Longdendale reservoirs and during three days of last week a total of no less than 126,000,000 gallons were run to waste. The quantity that has to be run into the river daily to supply the mills lower down is only 14,000,000 gallons. It was reported on July 11th that there was a sufficient supply for 133 days with a daily rate of consumption of 40,000,000 gallons. It is a curious coincidence that on Jan. 1st both of this year and of last year the supply was sufficient for the same number of days. The daily consumption, however, was calculated on 38,000,000 gallons instead of on 40,000,000 as now.

July 16th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *University of Liverpool: Semi-jubilee Celebrations; Graduation Ceremony.*

THE three days' programme of social functions organised in celebration of the twenty-fifth anniversary of University College, now the University of Liverpool, was inaugurated on July 11th by a reception at the University, which was attended by about 4000 guests. The arrangements were admirably planned and carried out, conducing to the enjoyment of the visitors. The entrance hall of the Victoria building, the archway of the medical school, and the entrance to the zoology building were used simultaneously for the reception of the guests, who were welcomed by Mr. E. K. Muspratt (Pro-Chancellor and chairman of the Council), Vice-Chancellor A. W. W. Dale, and by the treasurer (Mr. Hugh Rathbone). Refreshments were served in various parts of the building and there was music in the quadrangle by the Liverpool Constabulary Band and in the Arts Theatre and Zoology Museum by the Ross ladies' orchestra. Interesting scientific lectures and experiments proved most attractive and the exhibits were conveniently placed for easy inspection. Academic dress was worn by the graduates. The scene was a most animated one and the reception was one of the most interesting ever held in Liverpool. In continuance of the celebrations the Lord Mayor held a reception at the town hall on July 12th and in the evening of the same day there was a students' ball. But the most important function was the University Association's dinner held at the Adelphi Hotel on July 12th, over which Vice-Chancellor Dale presided. The company included the Lord Mayor of Liverpool, the Lord Bishop of Liverpool, Sir Oliver Lodge, the Rev. Dr. Rendall, the first Principal of University College, Liverpool (now head master of Charterhouse School), Professor Bradley, the Master of Magdalene College, Cambridge, Professor W. Ostwald (Leipsic), Sir Henry E. Roscoe, Professor W. Osler, Sir John Murray, Sir William Ramsay, Professor A. R. Forsyth, and Sir John Brunner, Bart., M.P. Sir Oliver Lodge proposed the toast of "The University" and gave an interesting account of the foundation of University College (now the University of Liverpool) of which he was professor of physics for 19 years. Professor MacCunn, in responding, said that he would not attempt to estimate what the University of Liverpool owed to the scholarly devotion of Rendall, the insight of Bradley, the brilliant gifts of Forsyth, the eloquence and wit of Raleigh, the indomitable scientific fidelity and enterprise of Gotch, and not least to the large-hearted scientific genius of Sir Oliver Lodge. The Vice-Chancellor proposed "The Guests" in a humorous speech, which was replied to by Sir Henry Roscoe, Professor Forsyth, and Professor Osler.—The graduation ceremony, held at St. George's Hall on July 13th, was an occasion of special interest and importance; several honorary degrees were conferred by the Chancellor, the Earl of Derby, on men distinguished in arts and science, among whom for the degree of D.Sc. were Professor Francis Gotch, Principal Sir Oliver Lodge, Professor Osler, Professor Forsyth, Sir John Murray, Professor Ostwald, Sir William Ramsay, and Sir Henry Roscoe. The degree of LL.D. was conferred on Sir Edward Lawrence and Mr. Muspratt (both Pro-Chancellors of the University) in acknowledgment of their pioneer work in and for the University. At a luncheon which followed the graduation ceremony an oil portrait of Mr. Muspratt, which had been subscribed for by members of the University club, was formally presented to the club, and in the afternoon a garden party was given by Sir John Brunner in his charming grounds at Druid's Cross, Allerton. In the evening the students wound up the commemoration festivities with a supper at the Yamen Café. Altogether the occasion was a memorable one.

### *Liverpool School of Tropical Medicine.*

Sir Alfred Jones presided at a dinner given on July 15th in the University Club, Liverpool, for the purpose of bidding farewell to Dr. Barrett and Dr. Yorke, members of the Black Water Fever Expedition, who are going out to Africa, and to Dr. J. L. Todd, late director of the Tropical Research Laboratories at Runcorn, who is returning to Canada. Sir Rubert W. Boyce, in proposing Dr. Todd's health, said that coming from Canada he had been willing to work in every part of our Empire, and while giving his time and talents he had also contributed something like £200 per annum to the Tropical School, and, more particularly, to the institution at Runcorn. Sir Alfred Jones having also spoken. Dr. Todd, in response, said that very little gratitude had been displayed for the work of Dr. Dutton who died whilst engaged in research work, only one-quarter of the sum required to establish a professorship in his honour having been collected. The Bishop of Liverpool proposed success to the "Black Water Fever Expedition." Professor Ronald Ross supported the toast, which was acknowledged by Dr. Barrett and Dr. Yorke. On the motion of the American Consul, the toast of "The Study of Tropical Medicine" was honoured, and was responded to by Colonel D. Bruce, R.A.M.C., who alluded to the recent successful work in connexion with Mediterranean fever.

July 16th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Prevention of Cruelty to Children.*

THE Glasgow district committee of the National Society for the Prevention of Cruelty to Children reports that during 1906 the number of cases of alleged cruelty dealt with by the inspectors was 1605, being an increase of 78 on the previous year. The number of children affected was 4679, as against 4411 in 1905. The number of children received and cared for in the shelter was 549. The ordinary income was £1281 and the ordinary expenditure £1271. Legacies amounted to £323, and £2745 were received in response to a special appeal to the public.

### *Action against a Druggist.*

In the Court of Session last week a pharmaceutical chemist in business in Dundee was sued for £500 damages in respect of injuries said to have been sustained by a girl, aged five years. The child was suffering from ringworm and it was alleged that the druggist advised the application of butter of antimony to the scalp and supplied a bottle the contents of which were applied, with the result that the girl lost all her hair and her health was injured. Lord Johnston assoilzied the defender with expenses. He stated that he was satisfied that the defender warned the father of the child that he had no personal knowledge of the drug being used for the purpose in question and that he warned him that it must be applied carefully and sparingly.

### *Medical Appointments under Govan School Board.*

As a result of a conference with Dr. W. Leslie Mackenzie of the Local Government Board in May the Govan parish school board has appointed ten medical officers at a salary of £50 each per annum to assist in the work of medically superintending the children. The new officers are also to advise the board as to the ventilating, heating, lighting, and cleanliness of the schools and to report any insanitary conditions discovered. By means of lectures, demonstrations, or otherwise the teachers are to be instructed in the method of recognising the common ailments and defects of school children, in the practice of first aid for school accidents, in the general hygiene of the school and the class-room, and in the physiological principles that underlie physical training. There were 66 applicants for the posts as advertised.

### *Funeral of Sir William T. Gairdner.*

On July 2nd the remains of Sir William T. Gairdner were interred in the family burying-ground at the Western Necropolis, Glasgow. It was peculiarly fitting that the principal ceremony should take place in the Bute Hall of the University of Glasgow, where for nearly 40 years he filled the chair of practice of medicine. Among those present were the members of the senate and University Court, representatives from the corporation of Glasgow, the general council of the University, the Faculty of Physicians and Surgeons, Glasgow, and the University of Edinburgh.

### *The Trial of Purves for Shooting Dr. R. Carswell.*

The last stage of the "Purves insanity" episode took place last week when Purves was sentenced to seven years' penal servitude. It will be recollected that nearly three years ago Purves was certified insane by Dr. Carswell and Dr. Marion Gilchrist. On being liberated from the asylum he brought an action of damages for £10,000 against each of them, but the case was decided against him in the Court of Session. Two months ago he shot at and wounded Dr. Carswell with a revolver in one of the public streets of Glasgow, his avowed object being not to kill but to bring Dr. Carswell into the witness-box. At the trial the course of events was somewhat unusual, the Advocate Depute for the prosecution trying to prove the prisoner insane; while, on the other hand, counsel for the defence, acting under the prisoner's instructions, maintained his sanity. Medical experts were called on both sides, the evidence being very conflicting, but eventually the jury decided in favour of his sanity, with the result that a sentence of seven years' penal servitude was conferred. The whole incident from beginning to end has served to demonstrate the unsatisfactory position of medical men with reference to the granting of certificates of insanity.

### *Enteric Fever at Peterhead.*

Several meetings of the town council of Peterhead have been held to consider the situation caused by the large number of cases of enteric fever, and at a recent meeting Provost Leask gave a summary of what had been done since the outbreak of the fever. From this it appears that on June 8th an emergency meeting of the public health committee was held at the request of the medical officer of health who reported that a serious outbreak of enteric fever had taken place in the burgh. The sanitary inspector at the same time submitted a report of analysis of the water-supply from (1) Forchill; (2) Grange; (3) chamber near Downiehills; (4) Downiehills Burn; (5) Cairncatta supply; and (6) Wellington supply. In consequence of these reports the inspector was instructed to make further examinations of these sources of supply. The inspector at the same time reported that the sources from the Downiehills Burn and chamber had been cut off. The committee again met on June 12th, when the result of the sanitary inspector's further analyses was intimated and in consequence a notice was sent to all the inhabitants warning them to boil all water used for drinking or domestic purposes. At a meeting of the water committee held on June 15th it was resolved to run off the water in the Grange reservoir and to give the latter a thorough clean out. The public health committee again met on June 26th, when it was reported that the water from the Forchill reservoir, though improved, was still of bad quality. On June 28th the public health committee again met for the purpose of providing additional accommodation required for the increased number of cases. It was decided, if found necessary, to make arrangements for a temporary building in the hospital grounds and to endeavour to secure accommodation in the Strichen hospital. At a meeting of the town council on July 1st the medical officer of health was authorised to procure an assistant, and among other things it was arranged that the fish-curers should be asked to use salt water for cleaning their fish and that the police should be asked to direct their attention to any waste of water. On July 5th a special meeting of the town council was held for the purpose of meeting Dr. F. Dittmar, medical inspector of the Local Government Board, and of considering the measures to be adopted in connexion with the outbreak of fever. At this meeting a telegram was read from the Local Government Board stating that both the Board's medical inspectors and the burgh medical officer of health were prepared to certify that one of the reservoirs was typhoid infected—this being the Forchill reservoir from which no water was at present being taken. Analyses of water from various sources were submitted. Dr. Dittmar was then called in and heard very fully regarding the conditions of the water-supply and the methods to be adopted to combat the epidemic. Thereafter the position of matters was fully discussed and it was resolved :—

1. To close the Forchill reservoir until further consideration by the town council, the reservoir not again to be used for domestic purposes.
2. To endeavour to go on with the supply from the Wellington and Cairncatta sources; if found insufficient the council to arrange for an intermittent supply.
3. To issue a further warning to consumers to boil water before drinking or using for domestic purposes.
4. To boil water at several parts of the town for public uses.
5. To warn the public against using the water from the Cairntrodlie, Blackhouse, and Washinghouse Green wells without first boiling it for at least ten minutes.

The epidemic shows signs of abating during the last few days, to judge from the number of notifications. So far 170 cases have been notified, but a large number of these have been very slight. The temporary hospital is now ready for occupancy and the most urgent cases are being removed there. 42 cases are already in hospital and all are making good progress. Several cases have been removed to Strichen Hospital. About a dozen deaths have so far been attributed to the malady. The fishing community has escaped almost entirely so far from the fever. Surface water is used at Peterhead to augment the supply when it appears likely to fall short of the demand and the recent heavy rains washing well-manured fields are probably responsible for the epidemic. I understand that the Admiralty and Prison Commissioners have very generously consented to allow the Peterhead town council to take the surplus from their water-supply. It is expected that this supply will run from 30,000 to 40,000 gallons per day. The work of connecting the supply with the pipes of the town supply has almost been completed. The water is of undoubted purity as it goes through a process of filtration. This additional supply enables the town council to cut off some further doubtful supplies.

July 16th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Royal College of Surgeons in Ireland: Royal Visit to Dublin.*

THE address from the Royal College of Surgeons in Ireland (represented by Sir Henry R. Swanzy, Mr. John Lentaigne, Sir Charles A. Cameron, Sir Arthur Chance, and Mr. G. F. Blake, Registrar) was the following :—

> We, the President, Vice-President, and Council of the Royal College of Surgeons in Ireland, desire to avail ourselves of the presence of your Majesties in Dublin to offer the assurance of our allegiance to your Majesties and our respectful and loyal welcome on the occasion of your gracious visit to Ireland. It is the object of our Royal College to provide highly qualified surgeons who may serve their country in the Naval or Military Services, as well as those others who will devote their lives to the care of the sick in the civil community. Knowing the deep interest your Majesties take in all that concerns the welfare of your subjects and the progress of surgical science, we feel confident that our Royal College may rely on your Majesties' favour in our continued efforts to secure the efficiency of those who seek our diplomas. Signed on behalf of the Council.
>
> HENRY R SWANZY, President.
> JOHN LENTAIGNE, Vice-President.
> CHARLES A. CAMERON, Secretary.

His Majesty gave the following general reply to all the addresses and handed a copy of it to each deputation :—

> GENTLEMEN,—I thank you for the hearty greetings and cordial welcome which you have tendered to the Queen and myself, and I accept with sincere gratification your loyal assurances of devotion to my Throne and person.
>
> I am pleased to hear of your success in your various spheres of public duty, and I trust that a blessing may continually follow your labours for the prosperity of the country and the welfare of the people.
>
> I regret that time does not admit of an individual acknowledgment of your addresses, but I ask you to accept from the Queen and from myself an assurance of our gratification at your kindly reception of us and of our hearty sympathy with you in your efforts for the good of the various communities which you represent.

### *Health of Belfast.*

It was reported to the public health committee at the weekly meeting on July 11th that for the week ending July 6th there had been six cases of cerebro-spinal meningitis, as against 11 for the previous week Since the last meeting of the committee (July 4th) only three cases were notified, as against five in the previous week, and for the week ended Saturday, July 6th, five deaths were notified to the Registrar-General, as compared with six during the previous week. Of 72 cases in Purdysburn Fever Hospital, 35 were suffering from "spotted" fever and one death only occurred from that disease during the week. The general death-rate for the week ended July 6th was 20·3, which is very high for this time of year.—The Belfast Health Commission resumed its sittings on July 15th, when, after three officials of the water board (the consulting engineer, engineer, and superintendent of works) and a builder, who was examined as to inspection of a conduit, had given evidence, Mr. A. H. Bates, K.C., gave a long address on the evidence put forward in reference to the water-supply of the city, setting himself to face the important issue as to how far the water system was responsible for the typhoid fever outbreaks in Belfast. He said that the presence of typhoid fever was only part of the health problem in Belfast, the striking fact being the general high death-rate. He showed that typhoid fever was both endemic and epidemic in Belfast and as endemic was startlingly high in its incidence, and yet there was no suggestion that it was due to the water-supply. As to the epidemic form of typhoid fever being due to the water-supply, he maintained that the theory that two water catchment areas (Stoneyford and Woodburn) 20 miles apart, with different physical conditions, different histories in point of health, and different features, could recurrently, periodically, and concurrently be affected in the same way was inconceivable. Proceeding, Mr. Bates dealt fully with Professor J. Lorrain Smith's evidence and report and quoted from him that in a certain area in Belfast (occupied by the artisan classes) the smoke test showed that 37 per cent. of the drains were defective, and in another area 73 per cent. of the drains were wrong, the point being that where typhoid fever was found in such areas as these sanitary defects at once came into operation for the purpose of spreading the disease. He concluded by speaking highly of the water board and deprecated any suggestion of extending the Mourne scheme faster in its development than was contemplated by the original promoters. Mr. H. A. Cutler, city surveyor and engineer, was then examined as to the Belfast main drainage scheme.

July 15th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *Pellagra and Insanity among Arabs.*

AT a meeting of the Academy of Medicine held on June 25th M. Marie said that an examination of insane Arabs suffering from pellagra in the Abasseeh Asylum showed that genuine pellagra was almost constant among them just as among the population from which they were derived; they were therefore pellagrous persons who had become insane. Some mental disorders following pellagra owed their origin to it, and on that account presented typical psychological characteristics associated with the physical symptoms of pellagra. Certain paralytic forms of insanity occurred in pellagrous individuals and confirmed the opinion of Baillarger who maintained that pellagrous paralysis might assume a form clinically and pathologically identical with general paralysis of the insane. The diseases were, however, not the same and M. Marie considered that general paralysis of the insane was a syphilitic manifestation. The two forms might be combined—that is to say, cases were known in which Arabs suffering from general paralysis were both syphilitic and pellagrous.

### *The Action of Salts of Lime on the Heart.*

Some experiments described by M. Loeper and M. Boveri at a meeting of the Society of Biology held on June 22nd served to confirm the well-known opinion that salts of lime exercised an exciting effect on the cardiac muscle. These observers have noticed in the human subject an increase of the arterial pressure and a slowing of the heart beats after the ingestion of chloride of calcium. On the other hand, they found a notable increase of the weight of the heart in rabbits to which there had been given for a month doses of one or two grammes of chloride of calcium and two, four, or even eight grammes of carbonate or phosphate of calcium. They, moreover, obtained evidence that the hypertrophy of the heart arising in this way was accompanied by an accumulation of calcium salts in the cardiac substance.

### *Lead Poisoning.*

At a meeting of the Academy of Medicine held on July 2nd M. Meillère presented an important communication on lead poisoning regarded from the chemical point of view. The conclusions arrived at from this aspect were very similar to those which were formed on purely clinical grounds. It was shown that lead was a poison attacking specially in the nervous system the grey substance of various centres, and in the sanguineous system both the blood corpuscles and the organs or structures in which they originated—namely, the liver, the spleen, and the bone marrow. By its long retention in the affected tissues and the slowness of its elimination the lead interfered with nutrition, disturbed the normal relations of the mineral constituents of the body, and brought about a kind of premature senility. These disastrous effects attained their greatest development in degenerates of all kinds whose constitution rendered them unusually susceptible to the poisonous effects of lead. M. Meillère has investigated the elimination of lead by the hair of various parts of the body and by the nails. He also discussed the question of the normal presence of lead in the tissues and concluded with a description of the best methods of conducting researches on the toxicology of lead.

### *Treatment of Cancer of the Stomach.*

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on June 27th M. Doyen showed some cases of cancer of the stomach treated by his method. The total number of his successful cases is now 16. Some were treated as soon as the first definite symptoms appeared, whilst others were inoperable. As a result of the treatment the vomiting and the cachectic colour of the skin disappeared and the appetite returned. Among the 16 patients pylorectomy was performed in one case and simple gastro-enterostomy in four cases; the remaining 11 patients were not operated on. It was mentioned that four patients were treated respectively five years ago, four years ago, three years ago, and two and a half years ago. In two cancerous patients a biliary obstruction also disappeared. M. Doyen has also during the last few months successfully treated cases of cancer of the œsophagus, cancer of the rectum, cancer of the larynx, and *cancer en cuirasse* of the two breasts with peritoneal invasion. He attaches great importance to the early use of vaccine.

### *Obituary.*

Professor Grancher, who on account of his health has for many years past been compelled to winter in the South at Cambo, died in Paris on July 13th. He was born in 1850. Having entered the medical profession he presented for his doctor's degree a thesis entitled, "L'Unité de la Phthisie." Since that time he chiefly concerned himself with researches into tuberculosis. He was one of the first to make laboratory experiments upon anti-tuberculous "vaccination," and he also for some time worked with Pasteur. In 1892 he became a member of the Academy of Medicine. His later years were devoted to the service of a society founded by himself for the protection of children from tuberculosis (*préservation familiale contre la tuberculose*).

July 16th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *Garibaldi and "Claims to Priority."*

THE unselfishness of the Liberator, was, morally speaking, his most distinctive feature, fraught with lessons to his compatriots and to his contemporaries of all nationalities, not only in the military sphere but in every field of coöperative endeavour. The "fruits of victory," the "spoils of war," the "glory" that awaits success had no fascination, no meaning for him. In 1860, when under the walls of Capua, to which he was laying siege, he was importuned by Graziotti, one of his officers, in these words: "General, let me launch a couple of shells at the citadel and it will surrender immediately. To-morrow the Piedmontese army will come and they, too, will bombard the stronghold and tell the world that they have taken it." "Let them say it," answered the general; "we have not come here for glory." A characteristic remark! At Montevideo, after the victory of the Salto, he refused from the struggling Commonwealth every recompense or honour, declining even the proffered rank of general from the Montevidean War Office, adding, 'Such distinctions would only oppress me." Looking simply to the triumph of the cause he had at heart—the good of his fellow man—he was quite indifferent to the "glory of victory," so long as the victory was gained. Such self-abnegation has its lessons, as I have said, not only in the military sphere, but even in those of science, of fine art, and of literature. The jealousies among the votaries of these pursuits—jealousies not confined to his compatriots, among whom, it is true, they are all too manifest—are in strong contrast to Garibaldi's noble freedom from the *amour propre*, the self-assertion, in which these jealousies have their source. Science, nature study, in which the attainment of truth is the one real object to aim at, are prolific in examples of the ignoble jealousies indicated, claims to priority in this or that "discovery" or even "observation" being loudly advanced and as loudly met by counterclaims, till the controversy from a personal achieves an international significance. Some 30 years ago persistent attempts were made to assert for Cesalpino a "priority" over Harvey in the discovery of the circulation —attempts which did not survive the demonstration by Dr. George Johnson of King's College that the discovery, gradually led up to, belonged ultimately to the English anatomist. Again, the counter-claims of Adams and Leverrier to the discovery of the planet Neptune—claims, be it said, which were advanced not by the discoverers themselves but by eager *chauvinistes* of British or French nationality—have ceased to be heard now that it is recognised that both astronomers, well-matched in scientific aptitude, and working on the same lines, were bound about the same time to reach the same terminus. Such coincidences tend to become more and more frequent as the interdependency of work in the same field becomes more and more real and effective. "Nothing in this world is single," says the poet, "all things by a law divine, in one another's being mingle," till claims to "originality" or "priority" will appear not only ignobly egotistic but in every sense unphilosophic.

### *The Treatment of Pulmonary Tuberculosis: a New Method.*

Dr. Carlo Forlanini, professor of clinical medicine in the University of Pavia, has proposed a treatment for pulmonary tuberculosis which seems to have other merits than its undoubted novelty. Cases of real arrest of the slow destruction of the lung, while not so rare as is supposed, he would ascribe not to the medical treatment but to a fortunate resumption of strength on the patient's part, sufficient to react against the disease. In two lectures recently delivered before a professional audience at Milan —lectures embodying the results of 20 years' study and experience, clinical and experimental—he gave a pathological history of the disease in its inception and progress, and endeavoured to show that the characteristic cavities (*vomicæ*) are the result of other causes than those consequent on the bacillus of Koch—may, in fact, be the outcome of "all those micro-organisms which can produce catarrh in the interior of the pulmonary alveoli." This catarrh, he proceeds to show, consisting of a mass of dead cellules, of degenerate elements, and of different species of micro-organisms, fills the pulmonary alveolus in the act of respiration under pressure of the air which seeks to enter the said alveolus, and thus, though relieved by expectoration, interposes a serious obstacle to the sanguineous circulation. Thanks to this obstacle and to the consequent denutrition of the tissues the walls of the alveolus become enfeebled until they are destroyed and give place to a primary small cavity which by the same mechanical process enlarges into a cavity or cavities still greater. The conditions under which a cavity is formed consist in the pulmonary function—that is, in the mobility of the lung itself. Further, he contends that while a lung slightly diseased from tubercle gets well if it performs its function duly a lung in process of destruction cannot get well unless complete immobility be induced. A clinical case of frequent occurrence illustrates this law. When around a tuberculous lung there is formed a copious gathering of liquid (as happens in pleuritis), so that the lung remains shrivelled and immobile, and when this liquid continues for a sufficient time the affected lung loses its functional power but it gets well. Now (says Professor Forlanini) the method of cure I propose is precisely this—to introduce into the thoracic cavity not a liquid, because the operation would be difficult, even dangerous, but a gas, that gas which is at once inert and innocuous, azote. This, we know, is prepared by a very familiar chemical reaction in a glass apparatus and is introduced into the thoracic cavity by a long fine needle. The pressure of the gas is so regulated as to be a little higher than the pressure of the atmosphere, so as to overcome the tendency of the lung to distend. By this means when the thoracic cavity is full of gas the lung is pushed up, shrivelled, and reduced to an inert mass, thus preventing the disease from pursuing its fatal course. The walls of the great cavities come in contact with each other; all that material of the disintegration of the tissues in which the most varied microbic forms were germinating is squeezed out; the connective tissue which constitutes the elastic support (*sostegno*) of the lung gets the ascendancy, and so the entire diseased part becomes a mass of cicatrices. We are not to suppose, however, that all this happens after a first introduction of the gas. The pleura has great absorbent power; the azote, though in less degree than other gases, tends sooner or later to disappear and matters would resume their former condition if the gas is not re-introduced in sufficient quantity. The treatment, therefore, is long, lasting for months, but finally, either because the absorbent power of the pleura is minimised or because the danger of the lung's distending anew becomes less probable, we may consider the cure as complete. Professor Forlanini was able to produce clinical proofs of the efficacy of his treatment and in the discussion which followed to make out a "good case" for giving his method a trial.

### *Are Medicines Groceries?*

It would seem so according to the Venetian Court of Appeal. Certain pharmacists in Venice sued three grocers of that city for having, in contravention of the "Codice Sanitario," sold "specialità medicinali" (special medicines), and the Pretore Urbano (city sheriff) found the said grocers guilty and fined them in 200 lire (£8), with an order to compensate the pharmacists for the losses sustained. The grocers appealed, and on July 11th, after a long discussion, judgment was given in their favour, the court affirming that grocers can sell all "specialità medicinali" which have been supplied to them by the houses which manufacture the same. Evidently the article of the "Codice Sanitario" dealing with the question requires revision!

July 12th.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

### *Lowered Gastric Secretion.*

At a recent meeting of the Medical Society Dr. Aldor read an interesting address on Lowered Gastric Secretion, in the course of which he said that the view recently advanced that the gastric secretion can be dispensed with did not commend itself to him. The presence of the gastric juice in the duodenum stimulates indirectly the pancreas and it regulates the movements of the stomach. Dr. Aldor referred to a condition where the gastric juice is absent without apparent cause. Depression, neurasthenia, and hysteria produce suppression of this secretion; diseases of the brain, spinal cord, as well as arterio-sclerosis, are factors in bringing about a defect of secretion of the stomach. The absence of the hydrochloric acid in acute inflammatory conditions of the stomach is a wise provision, as if present it would cause considerable irritation to the mucosa. Insufficient gastric juice at times produces diarrhœa and particles of undigested food, especially proteins, are found in the stools. It is injudicious, in Dr. Aldor's opinion, to give hydrochloric acid in carcinoma of the stomach, as the acid is a source of irritation. Poor gastric digestion will bring about poor intestinal digestion. No two individuals can be considered to require the same amount of hydrochloric acid, so that there is no standard as to the amount of acid necessary for digestion in all people. Dr. Aldor holds that the stomach can be educated to do substantial work; therefore a mixed diet should be given and it is not to be taken in small quantities at frequent intervals, although in some instances it is necessary to give the meals frequently. He is inclined to think that a more normal digestion is obtained with pyloroplasty than with gastro-enterostomy.

### *Radiotherapy.*

At the last meeting of the Dermatological Society considerable attention was devoted to the present status of radiotherapy. Broadly speaking, the view of the meeting was that there is no longer any question as to the specific field of action of the Roentgen ray in all forms of acne, lupus, eczema, psoriasis, pruritus, tinea, sycosis, mycosis fungoides, senile keratosis, venereal condylomata, and hyperidrosis. Among the skin diseases that may be classed as erratic are pigmented vascular nævi, hypertrichosis, and acne rosacea. Of the first mentioned, about 18 per cent. are cured and about 28 per cent. are improved. It was stated that 80 cases of epithelioma involving the skin only were treated with no recurrence. When the tumour is situated at a mucocutaneous junction it is well to have the glands removed after a period of quiescence has been brought about by the x rays. Justus followed this method in several cases with no recurrence after two years. He considered the Roentgen rays sufficient treatment in the great majority of cases. The knife should be used only in cases where the tumour is situated favourably for radical removal. In cases having the characteristic odour he invariably anæsthetises the surface and by means of the galvanic current drives into the tissue for a prolonged period of time zinc and mercury ions, following this medication with the Roentgen rays after the separation of the slough. 18 cases of carcinoma treated vigorously with the Roentgen rays were cured. In 14 cases the tumours and enlarged glands disappeared completely; in four they ceased to grow. He considered that all primary cases should be treated with the rays, excluding the knife. He does not believe in the existence of a case of sarcoma that cannot be markedly benefited by a prolonged mild radiation from an old hard tube, well coated with aluminium, the thickness depending on the individual circumstances existing in each case.

### *Communicability of Cancer.*

At the Cancer Congress held lately in Budapest Dr. Kaczvinsky read a paper on the Communicability of Cancer. He is of the opinion that cancer is a communicable disease. The reasons for this are, first, its great increase in modern times; the fact that cancer is most frequent where population is densest—that, for instance, it is more common in direct ratio to the density of the population in the poorer districts in Budapest than in any other; that it seems to follow certain watercourses; that it becomes connected with houses; and that so many cases that are seen by surgeons can be readily traced to possibilities of communication. For instance, it is not unusual to find cancer occurring in those who are closely associated with one another. Dr. Kaczvinsky has recently seen a cancer of the tongue in a workman who had been with another workman suffering from the same disease. Some observers have seen it in two brothers who were living in intimate association, in a brother and sister where one had nursed the other, and in a wife and husband who had been very much together.

July 10th.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

### *Cholera in Calcutta.*

A RECENT report by Dr. T. Frederick Pearse supplies a striking instance of the conveyance of cholera by unfiltered river water. In an analysis of 1340 deaths from cholera in Calcutta during the first three months of the present year it was found that only 7·66 per cent. of the total cholera deaths occurred among Mahomedans, although this community forms 28 per cent. of the total population. On the other hand, the incidence among Hindus was correspondingly severe—the Hindu deaths amounting to 91·9 per cent. of the total, while the Hindu population is only 66 per cent. of the total. The number of Hindu females attacked was remarkably high in proportion to their numbers—no less than 40 per cent. of the deaths occurring amongst them, while in numbers they form only 23 per cent. of the total population. Hindu males were attacked at the rate of 51·3 per cent. of the total, while in numbers they only constitute 43 per cent. of the total population. In a list of 16 specified castes the greatest sufferers were the Khandait, Brahmin, Teli, Boisnab, Bania, and Shaha castes. A table annexed to the report shows a great preponderance of cholera deaths in the municipal wards which border either on the river or on the branch of it called Tolly's Nullah.

### *The Calcutta Hospitals.*

The annual report concerning the Calcutta hospitals has just been issued. They are 17 in number and received 23,136 in-door patients and gave relief to 271,078 out-patients during the past year. This is a considerable increase, but some two or three do not seem to have progressed. No less than 44,746 cases were treated for malaria and 212 cases of opium poisoning were attended to. Of the total of patients 58·33 per cent. were men, 19·78 per cent. women, and 21·89 per cent. children. The total income of these institutions was Rs.14,48,158, of which the Government contributes Rs.9,34,743, or 68 per cent. The paying patients brought in Rs.98,149, but the public subscriptions amounted to only Rs.41,910 (less than £3000). Considering how largely the natives of India benefit by these institutions the public subscriptions are very meagre. The expenses of up-keep amount to about 10 lakhs (roughly £67,000). Some of the hospitals have been vastly improved and brought into line with modern requirements.

### *The Madras Medical College.*

In his report on the work of the Madras Medical College during the session 1906–07 Lieutenant-Colonel W. B. Browning, I.M.S., C.I.E., the principal, states that there were 327 students on the rolls during the year, showing a decrease of 32, as compared with 359 in the previous year. Of the 327 students, 206 (of whom nine were females) attended the College department, where 103 studied for the qualifications of M.B. and C.M., and 69 for those of L.M.S. The results in the final M.B. and C.M. examinations were much better this year than in the two previous years, there being 60 per cent. of passes, as compared with 46 per cent. in the session 1905–06. In the apothecary department there were 66 students. The 55 remaining students of the total 327 either attended the chemist and druggist department or the sanitary inspectors' class or were hospital assistants undergoing post-collegiate training. As regards dental surgery, 30 lectures were delivered during the session and practical dentistry in the out-patient department of the General Hospital was available. With respect to race, caste, and sex the 327 students were classified as follows: Europeans and Eurasians, 57 males and 22 females; native Christians, 44 males and six females; Brahmans, 110 males; non-Brahmans, 78 males and three females; Mahomedans, five males; and Parsees, two males.

June 26th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *Hospital Affairs.*

THE annual meeting of the friends and supporters of the Royal Prince Alfred Hospital, Sydney, was presided over by His Excellency the Governor of New South Wales and was largely attended. The report showed that the number of patients admitted during the year 1906 was 4297, and that the total number under treatment was 4545. Of these 2822 were discharged recovered, 801 relieved, and 248 unrelieved; 380 died, and 294 remained in the hospital on Dec. 31st, 1906. The number of beds in the hospital was 318, and the average number of patients resident daily was 295. The number of attendances in the out-patient and casualty departments was 50,315, and the number of individual patients in these departments was 12,579. The total amount received from contributing patients during the year was £2913 as compared with £2359 in 1905. The financial statement for 1906 disclosed a deficiency of £3843, brought about by the increased number of beds available, and in carrying out works recommended in the secretary's report. The surgical operations performed again showed a large increase, the total number for the year being 2749, against the previous highest number recorded of 2337. It had been necessary to add to the general surgical and medical staffs owing to the increase of work from the opening of the new pavilion. The honorary staff now numbered 29 members. As an outcome of the establishment of the medical gymnastic department the massage work of the hospital had been extended, and there were 15 honorary masseurs and masseuses. The board of directors had proposed that the Government, instead of re-building the Coast Hospital at a cost of £40,000, should send the patients to the Royal Prince Alfred Hospital at an annual payment of £50 a bed, the present cost at the Coast Hospital being £65 a bed. The Premier, in supporting the adoption of the report, said that the Government had decided to comply with this suggestion. It also proposed to place all the hospitals in the State under the control of a representative board, which would allocate the hospital grant according to individual requirements.—Hospital Saturday in Sydney has become a recognised institution and this year £5546 were collected, an increase of over £600 on the best previous collection.—The inspector of charities for Victoria recently submitted to the Premier a memorandum suggesting the establishment of paying hospitals intermediary between charity hospitals and private hospitals, where the charges would be lower than at the latter and the fees charged by the medical attendants less. The acting Premier has stated that he is not altogether in favour of the suggestion but admits that there is a great deal to be said for it.—At the last meeting—the second held—of the recently formed Hospitals and Charities Association of Victoria it was reported that 32 institutions had joined the association. A joint subcommittee of the association and the Victorian Trained Nurses' Association was appointed to coöperate in arrangements for training nurses, and to deal with all matters arising between the hospital authorities and the nurses. A subcommittee was appointed to inquire into a statement in the report of the inspector of charities that there were seven institutions supported by Government grants and public subscription which treated 40 patients only amongst them and employed 36 persons to attend these 40 patients.—His Excellency the Governor recently opened a new hospital for incurables at Ryde. The institution is entirely due to private philanthropy and began in a very small way.

### *Australasian Massage Association.*

The first annual meeting of delegates to the Australasian Massage Association was opened in Sydney recently, Dr. J. W. Springthorne of Melbourne presiding. The membership of the association was stated to be 302. It was a condition of membership that no one should act as a masseur except under medical supervision and that no member should prescribe remedies unless he were a registered medical practitioner.

### *Claim by a Chinese Herbalist.*

An amusing case was heard in the Central police court, Sydney, on April 16th when a Chinese herbalist proceeded against a former patient to recover £27 odd for services and goods. He had treated him for a sore on the lip, which was subsequently excised by a medical practitioner. The treatment recommended was to rub salt on a cow's nose and then to rub the salt on the patient's lip. The plaintiff was non-suited.

### *Obituary.*

Dr. Roland MacLean of Narracoorte, South Australia, died recently at Seymour, Victoria, where he was spending a holiday. He was only 35 years of age and died from heart failure during a severe attack of influenza.—Mr. Charles Dixon was found dead at Double Bay, Sydney, with a bottle of cyanide of potassium beside him. He was 81 years of age and was stated to be destitute, though he had once been very well off and had lost two fortunes in mining speculations. A verdict of Suicide was returned by the coroner.

June 3rd.

---

Society for the Relief of Widows and Orphans of Medical Men.—A quarterly court of the directors of the above society was held on July 10th, Dr. G. F. Blandford, the President, being in the chair. 21 directors were present. The deaths of Sir William Broadbent and Dr. Robert Barnes were reported; both had held the office of director. The secretary was directed to send letters of condolence to Lady Broadbent and to Mrs. Barnes. Two new members were elected. Since the last quarterly court one of the widows, an annuitant of the charity, had died; her husband paid a life subscription fee of £26 5*s.* and the widow had received in grants the sum of £490. Six letters had been received from widows of medical men asking for relief, but in each instance this had to be refused as their husbands had not been members of the society. The sum of £1300 10*s.* was voted for the half-yearly grants to the 49 widows and 20 orphans at present on the books of the society. Membership is open to any registered medical practitioner who at the time of his election is residing within a 20-mile radius of Charing Cross. Full particulars may be obtained from the secretary at 11, Chandos-street, Cavendish-square, London, W.

# Medical News.

University of Leeds.—The degrees of Bachelor of Medicine and Bachelor of Surgery were conferred on July 11th by the Vice-Chancellor on the following:—

James Paley Bibbey and William Laud Dibb.

The Diploma of Public Health has been conferred on the following:—

William Scatterty, M.D. Aberd., and Fred. Augustus Sharpe.

The following pass lists have been issued:—

SECOND EXAMINATION FOR THE DEGREES OF M.B., CH.B.

*Part I. Anatomy and Physiology.*—C. S. Brown and C. G. K. Sharpe.
*Part II. Materia Medica and Pharmacy.*—J. P. Brown, T. Elliott, J. B. Fisher, W. S. Hart, H. V. Lamb, N. V. Mitton, B. A. Slocombe, G. V. Stockdale, and N. S. Twist.

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.

*Part I.* W. H. Butler and H. Vallow.

FIRST PROFESSIONAL EXAMINATION FOR THE DIPLOMA OF L.D.S.

E. Howden and F. C. Wilson.

University of Glasgow.—The following have satisfied the examiners in the fourth (final) professional examination for M.B., Ch.B.:—

Wallace Wright Adamson, George Victor Anderson, Andrew Hamilton Arnott, David Arthur, B.Sc., Herbert Bertram, Robert Inglis Binning, William Brown, M.A., B.Sc., James Cairncross, Thomas Hay Campbell, Robert Peploe Cartwright, Thomas Goodall Copestake, Alexander Johnston Couper, Andrew Donaldson Cowan, James Robert Craig, Charles Adolphus Crichlow, Neilson Davie, Harold Windley Dempster, John Alexander Doctor, Donald Duncan, William Hunter Duncan, Allan Dunsmuir, Leonard John Dunstone, Alexander Wylic Eadie, William Marley Elliott, Archibald Fairley, Thomas Henderson Forrest, Thomas Forsyth, Berkeley Gale, George Garry, James Gemmell, David Gibson, Henry Maxwell Granger, John Vincent Grant, Thomas Purdie Grant, William Cooper Gunn, Lawrence Hislop, Archibald Hogg, Andrew James Hutton, Charles Lawson Kerr, Alexander Tulloh Inglis Macdonald, Neil MacInnes, M.A., Robert M'Inroy, Joseph Bogue Mackay, Thomas Cooper Mackenzie, Allison David M'Lachlan, Donald Cameron Maclachan, Arthur Norman Roy M'Neill, Charles James Colquhoun Macquarie, Carswell Marshall, James Hogg Martin, Horatio Matthews, William Spence Melville, John Clark Middleton, M.A., B.Sc., John Wilson Miller, Thomas Miller, M.A., James Robertson Mitchell, Hugh Morton, James Muir, Robert Charles Muir, Patrick O'Brien, Daniel M'Kinlay Reid, Donald Renton, Murdoch Mann Rodger, Thomas David Coulthard Ross, Alexander Scott, John Macgregor Smith, John Steedman, Campbell Kay Stevenson, Matthew John Stewart, Lawrence Storey, John Anderson Struthers, John Martin Taylor, Robert Scott Taylor, David Alexander Thomson, M.A., Hugh Johnstone Thomson, John Archibald Thomson, Robert Todd, John Turnbull, Martin Turnbull, William Barrie Watson, John Weir, Frank Ritchie Wilson, Samuel Wilson, M.A., William Mitchell Turner Wilson, Thomas Winning, M.A., Garabed Yeghia Yardumian, and Matthew Young.

*Women.*—Jeannie Montgomery Andrew, Martha Maclean Buchan, Margaret Gardner Forrest, Ella Smith Hill, M.A., Annie M'Crorie, Janet Annie Macvea, Jessie Deans Rankin, M.A., B.Sc., and Jane Isabel Robertson, M.A.

The following passed with distinction in the subjects indicated:—

In (*a*) Surgery and Clinical Surgery, (*b*) Practice of Medicine and Clinical Medicine.—David Arthur, B.Sc., Hugh Morton, and Matthew John Stewart.

In (*a*) Surgery and Clinical Surgery, (*b*) Midwifery.—William Cooper Gunn.

In Surgery and Clinical Surgery.—Jeannie Montgomery Andrew, William Brown, M.A., B.Sc., Martha Maclean Buchan, Thomas Hay Campbell, James Robert Craig, Charles Adolphus Crichlow, Donald Duncan, William Marley Elliott, Archibald Fairley, Margaret Gardner Forrest, Samuel Nichol Galbraith, Berkeley Gale, James Wilfred Georgeson, Henry Maxwell Granger, Thomas Purdie Grant, James Dow Gray, Ella Smith Hill, M.A., Archibald Hogg, Andrew James Hutton, Thomas Miller, M.A., Daniel M'Kinlay Reid, George Waugh Scott, John Steedman, Campbell Kay Stevenson, Lawrence Storey, David Alexander Thomson, M.A., Hugh Johnstone Thomson, Samuel Wilson, M.A., and Matthew Young.

In Practice of Medicine and Clinical Medicine.—John M'Vittie and Horatio Matthews.

In Midwifery.—Allison David M'Lachlan and Alexander Scott.

Foreign University Intelligence.—*Berlin:* Dr. Morgenroth has been recognised as *privat-docent* of Hygiene and Dr. F. Nicolai as *privat-docent* of Physiology.—*Breslau:* Dr. Strecker has been recognised as *privat-docent* of Anatomy and Biology.—*Düsseldorf (Academy of Practical Medicine):* Dr. O. Lubarsch has been appointed Professor of Pathological Anatomy in succession to Dr. M. B. Schmidt who goes to Zürich.—*Freiburg:* Dr. W. Straub of Würzburg has been appointed Professor of Pharmacology.—*Geneva:* Dr. O. Beuttner has been appointed Professor of Midwifery and Gynæcology in succession to the late Dr. A. Jentzer.—

*Gratz:* Dr. Hans Eppinger has been recognised as *privat-docent* of Internal Medicine.—*Strasburg:* Dr. Buer has been recognised as *privat-docent* of Internal Medicine.—*Vienna:* Dr. Karl Funke has been appointed Professor of Surgery in succession to Dr. von Mosetig-Moorhof.—*Zürich:* Dr. Monnier has been recognised as *privat-docent* of Surgery.

CIRRHOSIS OF THE LIVER IN A CHILD.—An inquest was held at the Swansea workhouse on July 12th relative to the death of a male child, aged two years. After hearing the medical evidence the jury returned a verdict that "Death was due to cirrhosis of the liver, caused by alcohol." The coroner severely censured the mother.

CALEDONIAN MEDICAL SOCIETY.—The annual meeting of this society will be held at the Royal Eye Hospital, Bradford, on Thursday, July 25th, under the presidency of Dr. Andrew Little of Bradford. The annual dinner will take place on the same evening in the Midland Hotel, Bradford.

DEATH CAUSED BY SILICATED COTTON.—An inquest was recently held at Plymouth relative to the death of a shipwright who had been working with silicated cotton on board H.M.S. *Minotaur*. The superintendent of Devonport dockyard has now ordered that men using that substance shall wear respirators. These respirators will be made of old bunting, which has been found by experience to be a suitable material.

DONATIONS AND BEQUESTS.—Under the will of the late Dr. Robert Barnes St. George's Hospital will receive £500 and the medical school attached to that institution a like sum. The Epsom College and the "Dreadnought" Seamen's Hospital and St. Thomas's Hospital also receive £500 each. The Royal Maternity Charity will receive £300 and the London Hospital Medical School and the Princess Alice Memorial Hospital, Eastbourne, £200 each.—Lord Kilmorey, chairman of Charing Cross Hospital, has received a second donation of £1000 from Lady Wantage towards the liquidation of the balance due on the building debt.

WEST HAM AND EAST LONDON HOSPITAL.—The foundation-stone of the new building in extension of the present structure is to be laid at 2.30 P.M. on Saturday, July 27th, by the Duchess of Marlborough. The Bishop of St. Albans and the Bishop of Barking, together with the honorary chaplain of the hospital, who has kindly consented that the choir of St. John's Church, Stratford, shall sing a dedicatory hymn, will assist in the ceremony. The architect is Mr. H. Percy Adams. Immediately after the ceremony an "At Home" will be held in the hospital, where light refreshments will be served and a plan of the extension of the existing hospital explained to the visitors.

SCHOOL HYGIENE IN SWITZERLAND.—The Swiss Society for the Study of School Hygiene met recently at St. Gall when the principal subject of debate was the hygiene of the teaching staff. Dr. Sandoz, who opened the discussion with a paper, demanded a medical examination of candidates both on entering and on leaving the training college. He also asked for a survey of the conditions of service in Swiss schools. This survey should be divided into two parts. The medical report should give statistics of mortality and sickness in the several cantons, in the different groups of schools, and among the different classes of teachers. The second part of the inquiry should relate to the social conditions of the teaching profession, the condition of their dwellings, the graduation and amount of their salaries, and the conditions governing insurance and pensions. When these statistics had been collected an attempt should be made through the directors of education to make the conditions of service more uniform in the cantons and to insure that the more salient features of local hygiene should be respected. As regards personal hygiene, Dr. Sandoz advocated the issue of a teachers' vade mecum of information on points particularly important for the profession. In this he was supported by Dr. Zollinger of Zürich, who thought that the training colleges took pupils too early. He wished to see the minimum age of admission raised to 18 years and the hours of professional study reduced to 15–20 per week so that sufficient time might remain for private study and exercise. 15 other speakers took part in the discussion, at the close of which motions were carried to the following effect:—That the attention of educational authorities should be drawn to the care of the teacher's health as being of as much importance as that of the pupil; that all candidates for admission to a training college should be required to pass a medical examination which should be repeated on leaving; that school and personal hygiene should be included in the syllabus of the training college and that the instruction should be given by a qualified medical man. A committee was appointed to approach the Home Office with the view of carrying out a census of teachers and conditions of service and of arranging for the issue of a pocket-book of hygiene for teachers.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Max Schüller of Berlin, whose writings on surgery are known far beyond his own country. He was a pupil of Thiersch and Czermak in Leipsic.—Dr. Emanuel Mendel, medical privy councillor of Berlin.—Dr. Josef Schrank, chief surgeon of police in Vienna and author of various papers on public hygiene.—Dr. Heinrich Jordan, professor of gynæcology in the University of Cracow.—Dr. F. M. Costa of Ajaccio, corresponding member of the Paris Academy of Medicine.

MENTAL ABERRATION OF ENGINE-DRIVERS.—In the *Engineer* of July 12th it is stated that the driver of a freight train standing in the Gare du Nord Station, Brussels, went mad and started the engine at full speed on the line to Antwerp. Regardless of signals the train had passed several stations and had reached Mechlin when the fireman succeeded in overpowering the driver and shutting off steam. We knew of a case many years ago in which an engine-driver on a Welsh railway deliberately drove an engine through the closed doors of an engine-shed. He was not able to explain why he did so and was removed to the county asylum at Abergavenny where he showed no tendency to violence or excitement but ataxia of the legs soon made its appearance.

ROYAL SOCIETY OF MEDICINE: THE VISIT OF THE THERAPEUTICAL SECTION TO OXFORD.—The Therapeutical Section of this society met on July 6th at the University of Oxford, the visit having been arranged for the Therapeutical Society before it dissolved. The members were received at the entrance to Queen's College by Sir Thiselton-Dyer, the first President of the old society. After a glance at the buildings and some of the other colleges he conducted the party to the museum, where Professor W. Osler was waiting ready to point out the beauties of the library and to show the way to the laboratories. The first visited was that of Professor F. Gotch, who explained some of his most recent investigations on the action of the heart. He pointed out that his predecessor, Professor Burdon-Sanderson, had conducted his experiments on the empty heart, which revealed that the ventricular contraction began at the base and terminated at the apex. However, Professor Gotch had, by delicate electrical experiments on the active heart *in situ*, shown that the contraction commenced at the base, travelled to the apex, and terminated at the aortic base; this was graphically displayed and many interesting diagrams and photographs were shown. He next demonstrated a means of at once determining the point of near vision of anyone, the method depending on the different focal lengths of the red and violet rays. Dr. W. Ramsden in the same laboratory had arranged a number of beautiful experiments, which he described, determining the separation of solids in the surface layers of solutions and suspensions. Proceeding to the anatomical rooms Professor Arthur Thomson showed a thorax with complete transposition of the viscera and a dissection of a calf's heart displaying to perfection the auriculo-ventricular bundle (His), and demonstrating how important a structure it was; also some enlarged photographs (stereoscopic) of the very early human embryo. In the pathological rooms there was an exhibition of macroscopic and microscopic specimens and Dr. A. G. Gibson gave a demonstration of Jacquet's polygraph (modified) on a lad. Lunch followed in Queen's College and in the afternoon many places of interest, including the Botanical Gardens, were visited. Professor Osler gave a garden party at his home to which all were invited. He had laid out for inspection his rare and interesting books and everyone thoroughly enjoyed the privilege of examining them. The section dined in the evening at Queen's College. Sir James Sawyer proposed the health of the President, Dr. T. E. Burton Brown, C.I.E., and referred to the good work done by the society of which he was the "father" and the fitness of his being the first

President of the new section. Dr. Burton Brown, in reply, thanked the society of Queen's College for its courtesy in inviting the members of the Therapeutical Section to that College and in placing rooms at the disposal of those who desired to remain until Monday. Dr. R. C. B. Wall, through whose good offices the visit was undertaken, acted as cicerone and showed every attention to the party.

WESTERN EYE INFIRMARY, EXETER.—Colonel Garratt, on July 12th, in the presence of a large gathering, formally unveiled a memorial erected in the main hall of the institution, to the memory of the late Miss G. Kinninmont, for 16 years matron of the infirmary, who died suddenly last year. The memorial consists of a tablet of alabaster, richly ornamented, bearing a suitable inscription.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—Notice is hereby given that on and after Jan. 1st, 1910, all examinations for the Fellowship of this College will be conducted under the scheme of examination now known as Grade 1. No candidate after the above date will in any circumstance be admitted to examination for the Fellowship of this College under the scheme now known as Grade 2, which will then cease to be used.

ST. HELENA.—In his report for the year 1906 Lieutenant-Colonel H. L. Gallwey, Governor of the island, states that the estimated civil population on Dec. 31st was 3526. There were 118 births during the year, of which three were stillborn and 37 illegitimate. Now that the troops have been withdrawn the number of births under the latter category will undoubtedly be less in future. The birth-rate works out at 33·1, as against 35·9 in 1905. 46 deaths occurred during the year, the death-rate being 11·9 per 1000, as compared with 14·5 in 1905. The general health of the colony was excellent and there were no epidemics of any zymotic disease. There were 104 admissions to the hospital during the year, this being the smallest number recorded since the inauguration of the institution. Until a few years ago the islanders had an aversion to going to hospital. Their feelings on this point, however, are quite the reverse now, thanks mainly to the excellent and efficient system under which the hospital is conducted by the colonial surgeon, Dr. W. J. J. Arnold, and his staff of nurses. This tendency of the islanders to go to hospital when necessary, instead of avoiding such a step, is satisfactory under the conditions now existing in St. Helena. When the troops were withdrawn in October, 1906, the colony was left with only one medical man and upon his shoulders falls the responsibility of the medical care of the population. Consequently, it is desirable to move all serious cases to the hospital where they can be immediately under the eyes of the colonial surgeon and the nursing staff. The hospital sustained a severe loss during the year by the retirement through illness of Miss Williams, the lady superintendent of the staff, who had occupied that position for over 11 years. She has been succeeded by Miss Hart, late matron at Kokstad Hospital, South Africa. The colonial surgeon was granted six months' leave of absence, during which period his duties were performed by Mr. H. E. Scoones.

INTERNATIONAL HOUSING CONGRESS.—The annual congress (the eighth) will take place this year in London. The previous meeting places have been Paris, Antwerp, Bordeaux, Brussels, Paris again, Düsseldorf, and Liége. The president of the congress will be Sir Henry Campbell-Bannerman, and there are numerous notable vice-presidents. The congress will be held in the Caxton Hall, Caxton-street, Westminster, and the programme has been arranged to cover from August 3rd to 10th. It is hoped that the Right Hon. John Burns, M.P., President of the Local Government Board, will officially welcome the delegates at the opening session. On August 8th the delegates will leave London and will pay visits on that day and the two following days to Sheffield, Liverpool, Port Sunlight (Birkenhead), and Bournville (Birmingham) to inspect the Cottage Exhibition and municipal housing schemes, the dwellings for the poorest of the poor, and the model villages. On one of the days during the congress a visit will be paid also to the Cottage Exhibition and first garden city at Letchworth and visits will also be made to inspect municipal and other housing schemes in and around London. Invitations to send official representatives have been given to the Governments of France, Germany, Austria, Belgium, Holland, Italy, Sweden, Norway, Spain, and other European countries, the United States, South America, Japan, and the Governments of the British Colonies, and also to the provincial, county, and town councils of those countries, to the local authorities throughout Great Britain and Ireland, and to various associations and private persons specially interested in the subject of housing. The membership subscription is £1 1*s.* for each delegate or member. The chairman is Mr. William Thompson, the vice-chairman is Mr. T. C. Horsfall, and the secretary is Mr. Henry R. Aldridge, all of whom are British members of the International Housing Committee. Councillor W. G. Wilkins, J.P., will act as treasurer to the congress. Any communications on the subject will reach the secretary if addressed to him at 432, West Strand, London, W.C.

WATER-SUPPLY OF BODMIN.—The Local Government Board has declined to sanction the water scheme proposed by the Bodmin (Cornwall) district council on the ground of inadequacy.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Alton Military Hospital Bill.*

THE Alton Military Hospital Bill, which is being proceeded with as a private Bill, has been read a second time in the House of Commons.

### *The University of Durham Bill.*

The University of Durham Bill, which has been introduced into the House of Commons by Mr. HILLS, makes several proposals "to enable the University to discharge its present functions more efficiently." It is proposed to set up a body of seven commissioners whose names are embodied in the Bill. They include the Duke of NORTHUMBERLAND and Sir WILLIAM CHURCH. Their duties under the Bill are to make various regulations of a specified nature with regard to the constituent bodies of the University.

## HOUSE OF COMMONS.

### WEDNESDAY, JULY 10TH.

### *Belfast Corporation and the Forster Green Hospital.*

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the decision of the Belfast Corporation sanctioning an arrangement for ten years with the committee of management of the Forster Green Hospital for Consumption, under which arrangement the hospital authorities were to reserve 25 beds for patients nominated by the corporation and approved as suitable by the medical superintendent of the hospital, the corporation to pay the sum of 35*s.* per week per bed and two members of the corporation to be on the board of governors of the hospital; whether he was aware that the Forster Green Hospital was situated in a hollow and was built and equipped over 30 years ago, before the value of an elevated situation and open-air treatment for consumption became recognised by the best authorities on the disease, and at the present time was quite unsuitable for the treatment of tuberculous patients; whether he was aware that the sum agreed upon was 10*s.* per bed per week in excess of that which was the basis of negotiations between the parties in 1903, and that the opinion of an expert taken by the corporation on the Forster Green Hospital and site was suppressed by the corporation public health committee, despite the appeals of several councillors for its publication; and whether, seeing that it was estimated that the cost of establishing a municipal consumptive hospital for Belfast on a suitable site and equipped in a thoroughly up-to-date manner for 25 patients, would be £12,500, which would be cheaper than the present arrangement, and that the present arrangement was part of a scheme to help the Forster Green Hospital until the sum of £40,000, on the subscription of which a large bequest was contingent, was forthcoming, and that the death-rate from consumption in Belfast was exceptionally high, and seeing that the present arrangement was opposed to the public interest, he would refuse to sanction it and order an inquiry into the whole question.—Mr. BIRRELL (by written answer) replied: The Local Government Board has received an application from the Belfast corporation for sanction to an arrangement with the committee of the Forster Green Hospital on the terms indicated in the first part of the question. A protest has been made to the Board on substantially the same grounds of objection as are recited in the question and the matter is at present under the Board's consideration.

### *The Housing of the Working-classes.*

Sir WALTER FOSTER asked the Prime Minister whether, in consideration of the fact that the Select Committee appointed last year to consider the question of housing reported in December last, and also that a Bill was promised in the King's speech on the opening of Parliament this year, he could give some assurance that a measure for the better housing of the working-classes would be included in the programme for next session.—Sir HENRY CAMPBELL-BANNERMAN furnished the following answer: His Majesty's Government is fully alive to the importance of this question, and my right honourable friend may be assured that it is its intention to introduce legislation dealing with the better housing of the working-classes at the earliest practicable moment. I may add that no effort on its part will be wanting to frame a measure which shall be adequate to the necessities of the case.

### THURSDAY, JULY 11TH.

*The Evils of Alcohol and Public Elementary Schools.*

Mr. WEDGWOOD asked the President of the Board of Education whether his attention had been drawn to a volume by Sir Victor Horsley and Dr. Mary Sturge, entitled "Alcohol and the Human Body," in which it was stated that evidence was steadily accumulating that the stunted frames and weak development of many poor children were at any rate partly due both directly and indirectly to the action of alcohol; that one of the most frequent causes of evil habits and of sexual immorality among young people was the taking of alcohol; that for the sake of national morality as well as physique it was clear that in no form whatever should alcohol be used by the young, either in childhood or adolescence; if he would say what teaching, if any, was given on the subject in the public elementary schools; and whether he would prescribe and enforce lessons thereupon in all schools over which he had any authority.—Mr. MCKENNA replied: The answer to the first part of the question is in the negative, but I would draw my honourable friend's attention to Paragraph 7 in the prefatory memorandum to the new code of Regulations for Public Elementary Schools and to Paragraph 4 in the prefatory memorandum to the new Regulations for Training Colleges just issued which will show, I think, that the Board of Education is doing its best to secure adequate and efficient teaching in the important matters referred to in the honourable Member's question.

*The Plague in India.*

Dr. RUTHERFORD asked the Secretary of State for India whether he had yet received answers from the Government of India to his questions in April in reference to the special medical staff deputed to combat the plague.—Mr. MORLEY answered: I have heard from the Government of India that local governments are engaged in collecting the needful information, but as the statistics wanted extend over a series of years they cannot be procured without some delay. The subject of the plague is engaging my particular attention and full papers will shortly be laid on the table.

*The Plague in Egypt.*

Dr. RUTHERFORD asked the Secretary of State for Foreign Affairs whether he could say what was the number of deaths from plague in Egypt during January, February, March, April, May, and June, respectively, this year.—Sir EDWARD GREY replied: The figures are—January, 8; February, 46; March, 204; April, 147; May, 184; and June (up to 17th), 111.

*Medical Inspection of School Children.*

In the course of the discussion on the Education Vote in Committee of Supply several Members urged the President of the Board of Education to make provision for organising a central medical department to assist and guide local authorities in instituting the medical inspection of school children.—Mr. MCKENNA, in reply, said that if the Bill dealing with this subject passed it was the intention of the Board of Education to establish a medical bureau which would guide and advise the local authorities as to the nature of the work they would have to do under this Act. He hoped that when the names were published the House would be fully satisfied.

### MONDAY, JULY 15TH.

*Allowances to the Royal Army Medical Corps.*

Mr. CAMPBELL asked the Secretary of State for War whether he was aware that officers of the Royal Army Medical Corps, under the substantive rank of colonel but holding the appointment of senior medical officer in a command in India, had been refused the additional daily allowance of 5*s.* to which such officers were by the terms of Paragraph 4 of the Army Order of Jan. 10th, 1907, expressly entitled if serving abroad, and that such refusal had been justified on the ground that service in India was not service abroad within the meaning of the Army Order; and, if so, seeing that such a construction was a direct violation of the letter as well as of the spirit of the Order in question he proposed to take any and, if any, what action in the matter.—Mr. HOBHOUSE (the Under Secretary for India) answered: The Army Order referred to published a Royal Warrant modifying certain paragraphs of the Pay Warrant of the army, the preamble of which specially exempts the Indian Empire from the sphere within which the warrant is in force. Officers of the Royal Army Medical Corps serving in India receive special Indian rates of pay as laid down in the Indian army regulations and it is not proposed to disturb this arrangement.

*The Belfast Health Commission.*

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware of the fact that the Belfast Health Commission, consisting of Colonel Harding, an ex-Lord Mayor of Leeds; Dr. Mair, a medical inspector of the Local Government Board of England; Dr. Chalmers of Glasgow; and two inspectors of the Irish Local Government Board, appointed on Feb. 11th, 1907, to inquire into the cause of the high death-rate in Belfast, had held 24 sittings, all the evidence at which had been taken on oath, and whether he would state what statutory authority any person or persons other than inspectors of the Local Government Board had to hold inquiries under Section 209 of the Public Health (Ireland) Act, 1878, or to take evidence on oath.—Mr. BIRRELL answered: The number of sittings held so far by the Commission referred to is correctly stated in the question. All the evidence has been taken on oath. There is nothing to prevent other persons from being associated with inspectors of the Local Government Board in holding inquiries under Section 209 of the Public Health (Ireland) Act, 1878. The power of administering an oath is, however, vested only in inspectors and this power has not been exercised by any of the other gentlemen on the Commission.

*Epileptics and the Workmen's Compensation Act.*

Mr. GULLAND asked the Secretary of State for the Home Department whether he was aware that throughout the country there were many workers subject to epileptic fits; that under the Workmen's Compensation Act the insurance companies would not undertake the risk of insuring them against accidents; that, contracting out not being allowed, they were in danger of losing their employment; and what steps, if any, he proposed to take to prevent this class from being deprived of the opportunity of earning a livelihood.—Mr. GLADSTONE said in reply: I have no official information on the matters referred to in the question. I believe, however, it is a fact that quite apart from the Workmen's Compensation Act epileptics have difficulty in finding employment. The new Act may aggravate that difficulty, though such cases might have been provided for under an amendment which I moved on the report stage of the Bill and which after being left to the judgment of the House was rejected. The matter is one which obviously cannot be considered with reference merely to the effects of the Act, and as my honourable friend will be aware the whole question of the treatment of the feeble minded, including epileptics, is under the consideration of a Royal Commission the report of which may be expected shortly.

*The International Congress on School Hygiene.*

Dr. RUTHERFORD asked the President of the Board of Education whether His Majesty's Government would invite foreign powers to send delegates to the International Congress on School Hygiene to be held in London next month.

Mr. ALDEN further asked the Secretary to the Board of Education whether he would consider the possibility of giving an official reception to the delegates of the International Congress on School Hygiene.

Mr. RAMSAY MACDONALD also asked the right honourable gentleman whether the Board was taking any official part in the International Congress on School Hygiene; whether the Board had approached the Foreign Office with a view of securing the official representation of foreign countries at the Congress; whether any communication between the two offices on this subject had taken place; and what steps his department had taken to carry out the promise made by its representative at Nuremberg, as printed in the transactions of the Congress, that the Government would officially recognise the Congress and would feel honoured by its presence in London.—Mr. MCKENNA (in replying to the three questions together) said: The Board of Education, while considering it inadvisable to comply with the suggestion of the hon. Member for Tottenham, is greatly interested in the approaching Congress on School Hygiene and has intimated its intention of sending three of its officers to attend it. I hope to derive much information from its proceedings and I have done my best to facilitate its deliberations by arranging for special investigations and reports to be prepared in elucidation of some important matters that will come under discussion. The various foreign countries have already received invitations which were forwarded to the respective Governments through the Foreign Office. A considerable number have signified their intention to send representatives. The University of London is finding rooms for the Congress and I am also placing certain rooms at South Kensington at its disposal. I have thus been able to carry out to the fullest extent all that was promised by the Board's representative at the Nuremberg conference.

### TUESDAY, JULY 16TH.

*The Plague in India.*

Dr. RUTHERFORD asked the Secretary of State for India what was the number of deaths from plague during June in the Punjab and in the whole of India; and what was the total for the six months in the Punjab and in India.—Mr. MORLEY replied: The figures for June are: Punjab, 58,821 deaths; whole of India, 69,064. For six months ending June: Punjab, 632,953; whole of India, 1,060,067.

*The Registration of Nurses.*

Mr. HART-DAVIES asked the Secretary of State for the Home Department whether he would consider the advisability of establishing a Government system of certificates and registration of trained nurses.—Mr. GLADSTONE answered: This matter has been under consideration for some time, but serious difficulties stand in the way of the establishment of any such system as is proposed. I am not prepared to take any action in the matter.

### WEDNESDAY, JULY 17TH.

*The Increase of Trachoma.*

Mr. LEVERTON HARRIS asked the Secretary of State for the Home Department whether his attention had been drawn to the increase in cases entering hospitals suffering from trachoma, and what steps were being taken to prevent the spread of this contagious disease.—Mr. GLADSTONE answered: Trachoma comes within my jurisdiction only so far as the operation of the Aliens Act is concerned. It is a disease on account of which alien passengers who are subject to the provisions of that Act may be excluded from this country, and since that Act came into force numerous cases have been excluded.

## BOOKS, ETC., RECEIVED.

BEMROSE AND SONS, LIMITED, 4, Snow Hill, London, E.C., and Derby.

The Book of the League of Mercy. Published under the Patronage of Their Royal Highnesses the Prince and Princess of Wales, Grand President and Lady Grand President of the League of Mercy, Their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein, Her Royal Highness Princess Alexander of Teck, Lady President of the Epsom-Esher (with Godstone-Caterham) and Kingston-Surbiton (with Wandsworth-Putney) Districts, His Serene Highness Prince Alexander George of Teck, K.C.V.O., D.S.O., President of the Kingston-Surbiton (with Wandsworth-Putney) District, Her Highness Princess Victoria of Schleswig-Holstein, Lady President of the Berks, Bucks, Oxon, and Hants Districts, and Her Highness Princess Louise Augusta of Schleswig-Holstein. Edited by Rev. P. H. Ditchfield, M.A., F.S.A. Price 5*s.* net.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, Toronto, and Melbourne.

Bilharziosis. By Frank Cole Madden, M.D. Melb., F.R.C.S. Eng., Professor of Surgery, Egyptian Government School of Medicine, Senior Surgeon, Kasr-el-Ainy Hospital, Cairo. Price 3*s.* 6*d.* net.

CLARENDON PRESS, Oxford.

Surgical Instruments in Greek and Roman Times. By John Stewart Milne, M.A., M.D. Aberd., Keith Gold Medallist in Clinical Surgery. Price 14*s.* net.

CLARKE, JAMES, AND CO., 13 and 14, Fleet-street, London, E.C.

Health in the Homo Life. By Honnor Morten, Certificated Nurse and Registered Midwife, Formerly Health Lecturer under the London County Council, Author of "The Nurses' Dictionary," "How to Treat Accidents and Illnesses," etc. Price 2*s.* 6*d.* net.

Enke, Ferdinand, Stuttgart.

Die Asthenische Konstitutionskrankheit. (Asthenia Universalis Congenita. Morbus Asthenicus.) Von Prof. Dr. Berthold Stiller. Price M.8.

Frowde, Henry, Oxford University Press, London, New York, and Toronto.

The World's Classics. CXIX. The History of Margaret Catchpole, A Suffolk Girl. By Richard Cobbold. With an Introduction by Clement Shorter. A New Spirit of the Age. Edited by Richard Hengist Horne. With an Introduction by Walter Jerrold. Aristophanes. Four Plays translated into English Verse, by John Hookham Frere. With an Introduction by W. W. Merry, D.D., Rector, of Lincoln College, Oxford. Price, cloth, 1*s.* each, net.

The World's Classics. Pocket Edition. The Poems of George Herbert. With an Introduction by Arthur Waugh. The Town, its Memorable Characters and Events. By Leigh Hunt. Edited with an Introduction and Notes by Austin Dobson. Price, art cloth, 1*s.* each, net.

J. B. Lippincott Company, London and Philadelphia.

International Clinics. Edited by W. T. Longcope, M.D., Philadelphia, U.S.A., with Collaboration. Volume II. Seventeenth Series. 1907. Price not stated.

Kegan Paul, Trench, Trübner, and Co., Limited, Dryden House, Gerrard-street, London, W.

The New Physics and its Evolution. By Lucien Poincaré, Inspecteur-Général de l'Instruction Publique. Being the authorised translation of "La Physique Moderne, son évolution." (The International Scientific Series. Edited by F. Legge.) Price 5*s.*

Kimpton, Henry, 13, Furnival-street, Holborn, London, E.C. (Stenhouse, Alexander, 40 and 42, University-avenue, Glasgow.)

A Text-book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Twelfth edition, enlarged, thoroughly revised and largely rewritten. Price 21*s.* net.

Littlebury and Company, The Worcester Press, Worcester.

The City of Worcester Official Handbook. Price 6*d.* net.

Macmillan Company, New York. (Macmillan and Co., Limited, London.)

The Common Bacterial Infections of the Digestive Tract and the Intoxications arising from Them. By C. A. Herter, M.D., Professor of Pharmacology and Therapeutics in Columbia University, Consulting Physician to the City Hospital, New York. Price 6*s.* 6*d.* net.

Pentland, Young J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by Alexis Thomson, M.D., F.R.C.S. Ed., and Harvey Littlejohn, M.B., F.R.C.S. Ed. New Series. Vol. XXI. Price not stated.

Richards, E. Grant, 7, Carlton-street, London, S.W.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland. In Twenty Parts. Part VI. Price 7*s.* 6*d.* net.

Rothschild, Dr. Walter, Berlin and Leipzig (Churchill, J. and A., London. Boyveau and Chevillet, Paris.)

The Medical Translator. Edited by Paul Blaschke. With the Assistance of Dr. Gustave Bresin, Dr. E. H. Shepard, Assistant Professor at the University of Syracuse, U.S.A., and Robert Lewin, Professor of the German Language, etc. First Part. A Dictionary of Medical Conversation. English-German. Abteilung I. Deutsch-Englisch. Price 4*s* each, net. Abteilung II. Medizinisches Wörterbuch in Deutscher, Französischer, Englischer Sprache in einem Alphabet. Price 8*s.* net.

Sanitary Publishing Company, Limited, 5, Fetter-lane, Fleet-street, London, E.C.

Ventilation, Heating, and Lighting. By William H. Maxwell, Assoc. M. Inst. C.E., Borough and Waterworks Engineer, Tunbridge Wells Corporation. Second edition, revised and enlarged. Price 3*s.* net.

Modern Drainage Inspection and Sanitary Surveys. By Gerard J. G. Jensen, C.E. Second edition, revised and enlarged. Price 2*s.* 6*d.* net.

Springer, Julius, Monbijouplatz, 3, Berlin.

Mikroskopie und Chemie am Krankenbett. Für Studierende und Aerzte bearbeitet. Von Professor Dr. H. Lenhartz, Direktor des Eppendorfer Krankenhauses in Hamburg. Fünfte, wesentlich umgearbeitete Auflage. Price, geb., M.9.

Trewby, Arthur, Fenton House, Hampstead Heath, London.

Healthy Boyhood. By Arthur Trewby, M.A. With an Introduction by Sir Dyce Duckworth, M.D., LL.D., and a Foreword by Field-Marshall Earl Roberts, K.G., K.P., V.C., O.M., P.C., G.C.B., G.C.S.I., G.C.I.E., D.C.L., LL.D. (Copies may be obtained on written application to the Author.) Price 1*s.* 6*d.*, post free.

University Correspondence College, Burlington House, Cambridge. (32, Red Lion-square, Holborn, London, W.C.)

Matriculation Directory. No. XLVI., June, 1907. With Articles on Text-books. Price 1*s.* net.

Wood, William, and Company, 51, Fifth-avenue, New York.

American Practice of Surgery. Editors: Joseph D. Bryant, M.D., LL D., and Albert H. Buck, M.D., of New York City. Complete in eight volumes. Volume III. Price not stated.

Wright, John and Co., Bristol. (Simpkin, Marshall, Hamilton, Kent, and Co., Limited, London.)

Through Jamaica with a Kodak. By Alfred Leader. With Introductory Notes by His Grace the Archbishop of the West Indies and Sir Alfred L. Jones, K.C.M.G. Price 6*s.* net.

The Clinical Use of Prisms and the Decentring of Lenses. By Ernest E. Maddox, M.D., F.R.C.S. Ed., late Syme Surgical Fellow of Edinburgh University; Ophthalmic Surgeon, Royal Victoria and Royal Boscombe Hospitals, Edinburgh. Fifth edition, revised and enlarged. Price 5*s.* 6*d.* net.

A Pharmacopœia for Diseases of the Skin. Edited by James Startin, Senior Surgeon to the London Skin Hospital, Fitzroy-square. Sixth edition. Price 2*s.* 6*d.*

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

Coombs, Carey F., M.D., B.S. Lond., has been appointed Demonstrator in Dental Bacteriology at University College, Bristol.

Dimock, Horace, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at Addenbrooke's Hospital, Cambridge.

Dowling, E. A. G., L.R.C.P., M.R.C.S., L.D.S., has been appointed Lecturer in Dental Anatomy, Physiology, and Dental Histology at University College, Bristol.

Elgood, Olive, M.S. Lond., has been appointed Honorary Anæsthetist to the Birmingham and Midland Dental Hospital.

Evans, William Owen, L.R.C.P., L.R.C.S., L.M. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer and Medical Officer to the Workhouse by the Pontardawe (Glamorganshire) Board of Guardians.

Eyre, J. W. H., M.D., M.S. Durh., has been appointed Bacteriologist to Guy's Hospital.

Friend, Julius, L.S.A., has been appointed Medical Officer to the No. 2 District by the Leeds Board of Guardians.

Hitchcock, Norman, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Brixton Dispensary.

Jones, John Arnold, M.B., Ch.B. Vict., F.R.C.S. Edin., has been appointed Honorary Assistant Aural Surgeon to the Manchester Eye and Ear Hospital.

Lochrane, Frank J., M.D., B.S. Glasg., has been appointed Honorary Gynæcologist to the Derbyshire Royal Infirmary.

McEwan, Peter, M.B., Ch.B., F.R.C.S. Edin., has been appointed Resident Surgical Officer at the Bradford Royal Infirmary.

Pedley, F. Newland, F.R.C.S. Eng., L.D.S., has been appointed Consulting Dental Surgeon to Guy's Hospital.

Perry, Frederick W., L.D.S., has been appointed Demonstrator in Dental Anatomy, Physiology, and Dental Histology at University College, Bristol.

Pillin, H. L., L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to Guy's Hospital.

Price, Henry J., F.R.C.S. Eng., has been appointed Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 38, and to be attached more particularly to Braintree, Chelmsford, Colchester, Dunmow, Halstead, Harwich, and Maldon County Courts.

Rowlands, R. P., F.R.C.S. Eng., M.S. Lond., has been appointed Assistant Surgeon-in-Charge of the newly sanctioned Orthopædic Department at Guy's Hospital.

Watson, C. Gordon, F.R.C.S. Eng., has been appointed Surgical Registrar to St. Bartholomew's Hospital.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

Birmingham, University of.—Walter Myers Travelling Studentship. Value £150.

Bolingbroke Hospital.—Assistant Surgeon.

Bradford Children's Hospital.—House Surgeon. Salary £100.

Cambridge, Cambridgeshire Lunatic Asylum, Fulbourn.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

Cardiff Infirmary (General Hospital).—House Physician for six months. Salary £30, with board, residence, and laundry.

Carmarthenshire Infirmary.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant for three months.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician, for six months. Salary at rate of £50 per annum, with board, washing, and residence.

Coventry and Warwickshire Hospital.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

Devonport, Royal Albert Hospital.—Resident Medical Officer. Salary £100 per annum, with apartments, board, fuel, and lights.

Dover, Royal Victoria Hospital.—House Surgeon, unmarried. Salary £100 a year, with board, lodging, and washing.

Egypt, Public Health Department.—Sub-Inspector of Ophthalmic Hospitals.

Gloucester, General Infirmary and the Gloucestershire Eye Institution.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

Halifax, Royal Halifax Infirmary.—Second House Surgeon. Salary £100 per annum, with residence, board, and washing.

Hospital for Sick Children, Great Ormond-street, London, W.C.—House Physician, House Surgeon, Assistant Casualty Officer.

Hull, Royal Infirmary.—Casualty House Surgeon. Salary £50, with board and lodging.

Italian Hospital, Queen-square, London, W.C.—Honorary Assistant Physician.

LEEDS INFECTIOUS DISEASES HOSPITAL, Seacroft.—Assistant Resident Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

LEEDS UNION INFIRMARY, Beckett-street.—Assistant Medical Officer, unmarried. Salary £120 per annum, with board, washing, apartments, and attendance.

LENZIE, WOODILEE ASYLUM.—Junior Assistant Medical Officer. Salary £125 per annum, with board, washing, &c.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary £30, with board, residence, and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Jenner Memorial Studentship. Value £150.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Resident Pathologist and Registrar. Salary £100, with board and residence.

LONDON HOSPITAL, Whitechapel, E.—Surgeon-Dentist.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

NORFOLK AND NORWICH HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also Two Assistant House Surgeons for six months. Salary £20, with board, lodging, and washing.

NORWICH, JENNY LIND INFIRMARY FOR CHILDREN, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, residence, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months, and unmarried. Salaries at rate of £80 and £40 per annum, with board, &c.

PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60, with board.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months, renewable. Salary £50, with board, residence, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Anæsthetist.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone road, N.W.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROTHERAM HOSPITAL AND DISPENSARY.—Senior House Surgeon, also Assistant House Surgeon. Salary £110 and £80 per annum respectively, with rooms, commons, and washing.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Clinical Pathologist and Demonstrator on Bacteriology. Stipend £75 a year.

ROYAL EYE HOSPITAL, St. George's-circus, S.E.—Refraction Assistant. Salary £40 per annum. Also Clinical Assistants.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Honorary Assistant Anæsthetist.

SALFORD UNION INFIRMARY, Hope, Pendleton.—Resident Medical Officer. Salary £130 per annum, with apartments and attendance.

STAFFORD, STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150, rising to £200, with apartments, board, and washing.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

SUNDERLAND INFIRMARY.—House Physician and Pathologist, also House Surgeon. Salary in each case £80 per annum, with board, residence, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with, board, residence, and laundry. Also Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and laundry.

WEST HAM INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Medical Superintendent. Salary at rate of £700 per annum, with house, light, and coal.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Anæsthetist.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

# Births, Marriages, and Deaths.

## BIRTHS.

DAY.—On July 12th, at Wetherby, Yorkshire, the wife of W. F. L. Day, M.B., B.C., M.R.C.S., L.R.C.P., of a son.

KEELING.—On July 12th, at Market Bosworth, Nuneaton, the wife of Hugh N. Keeling, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

NEWBOLT.—On July 16th, at 42, Catharine-street, Liverpool, the wife of George Palmerston Newbolt, F.R.C.S., of a daughter.

THOMPSON.—On July 16th, at 3, Park Place-gardens, Paddington, W., the wife of Dr. Peter Thompson, King's College, London, of a son.

## MARRIAGE.

GLANVILLE—BELL.—On July 11th, at Hampstead Parish Church, by the Rev. Maurice E. Hoets, vicar of Weston, Bath, uncle of the bride, assisted by the Rev. Brook Deedes, vicar of the parish, William M. G. Glanville, M.B., B.Ch. Oxon., of Guyon House, Hampstead, elder son of the late Rev. J. F. M. Glanville and of Mrs. Glanville of Bristol, to Muriel, eldest daughter of Edward Bell of The Mount, Hampstead.

## DEATH.

DUNSMURE.—On July 15th, at Queen-street, Edinburgh, James Dunsmure, M.D., LL.D., F.R.C.S.E.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## HORSE v. OX TONGUE.

THE medical officer of health of Stepney, Mr. D. L. Thomas, draws attention in a recent report to the fact that a horse's tongue is hardly ever seen exposed for sale as cat's meat. He asks, what happens to all the tongues of all the horses slaughtered in London every year. There should be no difficulty in distinguishing between the two, for the tongue of the ox has a narrow end and a rough upper surface, while that of the horse has a broad end and a smooth upper surface. In our opinion it is quite possible that many of the tongues sold as ox tongues are really those of the horse. If a tongue be boiled, pickled, smoked, and the outer epithellal surface be removed by scraping we doubt whether anyone could tell if it were that of the horse or the ox. The difference in the shape of the ends is easily concealed by pressing and rolling. We have never consciously eaten the tongue of a horse, but there is no reason why it should not be just as good as that of the ox, provided that both came from healthy animals. Substitution in food is a common trade deception. Thus, so-called turbot is frequently some other fish and in many cases the fish sold as whiting is really the whiting pout and not the silver whiting. The substitute is in this last case just as wholesome and of very nearly the same flavour, but in the case of the turbot no other fish has the same flavour. Nevertheless, the buyer should get what he asks for.

## AN ETHICAL POINT.

*To the Editors of* THE LANCET.

SIRS,—I shall be glad if you will give me your ruling on this case, whether I acted in accordance with the ethical rule of the profession or not. A lady sent her maid to see me a few weeks ago. She was anæmic and had a history of amenorrhœa extending over a period of seven months. I asked if there was any chance of her being pregnant. This she with great warmth denied. I gave an aperient iron mixture and when seeing her mistress did not mention my suspicion. I stated she was being treated for the anæmia. Last week I was hurriedly summoned and found the lady from home and the maid in labour. When told her condition the maid said that it was quite impossible. I sent her home and now the mistress says it was my duty to mention my suspicion to her as she was paying the fee.

I am, Sirs, yours faithfully,

M.D.

July 14th, 1907.

⁂ The duty of the medical man seems to us to be first towards his patient. We know the difficulty which arises when applying this rule in cases where an employer is the client and is paying the patient's fees, but we still consider that the rule holds good. We think M.D. would have been wrong to mention his suspicion.—ED. L.

## A BLATANT ADVERTISEMENT.

WE have received from a medical correspondent a leaflet which he says was handed in at his house. This leaflet sets out, in the regular quack style, the accomplishments of a Mr. Halliday of Queen-street, Heckmondwike, thus: "Mr. H. being a Surgeon Accoucheur, Licentiate in Midwifery and Diseases of Women and Children of the Coombe Lying-in Hospital, Dublin, Dispensing Chemist, &c., &c., and having been engaged 38 years in the practice of Medicine by Botanic Remedies, is enabled to perform a cure in very many cases when all other treatment has failed." "Mr. H." then proceeds to ask the usual questions of his kind about the symptoms of chronic dyspepsia. "Have you pain or wind on the stomach? Have you Sickness, Headache, Dizziness, Sour Risings in the Mouth after eating, with aching pains between the Shoulder Blades?" and so on. If Mr. Halliday is a Licentiate in Midwifery of the Coombe Lying-in Hospital of Dublin, the authorities of that institution had better point out to him that such advertisement is not suitable. If he declines to alter his ways they might consider the advisability of removing his name from the register of the hospital.

## THE HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.

THERE has recently been a good deal of discussion between the staff and governors of the Hastings, St. Leonards, and East Sussex Hospital respecting the qualifications required for the office of physician to the hospital. Until recently the rule regulating the appointment ran: "No person shall be elected to the office of physician unless he be a Fellow, or Member by examination, of the Royal College of Physicians of London, Edinburgh, or Ireland, and be a graduate in medicine of one of the Universities of the United Kingdom, and be also duly registered under the 'Medical Acts.'" Until 1904 the same rule applied to the assistant physician, but a difficulty having then arisen in filling that office it was agreed that a medical degree of the United Kingdom should be made a sufficient qualification for it. The matter was recently revived by the resignation of Dr. Frederick Bagshawe after 35 years' service, when there was found to be no active practitioner in the town with the necessary qualification for the post of physician. The whole of the hospital staff, with the exception of Dr. Bagshawe, was in favour of rescinding the "Membership" qualification, as was the general body of practitioners in the town, who opposed the introduction of another medical man for the sole purpose of filling a hospital post. On July 4th an extraordinary meeting of governors was held at the hospital to consider the motion that in the above rule the word "or" should be substituted for the word "and." There was a large attendance which was addressed by Mr. Cecil Christopherson who proposed the motion and other members of the hospital staff and governing body who supported it. Dr. Bagshawe, Dr. Norman Moore, and Lieutenant-Colonel Whittle spoke against it, arguing that the hospital would lose some of its status by the proposed alteration. The meeting was, however, thoroughly convinced by the arguments in favour of the change, the chief of which consisted in a citation of the arrangements at similar principal hospitals and its expediency in meeting the local professional conditions. It was agreed, moreover, that the hospital could be most efficiently conducted by medical graduates at present practising in the town. The motion was accordingly carried by a large majority.

### COLOTOMY—CONSTIPATION.

*To the Editors of* THE LANCET.

SIRS,—Would any of your readers kindly suggest drugs or other treatment for a colotomy case (the operation was *not* for malignant disease) where the bowels are obstinately constipated and not responsive to even strong drugs—e.g., two-thirds of a grain each of aloin and jalapin at bed-time. The effect of cascara is uncertain and unsatisfactory and calomel (one or two grains) followed by saline too purgative, producing liquid evacuations only. Dietary with fruits, vegetables, and brown bread is useless for a daily move. What is required is a drug or treatment which will produce daily one or two pultaceous motions before midday. Is it possible to adopt any treatment which would achieve this end? The general health of the patient is fair.

I am, Sirs, yours faithfully,
July 15th, 1907. THE SUFFERER (A MEDICAL MAN).

### A GARBAGE MONGER HEAVILY FINED.

Ernest Henry Harrison, a butcher of Holbeach St. John's, Lincolnshire, was recently fined £20 at the Guildhall police court in respect of each of three carcasses of pigs consigned by him to the London Central Meat Market. The evidence of Dr. W. Collingridge was that when he saw the carcasses they were "obviously" unfit for human food, and even the defendant, who swore that he believed them to be sound, admitted that when he sent them he realised that they were not of prime or first-class quality. The alternative of going to prison for a month was given him should he not pay the fines, amounting to £60 with £4 14*s.* 6*d.* costs, inflicted by Alderman Sir George Smallman who was informed before he passed sentence that the defendant had been cautioned several times as to the doubtful quality of meat which he had consigned to the market.

### A PLEA FOR VENESECTION.

*To the Editors of* THE LANCET.

SIRS,—The painful incident, which has just occurred, of a Member's sudden death in the House of Commons tragically draws attention to the reluctance of the medical profession nowadays to practise venesection. Quoting from the papers I learn that "Sir Alfred looked very flushed" and that "a hypodermic injection of ether was made.' Without doubt such a patient 80 years ago would have been bled freely, and probably with benefit. The article under "Looking Back" in your journal of June 15th is instructive in comparison.

I am, Sirs, yours faithfully,
July 10th, 1907. G. P.

### A STUDENT'S COMPLAINT.

*To the Editors of* THE LANCET.

SIRS,—In these times when the medical student has so much reading to do his labours are added to by many publishers putting books before him which are anything but a comfort to read. They use shiny paper, the type is too close together, is too faint and indistinct. The "thick down-strokes and thin up-strokes" kind of letter is distinctly irritating to the sight. Americans and Germans err more than we English but I am afraid the tendency is growing here to imitate their book faults. If your reviewer when noticing books in your columns would condemn all books sent to him which were not printed upon dull paper and with good, *square, heavy* type he would do a great service to not only the reader but to the authors themselves whose labours are often spoilt by the printing and paper of the books they write. Some think that if a large type is used that is sufficient. It is not the size but the shape of the letter which makes for distinctness. The idea seems to be nowadays to cram as many letters into a line as possible.

I am, Sirs, yours faithfully,
July 13th, 1907. SIGHT NORMAL.

⁎⁎⁎ We sympathise with the criticisms of our correspondent, who will find some remarks bearing upon the subject in THE LANCET of Oct. 20th, 1906. The use of shiny paper is rendered necessary by the very general employment of half-tone blocks for illustrations. These are much cheaper and in some cases more satisfactory than the old line blocks, and there is a very considerable advantage to the reader in having the illustrations in the text. It is difficult therefore to suggest a remedy, though every endeavour should be made to use the more legible kinds of type, and in this respect, as our correspondent says, our books compare favourably with foreign publications.—ED. L.

### THE COST OF A UNIFORM FOR THE ARMY MEDICAL RESERVE.

*To the Editors of* THE LANCET.

SIRS,—In answer to your correspondent's query in THE LANCET of June 29th, the articles required are: Khaki breeches and tunic, one pair puttees, six collars for uniform, one pair brown boots with plain toe-caps (heavily nailed), forage cap, and Sam Browne belt. The cost comes to under £10. No sword is required, and to get one is merely wasting £3 5*s.* Officers should take down their civilian evening dress and a lounge suit. If they do not spend much on outside amusements, such as tennis, boating, &c., they will make a clear profit of about £24 on the two months besides having a very good time.

I am, Sirs, yours faithfully,
July 15th, 1907. A. B. C.

### SPEED VERSUS COMFORT ON RAILWAYS.

*To the Editors of* THE LANCET.

SIRS,—Referring to a letter under this heading in THE LANCET of July 6th, signed "An Occasional Traveller," and his reference to my 24 hours' drive at Brooklands, my drive was undertaken for the purpose of making some interesting tests: first, as to whether one person could give the necessary concentration to drive 60 m.p.h. for 24 hours continuously; and secondly, to prove that a British made motor-car could travel at a high rate of speed for a longer time continuously than any other vehicle had ever run during the history of the world. Both these points were proved, and I think it was no disadvantage to the whole British motor industry that the drive was undertaken.

Your correspondent's statement that he could make a motor-car travel a greater distance without a driver is interesting, and I shall be very pleased to lend him a car similar to that which I used if he will undertake the test he suggests he can make forthwith. Personally, I doubt his ability to make good what he suggests he can do.

I am, Sirs, yours faithfully,
New Burlington-street, London, W., July 15th, 1907. S. F. EDGE.

◆

*Alpha.*—We are sorry to be unable to construe the meaning of the figures.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (27th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 p.m.), the Royal London Ophthalmic (10 a.m.), the Royal Westminster Ophthalmic (1.30 p.m.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**TUESDAY** (23rd).—Medico-Legal Society (22, Albemarle-street, W.).—8.15 p.m.: Annual General Meeting. Election of Officers and Council. Discussion on the Teaching of Medical Jurisprudence in Paris and in London (opened by Dr. G. Pernet).

**THURSDAY** (25th).—Medico-Psychological Association of Great Britain and Ireland (11, Chandos-street, Cavendish-square, W.).—9.30 a.m.: Council Meeting. 11 a.m.: Annual Meeting. Election of Officers and Council. 2 p.m.: Address:—The President (Dr. P. W. MacDonald). Paper:—Dr. C. C. Easterbrook: The Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air. 7.15 for 7.30 p.m.: Annual Dinner at the Whitehall Rooms, Hôtel Metropole.

**FRIDAY** (26th).—Medico-Psychological Association of Great Britain and Ireland (11, Chandos-street, Cavendish-square, W.).—11 a.m.: Discussion on Psychiatry as a Part of Public Medicine (introduced by Dr. T. S. Clouston). Clinical Demonstration and Paper:—Dr. A. Wilson: The Psychology of Crime. Paper:—Dr. H. Devine: A Case of Katatonia in a Congenital Deaf Mute (illustrated with lantern slides). 2 p.m.: Communication.—Dr. W. F. Robertson and Dr. G. D. McRae: Observations on the Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Anti sera. Paper:—Dr. L. C. Bruce: Clinical Observations on Certain Cases of Mental Depression.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (22nd).—Post-Graduate College (West London Hospital, Hammersmith road, W.).—2 p.m.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 p.m.: Operations.

North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—9.30 a.m.: Surgical Out-patient (Mr. H. Evans). 2.30 p.m.: Medical Out-patient (Dr. Whipham); Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

**TUESDAY** (23rd).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 a.m.: Dr. Moullin: Gynæcological Operations. 2 p.m.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 p.m.: Operations. Dr. Abraham: Diseases of the Skin.

North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10.30 a.m.: Medical Out-patient (Dr. Auld). 2.30 p.m.: Gynæcological Out-patient (Dr. Giles). Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

Central London Throat and Ear Hospital (Gray's Inn-road, W.C.).—3.45 p.m.: Demonstration:—Dr. W. Wingrave: Clinical Pathology.

**WEDNESDAY** (24th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 a.m.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 p.m.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 p.m.: Operations. Dr. D. Robinson: Diseases of Women.

North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 p.m.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipham).

**THURSDAY** (25th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—2 p.m.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 p.m.: Operations.

North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.).—2.30 p.m.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 p.m.: Medical In-patient (Dr. Chappel).

**FRIDAY** (26th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 a.m.: Dr. Moullin: Gynæcological Operations. 2 p.m.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 p.m.: Operations. Dr. Abraham: Diseases of the Skin.

North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N.).—9.30 a.m.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 p.m.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 p.m.: Medical In-patient (Dr. Leslie).

Central London Throat and Ear Hospital (Gray's Inn-road, W.C.).—3.45 p.m.: Demonstration: Dr. W. Wingrave: Clinical Pathology.

**SATURDAY** (27th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 a.m.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 p.m.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 p.m.: Operations. Dr. D. Robinson: Diseases of Women.

## EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of The Lancet should be addressed *exclusively* "To the Editors," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* The Lancet *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

The Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in The Lancet of July 6th.

### VOLUMES AND CASES.

Volumes for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of The Lancet at their Offices, 423, Strand, London, W.C., are dealt with by them. Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach The Lancet Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to The Lancet Offices.

Subscribers, by sending their subscriptions direct to The Lancet Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The Colonial and Foreign Edition (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from The Lancet Offices or from Agents, are:—

| For the United Kingdom. | | To the Colonies and Abroad. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. Charles Good, The Lancet Offices, 423, Strand, London, W.C.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

The Lancet Office, July 18th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| July 12 | 30·39 | N.W. | ... | 118 | 70 | 53 | 52 | 59 | Fine |
| " 13 | 30·25 | W. | ... | 120 | 72 | 52 | 56 | 60 | Fine |
| " 14 | 30·24 | S.W. | ... | 108 | 70 | 58 | 58 | 61 | Overcast |
| " 15 | 30·34 | E. | ... | 125 | 78 | 58 | 59 | 64 | Fine |
| " 16 | 30·37 | N.E. | ... | 123 | 75 | 57 | 59 | 61 | Fine |
| " 17 | 30 29 | N.E. | ... | 112 | 69 | 56 | 56 | 58 | Overcast |
| " 18 | 30·17 | N.E. | ... | 117 | 68 | 54 | 54 | 56 | Overcast |

**During the week marked copies of the following newspapers have been received:**—*Evening Chronicle* (*Newcastle-on-Tyne*), *Rochdale Observer, Surrey Advertiser, Yorkshire Post, Herefordshire Mercury, Reading Mercury and Oxford Gazette, Newcastle Daily Chronicle, Manchester Guardian, Manchester Dispatch, Hull Mail, Manchester Chronicle, Daily Telegraph, Wimbledon Gazette, Hertfordshire Mercury, Army and Navy Gazette, John Bull, Westminster Gazette, Glasgow Evening Times, Glasgow Herald, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Messrs. Allen and Hanburys, Lond.; Armstrong College, Newcastle-on-Tyne, Secretary of; Messrs. T. R. Annan and Sons, Glasgow; Mr. W. Innes Addison, Glasgow.

**B.**—Mr. F. A. Brockhaus, Lond.; Messrs. Bolton and Bolton, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Bayer Co., Lond.; Capt. R. J. Blackham, Devonport; Dr. T. H. Butler, Coventry; Dr. A. T. Brand, Driffield; Mr. W. G. Burcombe, Lincoln; Colonel S. Burrard, R.E., Folkestone; Mr. C. Berthier, Paris; Mr. W. Binch, Nottingham; *Birmingham Daily Post*, Manager of; Mr. H. J. Buckland, Harrogate; Sir John F. H. Broadbent, Lond.; Mr. A. Benthall, Lond.

**C.**—Mr. G. W. K. Crosland, Huddersfield; Dr. G. H. Colt, Lond.; Cardiff Infirmary, Secretary of; Mr. R. A. Caldwell, Broadstone; Messrs. E. Cook and Co., Lond., Messrs. Chandler, Ingram, and Bell, Toronto, Canada; Messrs Samson Clarke and Co., Lond.; Messrs. Cadbury Bros., Bourneville; Cornwall County Asylum, Bodmin, Secretary of; China Tea Association, Lond.; Coventry and Warwickshire Hospital, Secretary of; Central London Throat and Ear Hospital, Dean of.

**D.**—Dr. E. H. Douty, Mundesley; Dr. J. G. Duncanson, Shooter's Hill; Mr. T. Domela, Murren; W. J. C. Dulany Co., Baltimore; Mr. E. Darke, Lond.

**E.**—Dr. W. A. Evans, Chicago; Dr. W. Ewart, Lond.; Messrs. Elliott, Son, and Boyton, Lond.

**F.**—Dr. A. Foxwell, Birmingham; Messrs. Ferris and Co., Bristol; Messrs. Fairchild Bros. and Foster, Lond.; Franco-British Advertising Co., Lond., Manager of; F. G.; The Foster Brown Co., Montreal.

**G.**—Staff-Surgeon W. H. O. Garde, R.N., Edinburgh; Gloucester General Infirmary, Secretary of; Guardian Assurance Co., Lond., Secretary of; G. J., Godalming; Dr. W. Gordon, Exeter.

**H.**—Dr. F. G. Haworth, Darwen; Dr. F. W. Hewitt, Lond.; Mr. L. Hasbrouch, High Wycombe; Mr. Hawkins-Ambler, Liverpool; Dr. W. Winslow Hall, Lond.; Messrs. Haasenstein and Vogler, Cologne; Hospital for Sick Children, Lond., Matron of; Hull Corporation, Clerk to the; H. D. M. C.; Dr. C. Hind, Ockley; Mr. E. Hart, Lond.; Mr. J. Humphreys, Bangor; Mr. John Humphry, Lond.

**I.**—Dr. P. R. Ingram, Lond.; Incorporated Institute of Hygiene, Lond., Secretary of; Ingham Infirmary, South Shields, Secretary of.

**J.**—Dr. M. J. Johnson, Smithton; *Journal Record of Medicine*, Atlanta, Manager of; Dr. E. Jones Lond.; J. T.; Jenny Lind Infirmary, Norwich, Secretary of.

**K.**—Messrs. R. A. Knight and Co., Lond.

**L.**—Mr. H. K. Lewis, Lond.; Mrs. A. H. Lucas Stourbridge; Messrs. Luzac and Co., Lond.; Miss Lamb, Hereford; Miss L., Lond.; Lister Institute, Lond., Secretary of; Leeds Union, Clerk to the; Dr. Murray Leslie, Lond.

**M.**—Mr. G. E. Mould, Rotherham; Messrs. Masson and Co., Paris; Messrs. Moline and Co., Lond.; Messrs. Maple and Co., Lond.; Mr. R. W. Murray, Liverpool; Mr. D. Mathieson, Edinburgh; Messrs. MacLaren and Sons, Lond.; Mr. Y. E. Salvin Moore, F.Z.S.

**N.**—Mr. H. A. E. Noble, Weaste; Nurses Co-operation, Lond., Matron of; Mr. G. P. Newbolt, Liverpool; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.;

**O.**—Dr. R. Ollerenshaw, Lond.; Oxford Medical Publications, Lond., Manager of; Ozonair, Ltd., Lond.; Mr. L. O'Connor, St. Leonards-on-Sea.

**P.**—Mr. Y. J. Pentland, Edinburgh; Dr. O. N. Peters, Nottingham; Mr. E. J. Pritchard, Lond.; Surgeon B. Pick, R.N., H.M.S. *Queen*; P. H. S.; Messrs. Peacock and Hadley, Lond.; Mr. A. E. Porter, Whitby.

**R.**—Dr. L. Rogers, Isleworth; Royal College of Surgeons in Ireland, Dublin, Registrar of; Royal Victoria Hospital, Dover, Secretary of; Royal Sanitary Institute, Lond., Secretary of; Messrs. Reitmeyer and Co., Lond.; Royal Southern Hospital, Liverpool, Secretary of; Radcliffe Infirmary, Oxford, Secretary of.

**S.**—Dr. J. H. Swanton, Lond.; Salutaris Water Co., Lond; Dr. StClair B. Shadwell, Lond.; Professor Elliott Smith, Cairo; Staffordshire County Asylum, Stafford, Medical Superintendent of; Star Engineering Co., Wolverhampton; Smilex, Bromley; Mr. J. Sampson, York; Sunderland Infirmary, Secretary of; Seltzogene Patent Charges Co., St. Helen's; Mr. J. Startin, Lond.; Salford Union, Clerk to the; Society for Relief of Widows and Orphans of Medical Men, Lond., Secretary of; Scholastic, Clerical, &c., Association, Lond.; Mr. W. G. Spencer, Lond.; Dr. A. R. Short, Bristol.

**T.**—Dr. W. S. Thayer, Baltimore, U.S.A.; Dr. W. Pickett Turner, Balham; Messrs. Raphael Tuck and Son, Lond.; Mr. W. B. Tubbs, Lond.

**W.**—Dr. F. Parkes Weber, Lond.; Mr. J. Williams, Bradford; Western General Infirmary, Lond., Secretary of; Dr. T. Stacey Wilson, Birmingham; Dr. J. D. Wilson, Mountpottinger; Dr. R. Stenhouse Williams, Liverpool; Messrs. H. D. Wells and Co., Hull; Mr. Penrose Williams, Bridgwater; Dr. A. A. Warden, Paris; Mr. J. Werner, Lond.; Sir Almroth E. Wright, Lond.

**Y.**—Mr. W. A. Yearsley, Accrington; Dr. R. A. Yeld, Lond.; *Yorkshire Post*, Leeds.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. R. Aubrey, Brent Knoll; A. D. L. T.; A. J. A.; A. T. H.; Aberystwyth Corporation, Clerk to the; A. G. M.; A. F. P.; Mr. W. Anthony, Burton-on-Trent.

**B.**—Mr J. T. Bailey, Paignton; Dr. W. Blair Bell, Liverpool; Mr. A. G. Bagshawe, Leamington; Bristol General Hospital, Secretary of; Bank of Bristol, Bristol, Tennessee, U.S.A.; Lieutenant F. E. Bissell, R.A.M.C., Plymouth; Dr. C. F. Bailey, Lynton; Barnwood House, Gloucester, Medical Superintendent of; Messrs. Bolton and Bolton, Kendal; Messrs. Blinko and Sons, Ramsgate; Mr. H. R. H. Bigg, Lond.

**C.**—Mr. R. Charnley, Preston; Dr. Crawford S. Crichton, Newton; Cheltenham General Hospital, Secretary of; C. D.; O. F. S.; Mr. A. P. Coker, Gisborne, New Zealand; Chesterfield and North Derbyshire Infirmary, Secretary of; Dr. R. Carswell, Lond.; Messrs. J. and A. Carter, Lond.; Cameron Hospital, West Hartlepool, Secretary of; Mr. F. W. Clarke, Chorlton-cum-Hardy.

**D.**—Dr. W. F. L. Day, Wetherby; Mr. E. W. Dewey, Portsmouth; Messrs. Dowie and Marshall, Lond.; Messrs. J. Defries and Son, Lond.; Messrs. Davy Hill, and Hodgkinsons, Lond.; Dumfries and Galloway Royal Infirmary, Treasurer of; Dr. H. Davies, Lond.; Mr. J. T. Davenport, Lond.; Dr. W. T. Dougal, Pittenweem.

**E.**—Mr. C. H. Evans, Lond.; E. H.; E. R. C.; E. C. M.; E. M. P.; E. U. M. B. R.

**F.**—Dr. A. O. Ferguson, Thirsk; Dr. A. T. Fraser, Maritzburg; Mr. W. Fuller, Tenbury; Dr. Forsyth, Overstrand.

**G.**—Mr. F. H. Grenfell, Lond.; Dr. W. P. Grant, Rochdale; Mr. H. S. Greenwood, Lond.; Mr. L. S. H. Glanville, Lond.; Mr. F. H. Godsell, Lond.; G. J.; G. C.; Mr. H. T. Gray, Lond.; Glamorgan County Asylum, Bridgend, Clerk to the; General Life Assurance Co., Lond., Secretary of; Mr. T. Griffiths, Cymmer; G., Lond.

**H.**—Mr. J. W. Hall, Heywood; Hull Royal Infirmary, Secretary of; Mr. A. S. Hoge, Lond.; Mr. F. J. Hasslacher, Weybridge; Mr. J. J. Hanley, Barnsley; H. J.; Mr. B. Hood, Fletching; Mr. F. Hargreaves, Manchester; Mr. J. Howe, Ashton-under-Lyne; H. A. M.; Messrs. Hodder and Stoughton, Lond.; H. J.; Major M. P. Holt, R.A.M.C., Lond.; Messrs. Heal and Son, Lond.

**I.**—Miss E. R. Inge, Haslemere; Index, Leeds; Incorporated Medical Practitioners' Association, Lond., Secretary of.

**J.**—Mr. G. D. Johnston, Vancouver, British Columbia; J. E. H.; J. W. S.; J. W. D.; J. E. E.; J. E. T.; J. H. P.; J. H., Lond.; J. G. H.

**K.**—Mr. W. V. Kane, Jubbulpore, India.

**L.**—Dr. D. Lawson, Banchory; Messrs. Lee and Nightingale, Liverpool; Mr. A Leckie, Lond.; Lyxhayr, Ltd., Lond.; Mr. H. Lett, Lond.

**M.**—Dr. A. McLachlan, Beauly; Dr. R. R. McLean, Manchester; Mr. S. J. Mukerji, Allahabad; Monkwearmouth, &c., Hospital, Secretary of; Messrs. J. Menzies and Co., Glasgow; M. A. D.; Mr. J. Lockhart Mummery, Lond.; Mr. K. K. Mukerji, Edinburgh; Medical Graduates' College and Polyclinic, Lond., Secretary of; Manchester Royal Infirmary, Secretary of; M. J.

**N.**—Noble's Isle of Man Hospital, Douglas, Secretary, of; Nottingham, The Coppice, Medical Superintendent of.

**O.**—Dr. T. Oliver, Newcastle-on-Tyne.

**P.**—Mr. Seton Pringle, Dublin; Prince of Wales Hospital, Tottenham, Secretary of; Dr. W. Pasteur, Lond.; Rev. C. R. Powys, Rofford; Physician, Harrogate; Paddington Guardians, Clerk to the.

**Q.**—Mr. H. C. E. Quin, Eastleigh.

**R.**—Mr. H. Powell Rees, Lond.; Messrs. Roberts and Co., Lond.; Reo Motors, Lond., Manager of; R. J. E.

**S.**—Mr. C. F. Selous, Barton-on-Sea; S. G. G.; S. J. K.; Stockton and Thornaby Hospital, Secretary of; Sangli, India, Chief Medical Officer of; Dr. A. Sandner, Bendigo, Australia; Smedley's Hydro, Matlock; *South Wales Argus*, Newport, Manager of; Stanley Hospital, Liverpool, Secretary of; Surgeon, Liverpool; Messrs. Spiers and Pond, Lond.

**T.**—Mr. P. Templeton, Swanage; Dr. D. M. Taylor, York; Taunton and Somerset Hospital, Secretary of; Teplitz Schonau, Austria, State Bathing Establishment.

**V.**—Vitalia, Ltd., Lond.

**W.**—Messrs. Wilcox and Co., Lond.; W. R. S. R.; W. H.; W., Upper Brook street; *Western Mail*, Cardiff, Manager of.

EVERY FRIDAY. THE LANCET. PRICE SEVENPENCE

SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | |
|---|---|
| One Year ... ... ... | £1 12 6 |
| Six Months ... ... ... | 0 16 3 |
| Three Months ... ... | 0 8 2 |

| TO THE COLONIES AND ABROAD. | |
|---|---|
| One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France.—J. ASTIER, 31, Rue Bapts, Asnières, Paris.

# The Croonian Lectures
ON
# PLAGUE.

*Delivered before the Royal College of Physicians of London on June 18th, 20th, 25th, and 27th, 1907,*

By W. J. R. SIMPSON, M.D. Aberd., F.R.C.P. Lond.,
PROFESSOR OF HYGIENE AT KING'S COLLEGE, LONDON; GOVERNMENT COMMISSIONER TO INQUIRE INTO CAUSES AND CONTINUANCE OF PLAGUE IN HONG-KONG, 1902, ETC.

## LECTURE IV.[1]

*Delivered on June 27th.*

### No Specific Treatment for Plague.

Mr. President and Fellows,—I shall not touch on the specific treatment of plague. Great expectations were raised on the introduction of Yersin's serum but they have not been realised and a serum has yet to be discovered which, while being germicidal in its action, also possesses antitoxic properties. The researches of the late Dr. Allan Macfadyen were directed to the preparation of a serum with these double properties, but his untimely death at a moment when he appeared to be on the verge of success has postponed an early solution of this problem, though the researches have, I think, shown the direction in which the solution lies.

### Considerations Relating to Preventive Measures in the Past.

From the historical part of these lectures it will have been gathered that the discovery of a prophylactic by Haffkine gives the only measure of defence against plague that has not been employed more or less by some authorities in the older epidemics. Isolation of the sick, evacuation of the infected house, and segregation of contacts, disinfection, destruction of animals, and *cordons sanitaires* were employed. Quarantine of ships from infected ports and purification of merchandise according to the methods known at the time were also put into force. How frequently they were successful there are no means of knowing, but the numerous epidemics with the large mortality recorded are evidences of their failure in a large number of instances. The failure was caused mainly by the uncertainty of diagnosis with its attendant delays until the epidemic had become established and by the employment of an improvised and untrained service to deal with the disease. Deficiencies in organisation were attempted to be made up for by stringency and severity in rules. Thus at Windsor in the time of Queen Elizabeth, in order to protect the Court, a gallows was erected in the market place to hang everyone who came from London or brought wares from there during the epidemic of plague. In 1585 three gibbets were erected in different parts of Aberdeen "in case any infected person arrive or repair by sea or land to this burgh, or in case any indweller of this burgh receive, house or harbour, or give meat or drink to the infected person or persons the man be hangit and the woman drownit." These are echoes of the stringent measures taken by Count Barnabo in the fourteenth century to prevent people from plague-stricken places entering his territories. In Europe when plague prevailed the services of medical men as advisers and attendants on the sick were understood and taken full advantage of, but their services as sanitarians, directing and controlling with special knowledge and machinery the fight against epidemic disease, were not known. The idea is a product of the Victorian era, and it is not to be forgotten that the impetus for modern preventive work in medicine both for Europe and for India owes its source to England. In India the idea has developed more slowly than in Europe, the conditions there being less favourable to rapid progress. It began in the appointment of sanitary commissioners to provinces, a sanitary commissioner for the Government of India, and health officers to large towns such as Calcutta and Bombay, and the making of the civil surgeons *ex-officio* health officers of the station and district to which they were attached.

The Indian Medical Service, which does magnificent work in India, is very limited in numbers and being spread over the whole of India has a very scattered distribution. Duties military and civil have been assigned to it, and among the civil are attendance on Government officials, on the civil population, on the prisoners in the jails, on the inmates of the asylums, and on the patients in the local hospitals. Besides these duties the civil surgeon is expected to deal with vaccination and sanitation. There is also a small group of officers attached to the laboratories that are springing up in India. The Indian Medical Service being small and not having been increased proportionately to the increased duties which have been laid upon it by the authorities forgetful of the incident of the last straw on the camel's back, it is impossible, even if its strength were doubled and devoted wholly to preventive medicine, for such an establishment to deal with plague without being supplemented by a large and well-trained native service. There are 145 small towns in the Punjab alone.

It has been recognised for many years past by medical men in India who have paid attention to the subject that the sanitary organisation does not meet the wants of India and that great and fundamental changes are needed. The subject was publicly discussed on a paper read by me at the first medical congress in India held at Calcutta in 1894—i.e., nearly 13 years ago—and as a result of that discussion a deputation from the congress, headed by Surgeon-General R. Harvey, late director of the Indian Medical Service, who was a Fellow of this College, waited on the Government of India and pointed out the urgency and importance of providing a special sanitary service for India which should consist mainly of medical persons specially trained at the medical colleges of India in preventive medicine and which would open up an honourable and useful career in Government service for a number of the more ambitious and well-educated medical students attending the colleges in India. It was felt that just as there are a police service and a medical service there should be a separate and distinct sanitary service which should have its own budget. This was nearly two years before plague reached India, and the recommendation was based on the powerlessness of the system then existing to deal with preventable disease in India. The diseases then in view were cholera, malarial fever, and kala-azar. The appearance of plague in India accentuated the necessity for such a service and to its absence and the employment of improvised agencies consisting mostly of laymen may be partly ascribed a portion of the hostile attitude of the people and of the failure to deal with the disease.

In Europe in former times, in addition to the absence of any specially organised staff to deal with plague and the difficulty relating to diagnosis, there was also, as there always must be in every large epidemic, the difficulty of providing sufficient hospital accommodation for the sick and camps for those who had been in contact with the sick. Under stress of circumstances the fact which had been recognised at an earlier period that it was dangerous to shut up the sick with the healthy in an infected house was lost sight of and the practice came into vogue during the great epidemic in London to quarantine the house and household in an infected house. It was against this practice that in 1720 Dr. Richard Mead, a distinguished Fellow of this College, wrote when Europe had become alarmed by the severe epidemic of plague in Marseilles in that year. Dr. Mead advocated a return to the system which had been practised in Venice and Scotland since the sixteenth century—viz., the evacuation of infected houses, the sick being removed to hospital and the sound to special airy buildings outside the town. He recognised, however, that a time might come when the epidemic had increased to such an extent that this policy was impossible to carry out and that then, beyond fumigation of the house and attention to personal health, there was little to be done except forbidding convalescents to leave the house until a certain time had elapsed. To prevent infection being carried from an infected town to a healthy one he advocated the abolition of *cordons sanitaires* which the Marseilles authorities had adopted and which, owing to the food-supply being thus cut off, added greatly to the miseries of the population without any corresponding advantages. He proposed the substitution of a passport system after the person who came from the infected town had undergone quarantine or observation for a certain time and disinfection of goods.

### Measures solely directed against Infected Persons and Things will not Check an Epidemic.

Writing against a system which favoured the spread of the disease from the sick to the healthy, Dr. Mead's proposals dealt only with infected persons and infected goods and did not include Fiochetto's recommendation that arsenic should be prepared for the rats after the cats, dogs, fowls, and pigeons in an infected house were killed. It is obvious that if the lower animals, and particularly rats, suffer from plague and spread the infection to men, measures directed solely to infected persons and infected goods will not stay an epidemic. The very slow recognition of this fact has contributed more than any other cause to the spread of plague once the infection has been imported into a new locality and has become established there.

---

[1] Lectures I., II., and III. were published in The Lancet of June 29th (p. 1757), and July 13th (p. 73) and 20th, 1907 (p. 142), respectively.

For many years before plague appeared in India my thoughts had been directed to the possibility of preventing disease in man by dealing with the allied disease in animals before it reached man. It was partly with this view that I had carried on for years researches as to the relationship of small-pox in man with certain diseases in animals. When several cases of plague occurred in Calcutta and rats were dying in several houses in a particular quarter of the town an opportunity came in an unexpected manner of putting this view into practice, for it had been observed in Bombay that the mortality of rats preceded plague mortality in man. Steps were accordingly taken to have the rats destroyed in the few houses in which they were observed to be dying with the object of preventing the spread of the disease. The measure met with success and the sickness and mortality among rats were arrested. I left Calcutta in 1897 and it was not until April of 1898 that rats were found again to be dying in the sheds connected with the shipping and with the railways, evidently a fresh importation; and with the mortality came the first outbreak of plague in Calcutta.

In Cape Town, after much delay and experimenting, large quantities of Danysz's virus were used with the object of destroying rats in infected quarters, and it is remarkable that no recrudescence of plague has ever occurred in this town. In Hong-Kong a similar policy of dealing with the dissemination of the disease by rats was carried out and with comparative success, notwithstanding continual importation of the disease from China. Even this measure has its limits and unless directed with intelligence it is not likely to be successful. It is impossible to destroy all rats in a country and any measure having in view this object is destined to fail. General destruction of rats is good in itself and if the inhabitants of a town or village can be induced to join in a general campaign against rats it is a matter for congratulation. The main point, however, is to deal with the infected rats and for this it is necessary to provide an agency to ascertain where they are and to concentrate energy on infected localities.

### PREVENTIVE MEASURES ADOPTED IN INDIA.

With reference to the plague in India the fullest recognition and credit must be accorded to the Government of India for its energetic efforts to prevent the spread of the disease with the agency at its disposal. There can be no question regarding the anxious and strenuous efforts at first made to check and to control the disease. The Government of India did its utmost to encourage the Government of Bombay to pursue an active policy in combating the plague and Bombay did its best. Very large sums were spent for this purpose amounting to at least £500,000 sterling from 1897 to 1900, and another £300,000 for the protection of the other provinces. But the measures were based, with few exceptions, on the view that plague is disseminated wholly by infected persons and infected clothing.

The failure which followed these measures in a country where the sanitary organisation was small and ineffective and where the habits and dwellings of the people favoured the spread of the disease was facilitated by other circumstances. These were the apathetic attitude of the people; the suspicions and alarms aroused by inspection of huts and houses; the opposition, sometimes merging into open hostility, to the removal of patients from their houses; and then, as the disease increased, the panic and flight that followed, with the scattering of the infection far and wide. The difficulties thus met with were immense and a time arrived when it appeared to the authorities that the continuance of active measures for the prevention of the disease was not only hopeless but would raise trouble by exciting generally the hostility of the usually docile and peaceful inhabitants. A general relaxation of measures was accordingly encouraged and the adoption of plague measures was left to the option of the people themselves. In thus avoiding Scylla the authorities do not appear to have been aware of Charybdis. The plague, unchecked, and taking no heed of politics, has gradually shot ahead. Year after year it is gaining ground and the mortality is now producing just those results which were feared would arise from a policy of activity. The disorders and excitability of the inhabitants of the Punjab have come to most people as a shock and a surprise, but they are what history teaches to be inevitable where whole families are swept away and where the people of a country are dying in immense numbers.

The result of a relaxation of efforts proved in the case of the Punjab most disastrous and this has been the case also in other parts of India. For instance, in Berar, a province of nearly 3,000,000 of people, plague was kept well under control for six years. There was no quarantine but notification and surveillance of people coming from infected villages to healthy places and the immediate adoption of preventive measures when a case of plague occurred consisting mostly of evacuation of the infected house and camping out on the outskirts of the village or town. The policy met with remarkable success, notwithstanding constant importation of disease from the Bombay Presidency, Central Provinces, and Hyderabad State, and it was accepted by the people in good spirit so long as the system was believed in by the authorities. But latterly the measures were considered irksome and accordingly they were relaxed. The next season the disease began to spread unchecked and Khamgaon, with a population of 26,000, lost 5000 of its inhabitants in 12 months, and by the end of 1903 and the beginning of 1904 nearly the whole of the province of Berar was infected. In many of the villages the villagers adopted on their own initiative precautions—i.e., vacating their village and camping out at once on the first appearance of a case of plague, or of dead rats, and so escaped an epidemic, while in other villages the villagers were too ignorant or too lazy to take the initiative and adopt precautions and camp out on the first appearance of plague. These almost invariably suffered severely.

There were practically no precautions in force in the city of Nagpur against plague when the second epidemic of plague broke out there in 1903–04 and in five months from November to March there was a mortality of 15,000 in a population of 130,000. Many of the inhabitants took the initiative, vacating the city and camping out, and they escaped, the mortality being among those who remained in the city and who did not vacate their houses.

During the whole ten years one presidency stands out conspicuously as having steadfastly pursued an active policy and of not leaving preventive measures to the option of the people, and this is Madras. The local Government placed full reliance on its experienced sanitary commissioner and its confidence has been amply justified. Under the strong and able direction and administration of Colonel King, I.M.S., assisted with very inferior material as a staff, the plague has been kept under control, notwithstanding the fact that large numbers of infected persons are constantly passing into the Presidency from the neighbouring States.

### IS IT POSSIBLE TO DEAL WITH PLAGUE AS IT NOW EXISTS IN INDIA?

Seeing that plague has reached the proportions it has now attained in India the question arises, Are there any measures likely to be useful in checking the epidemic which, while effective against the disease, are applicable to Hindus and Mahomedans and their mode of life? The answer is yes, but in considering this question the sanitary condition of India and the habits, prejudices, and religious scruples of the people have to be recognised. The sanitary conditions of India, however deplorable they are, have to be taken as they exist. They are similar to those in Europe in the fifteenth century. It is not possible when an epidemic prevails to transform a town or a country into a condition which will supply it with light and well-ventilated houses and which will render it free from rats, fleas, and other agents which play a part in the spread of the disease. Measures which may be desirable but which are impossible have to be distinguished from those that are possible. Under the impossible may be grouped any attempt suddenly to change the thoughts and habits of the people or the condition of their dwellings, or their dislike and hostility to wholesale removal of their sick to hospitals, or any measures based on the supposition that the communities in India can defend themselves against plague without the intervention of the Government.

It has been seriously advocated as a justification of the removal of all plague restrictions that the people, seeing the havoc that plague causes, would be willing to adopt for their own preservation European methods. The havoc has come but not the change in thought or habits of the people. Next comes the advocacy of rebuilding the huts and houses in the infected villages and towns of India, because it has been observed that the incidence was greater in dark, badly ventilated and rat-ridden mud huts than in others and particularly when they were grouped together in such a manner as to form a common tenement for large numbers of families. The scheme is a good one, which will be supported in principle by all sanitarians, but it is obvious that on a large scale the cost is prohibitive and even if the money were forthcoming could only be brought about after the lapse of very many years. In the meantime the people are dying.

The reluctance to be removed to hospital for purposes of segregation is a general one in every country but it is accentuated in the East by the fact that in consequence of the great mortality from plague very few patients taken to the hospital return to their homes. It is necessary to consider the dislike to removal to hospital from the standpoint of the patient and the patient's friends. I remember the difficulty as a rule encountered in getting either Hindu or Mahomedan to be removed to hospital when suffering from small-pox, which is not nearly so fatal a disease as plague. The compromise which had often to be made was to vaccinate everyone in the house and as far as possible in the adjoining houses, leaving the patient to be treated at home, and after death or recovery of the patient the disinfection of the house. A similar procedure is feasible in plague, except, as I shall show afterwards, the house should be disinfected at once. The impossibility of destroying during an epidemic all rats and fleas in a town or province has already been mentioned and measures have to be devised to concentrate the destruction where it will be most useful; liquid chemicals, except perhaps in the case of latrines and also for washing one's hands, are valueless and a waste of money. Possibly an exception may have to be made to this statement regarding pesterine, a preparation of petroleum employed by Dr. J. A. Turner, the health officer of Bombay, and which he has found useful for the destruction of fleas in rooms.

## IT IS IMPOSSIBLE FOR THE PEOPLE THEMSELVES ON THEIR OWN INITIATIVE TO COMBAT PLAGUE.

Moreover, it is a fundamental point in any preventive measures in India to recognise the fact that it is impossible for the people themselves on their own initiative to defend themselves against the ravages of plague. One might as reasonably expect each village and town on its own initiative to defend itself against a powerful invading army. With the exception of a few large towns, such as Bombay and Calcutta, the general conditions prevailing in India and the relations of the Government to the people, which are of a paternal and patriarchal character, are opposed to any initiation or carrying out of measures by the people themselves without direction, supervision, and control by the Government. In 1902 the Gujrat district inhabited by Mahomedan agriculturists was seriously affected with plague. The Deputy Commissioner writes: "As a rule the people were extraordinarily patient while the disease was epidemic in the village. Their attitude was entirely that of quiescence. They were willing to take almost any steps they were advised to take so long as someone in authority was present to see it carried out, but if no one was there to see it carried out they let things go as they were before and did nothing." This may be stated to be the general attitude of the peasants and poorer people in India. For centuries the Sircar or Government has been looked up to for guidance and to be told to rely on themselves or anyone else besides the Sircar is not understood.

In 1903 Mr. Maynard, a Deputy Commissioner, in his report on plague operations in the Punjab says: "The measures authorised by the Government are now in some respects behind rather than in advance of what general opinion would approve. It must be realised that the people cannot altogether protect themselves A community that is not completely organised for self-government hardly knows what it wants and certainly cannot enforce its will without external help. It is not fair that it should be at the mercy of selfish or reckless individuals."

The resolution of March 9th, 1904, of the Government of the Punjab points out the unfriendly attitude of the inhabitants of infected villages as among the reasons for leaving measures to the people themselves. With reference to evacuation of infected houses it says: "It is by adopting this measure that the people can help themselves best. They must not, however, look to Government for assistance and establishment. It is out of the question to provide huts or extra police." And on the subject of killing rats it goes on to say: "It has now been decided that it is undesirable to incur any further expenditure on further experiments." This policy was reversed in April, 1907, in the adjoining province of the United Provinces when it was announced in the Legislative Council that the Government had determined to depart from the old policy and to provide shelters for the plague-stricken people who evacuate their homes, £2000 being devoted to that purpose and a special plague committee being appointed to advise as to the methods for fighting the disease and spending the sum mentioned.

It may be taken as an axiom that without a specially trained agency to direct and control the plague measures the essentials in regard to the prevention of the disease are forgotten or misapplied and often useless measures are adopted. Without this agency it is a matter of the blind leading the blind. It is pitiable to read some of the suggestions which are made to deal with plague and which are accepted and carried out in good faith as being likely to check the epidemic. Here an inspector is added to the conservancy staff, there it is a few bheesties or water-carriers, and elsewhere a native surgeon. They are all doubtless useful in their way but as regards influencing the plague the money spent on them is thrown away. Similarly when I was in Poona last year I learnt from the health officer that a sanitary engineer had visited the town with the object of drawing up a drainage scheme, which was an excellent thing in itself and which would cost much money, but it would have no effect on plague, which is the most serious illness from which Poona is suffering.

## THE STATE OF POONA IN SEPTEMBER, 1906.

I consider the keynote of success to the prevention of plague is the provision of money and machinery and of a special plague organisation to direct, to supervise, and, if necessary, to carry out the requisite measures. With such a trained organisation, having yearly conferences to compare notes between the heads of departments, it would be possible to sustain and to carry out a settled policy modified only by scientific research and experience. This is what is needed for India and I shall illustrate the necessity for it by an instance which recently came under my observation when I was in India in September, 1906. At that time plague prevailed in Poona, a town of not more than 120,000 inhabitants. At the last census it numbered 110,000 persons. The town had already in its previous epidemics lost over 30,000 of its inhabitants. This fresh epidemic began with one death from plague in June, followed by 107 deaths in July, 1166 deaths in August, and 1173 deaths in the first 13 days of September. On the day I inspected the registers 90 deaths from plague had occurred before noon. By the time this epidemic was over another 8000 deaths were added, bringing up the total of all the epidemics to at least 40,000 deaths.

Under the guidance of Dr. Satpute, the municipal health officer, I visited the plague-stricken quarters of the town, and I shall never forget the painful impression produced on my mind by the heartrending scenes of distress, despair, and desolation which met me on every side. The town had the appearance of a deserted city. The streets were silent, some of them had scarcely an inhabitant visible in them; the only sounds which occasionally broke the silence as we passed through street after street were the noise and clang of the funeral processions and the wail and cries of the mourners at houses in which a death had recently occurred. In whole streets the shops and houses were closed and in those quarters where shops were open they were served by men who only remained in them during the day and left the city for the night. I visited house after house where deaths from plague were being treated by one or other of the two hospital assistants under the health officer. The patients lay in rooms and passages which were often so dark that it was with difficulty they could be seen. In the house where plague first broke out in 1906 the owner had lost his seven sons during the seven epidemics from which Poona has suffered. Similar tragedies belonged to other houses. These seven epidemics have impoverished the municipality, have destroyed an enormous number of people, have brought ruin and beggary to many families, and have increased the price and scarcity of labour. Falling on the adult population, the labourers have been chiefly affected. The ravages of the plague have, however, not confined themselves to these classes, for the Brahmins have also suffered heavily. Large numbers of women and girls in all classes have been left husbandless and young girls betrothed to young men have been made widows with no possibility of remarriage but with all the drawbacks before them of an Indian widow's life. The devastation produced by plague is not a mere question of so many deaths but the sickness and suffering, the despair and the losses, and the evils entailed thereby engender other evils and a discontent which it is difficult for any Government to meet, however anxious it may be for the welfare of its subjects.

I shall now pass on to the measures which I found in force to deal with this great epidemic. The staff consisted of Dr. Satpute and three hospital assistants. One of these hospital assistants was employed in disinfecting houses so far as possible and the other two in treating patients at their own homes. Good work had been done so far as such a staff was able to do it but it was a microscopic staff attempting a herculean work: 1200 people had been inoculated since the middle of July—i.e., in the course of two months. The Government granted 8 annas to all the servants who were inoculated and the municipality 4 annas to others. Some 2000 persons had gone out to the municipal health camps which were available for those whose income was less than 16 rupees a month. Some 7000 people had made health camps for themselves on the outskirts of the town. The rich had gone to their country houses and the remainder of the 60,000 had taken to flight. About 20 out of every 100 patients were removed to the plague hospital. 2½ annas daily, with medicine, milk, sago, and sugar, were supplied by the municipality to the poorer patients attended by the two municipal medical officers. Four native medical men were fighting against an epidemic which had reached the proportions I have stated and their energies were devoted mainly to tending the sick. With a trained service available Poona could have immediately had the necessary assistance to deal effectively with this epidemic.

### FOR COMBATING PLAGUE IN INDIA AN ORGANISED STAFF AND A POLICY ARE THE FIRST ESSENTIALS REQUIRED.

Having considered what is impossible and useless to attempt in India I now come to that which is possible. But before doing so it is necessary to look at the financial position of India, for if there are no funds available to provide money and an adequate machinery then the only policy possible is that which has already been followed with the results mentioned. In any circumstances, when the plague becomes a terror to everyone it is questionable whether attributing the scourge to the hand of God, as was recently done by the Under Secretary of State for India, is the best way out of the difficulty. Evidently Lord Palmerston's rebuke to those who wished to place the blame of the cholera epidemic in England on Providence was forgotten.

As regards finances, with the exception of 1896–97, when nearly £1,500,000 were spent on famine relief, and 1897–98, when over £3,250,000 were similarly spent, there have been large surpluses in the revenues of India during the past ten years. This is not due to money not being devoted to famine purposes, for in 1899–1900 over £2,000,000 were spent in this direction and £1,000,000 have been annually devoted to famine purposes and famine insurance ever since. The figures indicate the liberal, magnificent, and statesmanlike policy carried out in India for the prevention and mitigation of the effects of famine. Hundreds of thousands of lives have in this way been saved.

A similar policy is required in regard to plague prevention, which destroys more lives even than famine. Since 1896 some £17,000,000 sterling have been spent on famine, nearly £1,500,000 on plague, and in spite of this there have been surpluses amounting in the same number of years to over £20,000,000. Of the £1,500,000 spent on plague since 1906 a little over £200,000 have been spent on the Punjab where nearly 2,000,000 people have died. During the years 1905–06, which is the last account available, the Imperial Government of India spent for the plague in the Punjab the sum of £2423 and in Madras £34,603.

The following are the annual amounts spent by the Government on plague in the Punjab and the Madras Presidency since 1897:—

| | Punjab. | Madras Presidency. |
|---|---|---|
| | £ | £ |
| 1897–98 | 8,877 | 4,234 |
| 1898–99 | 19,674 | 46,382 |
| 1899–1900 | 11,560 | 39,319 |
| 1900–01 | 21,045 | 13,880 |
| 1901–02 | 34,532 | 14,592 |
| 1902–03 | 51,772 | 24,591 |
| 1903–04 | 28,980 | 37,277 |
| 1904–05 | 19,526 | 52,128 |
| 1905–06 | 2,423 | 34,603 |

With money available there is no difficulty in providing a special plague organisation for plague work and for supplying it with the requisite material for carrying on an anti-plague campaign. Such a campaign must, however, be based on a well-defined, fixed, and steadfast policy which shall be well known and readily applied. This would not debar modifications being made in the application of the measures according to local circumstances and the discoveries of science. The principles guiding such a policy would be first the discarding of measures which are inapplicable to India and which on that account are bound to be unsuccessful; also of measures which, though useful from a health point of view, have no influence on plague; and, secondly, the steady application of measures known to be of value; for instance, the passport system, inoculation, evacuation, destruction of rats in infected localities, and the disinfection in its widest sense of infected houses. These have all been recommended and tried more or less at one time or another in several places—i.e., locally; but their success depends on their adoption in every province and on the agency and regularity and thoroughness with which they are carried out. With a special organisation provided such measures are possible and without it the attempt to deal with the epidemic is hopeless.

### MEASURES TO PROTECT HEALTHY DISTRICTS.

Differentiation is required in the treatment of areas in which the disease is endemic and in which it is not. Healthy districts should in every circumstance be kept free from plague. This can be effected as it has been done in the Madras Presidency by a passport system and surveillance and immediate action on the occurrence of a case of plague. No relaxation on any account should be allowed. This should be an imperial policy admitting of no modifications. It is to the interest of the locality concerned and to the interests of adjoining localities which are unaffected. Examples have already been given of the alarming results following relaxation in this respect. A careful inspection of crates filled with goods from infected localities should also be arranged for in order that any dead or sick rats may be immediately discovered and disposed of in a safe manner and the contaminated portion of the goods disinfected; for the same reason an inspection of fodder and loads of grain from infected localities is necessary. The warehouses attached to railways and docks require to be specially watched, also granaries, stables, slaughter-houses, and markets, where rats from infected localities are likely to be imported and spread infection among indigenous rats or where contaminated goods infect healthy rats.

### MEASURES IN INFECTED LOCALITIES.

With regard to infected areas the only measures on a large scale available are inoculation, evacuation, and disinfection of infected houses and destruction of rats. Of these inoculation is by far the most powerful and effective. The feasibility of inoculation in the infected districts and houses, if a suitable agency is employed, is demonstrated by the success of the inoculation campaign undertaken in 1902 in a portion of the Punjab. The scheme as originally planned was to inoculate 7,000,000 of the people at a cost of a little over £50,000. It was a splendid conception and if the time and planning devoted to its realisation had been more liberal and less hurried the organisation would have been on a larger and more complete scale and more adequate for the occasion. Half a million of people, however, were inoculated and an investigation carried out by the Government of the Punjab showed that the mortality from plague among the inoculated was reduced to one-twelfth of that which occurred among the non-inoculated, so that it is estimated that 13,000 lives were saved by inoculation during that season.

The Mulkowal accident which occurred at the commencement of the campaign unfortunately shook the confidence of the Government in the prophylactic supplied and, as I have shown, the laboratory was wrongly held responsible for an accident which was actually due to defective organisation which admitted of faulty technique in the application of the prophylactic at the time of the inoculations. The people themselves, however, appear to have understood that the tetanus was an unfortunate accident and were not in the least deterred from availing themselves of the inoculations any more than people are deterred from railway travelling because an express train has met with an accident. This is apparent from the fact that whereas before the accident happened over 100,000 persons came forward to be inoculated, during the season subsequent to the accident nearly 400,000 were inoculated. Major S. Browning Smith of the

Indian Medical Service, who took an active part in the inoculations, describes the attitude of the villagers in this respect. When he began to give the Amritzar people an account of the Mulkowal accident they said that they had seen for themselves the good effect of the inoculations and the sooner he stopped talking and began working the better they would be pleased. He soon finished the few doses he had with him and he remarks: "The genuineness of their feelings was evidenced by the reproaches of those who had to go away unsatisfied, the reproaches of some of the women taking the form of an abuse which was evidently heart-felt." However, with the Government averse to continuing any sustained effort, little or no further progress was made, and in 1904, when the plague was causing enormous ravages, only 49,000 persons were inoculated in the Punjab. It is stated in the report of the Inspector General of Civil Hospitals, who was in charge of the plague operations, that "no special measures were taken for inducing the people to submit to inoculation and the operation was performed almost solely in response to the spontaneous demands of the people." An attitude of this kind in a grave crisis is unjustifiable. In no country of the world can the peasant population be expected to form an opinion on the merits or utility of a scientific method, and even if its utility were appreciated by them, as appears to have been the case with the 49,000, the initiative and organisation required for providing that the full benefit of the measure shall be secured devolve upon the Government. There is no reason that Haffkine's great discovery should not again be made use of on a larger scale. If it finds favour with the Government to-day it will be in favour with the people to-morrow, but the organisation must be such that in its application in the villages there is not the slightest chance of another accident. I believe a pronouncement exonerating the laboratory would, in the circumstances in which it has been mistakenly blamed, have an excellent effect in reinstating the enthusiasm for inoculation.

There is no reason, moreover, that systematic endeavours should not be made whenever a case of plague occurs in a house to get the inmates of the house, and possibly those of the adjoining houses, to be inoculated, and if the benefits are thoroughly explained to them in their own language and tactfully Indians, like other people, are not averse to avail themselves of anything that is likely to be to their advantage so long as they believe in the honesty of those who are dealing with them. Necessarily, one comes across exceptions who will have none of it, but these sort of people are not confined to India. Inoculation is the cheapest mode of protection. The cost of vaccines, establishment, and equipment works out to less than 6 annas per person inoculated, which is not an excessive expenditure. Owing to the original Punjab scheme being abandoned the cost was slightly over 1 rupee a head on the 500,000 inoculated, but if the numbers contemplated—viz., 7,000,000—had been inoculated it would have cost about 1½ annas, or about 1½*d.*, per head. The margin of 6 annas per head will therefore be seen to be liberal.

Evacuation of an infected locality and inoculation promptly carried out will stop any epidemic. In Cape Town plague was becoming serious among the Kaffirs. It was decided to remove them from their dwellings where they were crowded together under most insanitary conditions as bad as, if not worse than, any in India. In the course of a week from 7000 to 8000 were removed to a small village prepared for them and all were inoculated. The epidemic ceased among them and although after two or three days' rest in order that they should recover from the malaise caused by the inoculation they came in regularly to Cape Town and often worked in infected portions of the town they remained free from the disease.

In an infected area the measures to be adopted are controlled to some extent by circumstances. In some localities all the measures mentioned can be brought to bear and of course these are the best conditions for success. But if plague is in a village where there are no means of disinfecting the huts and destroying the rats during the process of disinfection, then evacuation and inoculation are the only measures that can be practised, and if inoculation is carried out the evacuation need only be as long as is necessary to allow of time for the inoculations. Exposure of the grain to the sun, boiling the infected clothes, general destruction of rats, and a general use of pesterine, as advocated by Dr. J. A. Turner, the health officer of Bombay, should also be carried out. In towns where it is possible to carry out disinfection the complicated and unsatisfactory methods belonging to the systems now in vogue should be abolished. When dealing with an epidemic I know of nothing which is more irritating to householders, rich or poor, and which contributes in a greater degree to the hostility met with in disinfecting many houses and to the fostering of surreptitious removal of infected clothing than the fact that everything suspected has to be removed to a central station for disinfection by steam, that the furniture and house have to be sprayed and washed with disinfectants, and that the inmates of the house are turned out for nearly a fortnight before they can get back again. It is exceptional if during the several procedures some articles are not lost or spoilt. At the end of the disinfection, even with careful work, insects will often be seen in the tropics to survive, while the process has no effect on the rats or the rat runs. For these reasons I would abandon all disinfection of this kind and substitute a system of fumigation by a gas which shall disinfect everything *in situ*, which shall, in addition to destroying the germs of the disease, kill the fleas, bugs, other insects, and rats, and which shall disinfect the rat runs in the house.

The Clayton method of disinfection, which consists in the pumping of sulphurous acid gas with sulphuric anhydride into the house, destroys not only the plague germ but all rats, fleas, bugs, and other insects in the house, and it can be applied to thatched huts with the same effect. The gas is generated by burning sulphur at a high temperature in a specially constructed portable apparatus which is brought to the front or back of the house and which is not unlike the vacuum carpet cleaners. One pipe from the apparatus conveys the sulphurous acid gas previously cooled down to a normal temperature into the house, and another pipe also connected with the apparatus draws the air out of the house and through the furnace. Gradually the air in the house becomes saturated with sulphurous acid gas and it has been established that a few hours' exposure to a 2 per cent. gas in the different rooms is destructive to insects, rats, and the plague germs. Not more than seven hours would be required for each operation. The advantages of this method of disinfection are that no occupant of a house need evacuate the house for more than 24 hours at the most, that no furniture, bedding, nor clothes require to be removed from the house, so that there is no risk of the articles being mislaid or stolen. Everything is disinfected *in situ;* the only articles that require to be removed are such foodstuffs as flour, fresh fruits, fish, and meat. Rice and grain need not be removed and would be disinfected along with the other contents of the house. As rice and grain are the most common foodstuffs and the most liable to be contaminated by infection their disinfection is most important. Any discolouration of exposed metal or silk-stuffs can be immediately removed by a weak solution of ammonia without any damage whatever, and a very important fact in connexion with this mode of disinfection is that even such things as become tarnished by direct exposure to the gas are unaffected when they are covered with cloths or are in closed boxes and yet they are disinfected. The gas also has a certain penetrative power into the soil. As stated previously, the disinfection is as applicable to huts with thatched roofs as to houses and more than one series of pipes can be attached to one machine and blocks of houses can be disinfected with several machines in such a manner that the rats, old and young, are prevented from migrating from these blocks and so get destroyed and the infected rat runs are also disinfected. In the case of a plague patient being in the house and objections being raised to removal to hospital the patient can be made comfortable in a tent during the fumigation and be removed back to the house after 24 hours, for with the rats and insects destroyed there would be little danger of the spread of the disease. After the patient had recovered or died the house could be again disinfected.

### HOW TO PREVENT RECRUDESCENCE AT POONA.

From a practical point of view it might be asked what can be done with Poona, which has had 40,000 of its inhabitants die from plague since 1896 and which suffers from plague nearly every year. The town is being ruined and is there nothing that can be done to save it? I believe that if measures were taken on a sufficiently large scale and on an organised plan it is possible to rid Poona of its recrudescent plague, and when this is done then imported plague might with care be kept fully under control. For this purpose it would be necessary not only to carry on a campaign against the rats by poison and by Danysz's virus but to disinfect every house, block by block, in the town in such a manner that the rats, fleas, and plague bacilli in the houses and rat runs were destroyed. It is possible to disinfect by Clayton's machines every house in Poona in the course of six months at an approximate cost of £1 a house, exclusive of the plant. I have not been able to ascertain exactly the number of houses in Poona but there are certainly not more than 20,000. After the disinfection the plant, with the exception of two machines, could be used for other towns or districts. The two machines left would be sufficient, with the other precautions, to prevent the disease when imported from spreading and assuming epidemic proportions.

### CONCLUSION.

It will be noted that my whole thesis in this lecture is based on the necessity of the formation of a special and trained plague service for the prevention and mitigation of plague in India. If this service is organised on proper lines and on a liberal basis the rest will follow. But steps must be taken for it to be done quickly if more stupendous disasters than those of the present year are not to follow and if the great danger to the people of India is to be averted.

# Three Clinical Lectures
ON
# GENERAL SURGICAL ANÆSTHESIA.

*Delivered at the London Hospital,*

BY FREDERIC W. HEWITT, M.V.O., M.A.,
M.D. CANTAB.,
EMERITUS LECTURER ON ANÆSTHETICS.

## LECTURE II.[1]

*Delivered on June 21st, 1907.*

### THE TWO DISTINCT VARIETIES OF SURGICAL SHOCK MET WITH DURING GENERAL ANÆSTHESIA.

GENTLEMEN,—I hope to-day to be able to interest you in a subject of considerable importance—the incidence of surgical shock during general anæsthesia. The subject is important not only intrinsically but also because by its careful and clinical consideration we shall, I think, be able to explain some of those mysterious deaths which occur immediately an operation is begun during light anæsthesia and because, as I shall hope to prove to you, the anæsthetist has it in his power, by carefully selecting the anæsthetic and adjusting the degree of anæsthesia, to prevent and successfully treat most cases of surgical shock. I need hardly remind you that the operations and procedures of surgery are capable of producing very definite effects of their own upon unconscious patients. Some of these effects are so obviously dependent upon the operation that no mistake as to their origin is possible; others, however, may so closely simulate those arising from other causes, such as the action of the anæsthetic itself, that mistakes as to their true nature may readily be committed. Time will not permit me to-day to deal with all the phenomena which may arise as the direct or indirect result of surgical procedures during general anæsthesia. I must, therefore, omit all reference to the interesting but difficult question as to the nature of the phenomena which may occur when operations are ineptly commenced so early in anæsthetisation that pain is actually experienced, although it may possibly be subsequently forgotten. I propose, in fact, to deal only with the thoroughly unconscious though not necessarily deeply anæsthetised patient. I must also exclude from consideration the effects of profuse or continuous hæmorrhage during general anæsthesia, although you will readily understand that the phenomena which I am about to discuss to-day are frequently associated with phenomena referable to hæmorrhage. Similarly modifications in general anæsthesia resulting from the adoption of certain postures, from prolonged cutaneous exposure, or from the entry of air into veins will not admit of discussion on this occasion. I propose, in short, only to bring before your notice to-day certain more or less sudden states which may arise during artificially induced unconsciousness—states which are referable to violent nerve stimulation or nerve injury in the course of some surgical operation and to which the term "surgical shock" may therefore appropriately be applied.

Soon after the introduction of anæsthetics into practice it became obvious that surgical operations, and particularly certain surgical operations, were capable of producing in anæsthetised patients certain special effects of their own quite apart from those referable to hæmorrhage. Thus as far back as 1853 Bickersteth of Liverpool recorded cases in which sudden but usually temporary pulse disappearance had occurred at the very moment that some particular surgical procedure was taking place, and he believed that certain of the chloroform fatalities which had then been chronicled were to be ascribed to the shock of the operation. In subsequent years other observers also recorded instances in which during such procedures as the division of the optic nerve, the removal of the testicle, or tooth extraction sudden syncope arose. Now, although I do not deny that surgical shock such as we are considering may, under certain conditions, prove fatal, I wish to impress upon you the important fact that by thoroughly understanding the circumstances in which this surgical shock may arise the anæsthetist may usually, if not invariably, prevent it assuming dangerous or fatal proportions. At the present moment the subject is surrounded by an atmosphere of doubt and dogma and if we can in any way clear that atmosphere an important step will have been taken.

There are at the present time two prevalent misconceptions concerning surgical shock. One of these is that this condition when it arises during general anæsthesia is necessarily a primarily circulatory state, whereas, as I shall presently explain to you, it may start by reflex respiratory embarrassment or arrest and only acquire circulatory importance after the respiratory embarrassment or arrest has existed for some little time. There are, indeed, two distinct varieties of surgical shock—the *respiratory*, in which respiration is primarily and reflexly affected, and the *circulatory*, in which circulation is primarily and reflexly affected. If, as may happen, respiratory shock becomes associated with a failing circulation, or if circulatory shock becomes associated with a failing respiration, a state of *mixed or composite shock* becomes established. The second misconception is that circulatory surgical shock is essentially a phenomenon of light anæsthesia, whereas it is exactly the reverse, for it is met with, as a general rule, after the corneal reflex has been abolished, and therefore at a stage in anæsthetisation when it may easily be, and frequently is, mistaken for simple over-dosage. It is curious that this second misconception should have prevailed for so long. The most likely explanation of the persistence of this erroneous belief is that in a large number of the cases in which it has been supposed that primarily circulatory shock has arisen during light anæsthesia a mistake in diagnosis has been made and that a primarily *respiratory* condition has in reality been present. Respiratory shock is, in fact, the shock of light anæsthesia and circulatory shock that of deep anæsthesia. For upwards of half a century this second misconception has been permitted to influence the profession, with the result that a large number of lives have been sacrificed. You will readily understand that when once the error has been committed of mistaking sudden and primary respiratory arrest for sudden and primary circulatory arrest the consequent error will almost certainly be committed of applying restorative measures to the circulation instead of to the respiration, with the result that in certain cases valuable time will be lost and a fatal result follow.

Minor degrees of reflex respiratory and of reflex circulatory disturbance, as the result of some surgical procedure, are very common in practice and usually attract little or no attention. When, however, the conditions are favourable the respiratory embarrassment or the circulatory depression, as the case may be, may be very noticeable, and it is with these definite or acute conditions that we are here particularly concerned.

### RESPIRATORY SHOCK.

The subjects most likely to display respiratory shock are those whose air passages are, from some natural or pathological cause, specially liable to become obstructed. Young and vigorous subjects, those of obese habit, and those who have smoked or drunk to excess, are also more liable than others to reflex respiratory derangement. Healthy patients with good cardiac action, although more likely than old and feeble subjects to display this form of surgical shock, are better able than the latter to hold out against the strain which it imposes upon the circulation. Respiratory shock may be met with under all anæsthetics but it is perhaps more prone to arise when the anæsthetic is one which itself throws some strain upon respiration. The degree of anæsthesia which is most favourable to the occurrence of respiratory shock is undoubtedly a light or moderate degree. Reflex respiratory disturbance is rare when full anæsthesia has been secured, although cases occasionally occur in which reflex tongue retraction causing stertor and particularly reflex laryngeal spasm causing stridor arise even though the corneæ are completely insensitive. The operations which are most likely to induce the condition under consideration are those upon the rectum and genito-urinary organs, and those within the abdominal cavity. The dilatation of the sphincter ani of a muscular man whose corneal reflex has not yet disappeared is almost always attended by some degree of respiratory embarrassment due to reflex tongue retraction, or laryngeal spasm, or both. Skin incisions, the wrenching of stiff and painful joints, and the passage of a catheter may also be given as examples of procedures which may, in favourable circumstances, bring about reflex respiratory arrest. The phenomena which lead up to respiratory shock usually occur in the following order. (1) There is a more or less sudden alteration in respiration due to muscular spasm within or about the respiratory passages and usually, though not necessarily, characterised by stertor or stridor; there is consequently (2) a more or less sudden diminution in the quantity of air entering the lungs which rapidly leads to (3) lividity or cyanosis. In certain cases the asphyxial state thus set up quickly leads to (4) venous engorgement and swelling of the tongue, fauces, palate, and adjacent structures, so that the obstruction becomes intensified. Finally, if respiration be not re-established pallor, pulselessness, and death ensue, the rapidity with which the case thus terminates depending upon the particular anæsthetic employed, the degree of anæsthesia at the moment of the seizure, and the state of the patient's cardio-vascular system. Cases frequently occur in practice in which some surgical procedure—e.g., persistent peritoneal manipulation—keeps up persistent laryngeal spasm as evidenced by the persistent stridor, and as the result of this spasm the patient's condition very materially suffers, the face becoming increasingly dusky and pale and the pulse feebler and feebler. I need not give you examples of cases of this class. They are by no means uncommon, but they are very frequently misinterpreted and the unfavourable symptoms wholly ascribed to the anæsthetic. The character of the phenomena in any given case will vary with the circumstances present—the type of subject, the state of his upper air passages, the stage of anæsthesia, the nature of the procedure, and other factors.

---

[1] Lecture I. was published in THE LANCET of July 20th, 1907, p. 139.

Most of you are doubtless aware of the teaching that patients should not be operated upon until they are "well under" but I venture to hope that the considerations which I have placed before you will help you to understand the reasons upon which this teaching is based. There is in every case a particular point or juncture at which the operation should be begun, and if, from hurry or other causes, the surgical stimuli be prematurely applied the respiratory disturbances thus initiated may assume dangerous proportions. I need not weary you with details of cases. It is sufficient to say that intercurrent asphyxial symptoms demanding the most active treatment may thus arise as the immediate result of some surgical procedures during partial anæsthesia. In the most marked case which has come under my own personal observation the secondary venous engorgement of the tongue and adjacent structures was so intense that it was impossible to re-establish the airway to the larynx; artificial respiration proved unsuccessful; laryngotomy became necessary, and the patient's life was only saved by direct lung inflation.

The preventive treatment of respiratory shock is self-evident. It is to secure deep anæsthesia before the operation is commenced. As to the immediate treatment the operation should be suspended, the lips and face briskly rubbed with a towel, the teeth separated, the fauces stimulated with the finger-tip, the tongue pulled forwards if necessary, and artificial respiration performed. Generally speaking this treatment will cause a rapid subsidence of the asphyxial phenomena and respiration will be resumed. Should it fail laryngotomy and direct lung inflation must be resorted to. The head should not be lowered, nor should the patient's body be inverted. Drugs must be studiously avoided.

### Circulatory Shock.

I find that I have careful notes of 71 cases in which circulatory surgical shock has occurred during general anæsthesia. This does not, of course, represent anything like the total number of cases in which I have met with this condition. During the first ten or 12 years of practice I employed ether much more frequently than chloroform in general surgical work, and as circulatory shock is comparatively rare under the former anæsthetic I naturally came across but few cases of this condition. But during the last ten years I have employed chloroform, usually after nitrous oxide and ether, in most surgical cases and have gradually become alive to the frequency of intercurrent circulatory changes referable to surgical stimuli. The result has been that whenever circumstances have permitted I have taken notes of the most marked of my surgical shock cases. The subject has, in fact, proved to be an exceedingly interesting one and well worthy of clinical study.

It is difficult to say whether certain subjects are more liable than others to the ordinary (circulatory) form of surgical shock during general anæsthesia. I am unable to discover any such predisposition in my records of the most marked cases which have come under my immediate notice. Of the 71 cases of circulatory shock of which I have notes 25 were males, 45 were females, and in one the sex is not stated. Their ages ranged from five to 75 years. These figures are, for obvious reasons, of little or no statistical value. Whilst one would naturally regard elderly patients and those who are at the time in a bad general condition as more likely than others to be affected, one has to remember that it is in these very subjects that one is usually able to work with that comparatively light anæsthesia which, as I shall point out to you, tends to ward off circulatory shock. In anæsthetising a young and vigorous patient one generally has to administer a comparatively large quantity of anæsthetic in order to abolish reflex movement and, if chloroform be in use, it is this deep anæsthesia which predisposes to circulatory shock. Patients with morbus cordis, who, as a general rule, tolerate a comparatively light anæsthesia very well, frequently surprise the surgeon by passing through a formidable operation without any marked pulse disturbance. In a few of my cases I have been informed that the patients have suffered with a "weak heart" or have been "liable to faint," and it is quite conceivable that there may be something more than mere coincidence in this fact. It may be that such patients are specially susceptible to circulatory shock, but so far as I am aware there is no direct evidence on this point, nor is there much evidence that elderly and feeble subjects, in whom circulatory shock takes place during an operation, are more prejudicially affected, so far as their recovery is concerned, than more vigorous patients. As to the anæsthetic or anæsthetics under which circulatory shock is most common there is no doubt whatever that chloroform is *par excellence* the agent which specially predisposes to this condition owing to its power of reducing blood pressure. It is clear that in the event of the surgical procedure producing temporary cardiac inhibition or vaso-motor depression, syncope will be far more likely to arise in a patient whose arterial tension is at the moment low than in one whose tension is at the moment high. Circulatory surgical shock is, indeed, comparatively rare under nitrous oxide and under ether, these anæsthetics causing little or no fall of blood pressure. Of my 71 cases chloroform was being used in 37, C.E. or A.C.E. in 22, and ether in 12, when the symptoms occurred. The next point is one of great interest and importance. It is that surgical shock is a phenomenon of *deep* anæsthesia, being a comparatively rare incident when the corneal reflex is present. This, again, is readily intelligible, for all physiological blood pressure tracings show a *progressive* fall of pressure as chloroform anæsthesia deepens and it is when this anæsthesia is fully established that the patient becomes specially susceptible to the ordinary form of surgical shock. If the operation be of such a nature that the anæsthetist can keep up a moderate anæsthesia—i.e., a state in which the corneal reflex is present—he will be able, as a general rule, to *prevent* circulatory shock. The operations in which I have most frequently met with this complication of general anæsthesia have been those within the abdomen, those upon the kidney, and those upon the breast. It must be remembered, however, that these operations are amongst the commonest in major surgery. Of my 71 cases of circulatory shock, 26 occurred during intra-abdominal operations, 12 during breast operations, ten during renal operations, six during rectal operations, five during gynæcological operations, five during deeply seated operations upon the neck, three during vesical operations, one during a tongue operation, one during the passage of a lithotrite, one during a skin incision, and one during an operation for castration. Traction upon the intestine, stomach, or omentum, partial or complete evisceration, dragging upon the uterus, ovary, or gall-bladder, and similar procedures are specially likely to produce circulatory shock during deep chloroform anæsthesia. I have known sudden and apparently alarming syncope to be caused by the operator passing his finger behind the pectoral muscles and pulling them forwards prior to their division in the course of an ordinary breast operation. Operations in the neighbourhood of the vagus are also liable to be attended by sudden circulatory shock. For obvious reasons operations upon the brain and spinal cord frequently cause severe shock and call for special care on the part of the anæsthetist. During the operation of prostatectomy whilst the prostate is being removed there is also a tendency for the pulse to vanish completely and in severe cases for respiration to cease as the result of the temporary suspension of cerebral circulation. Rectal, gynæcological, and other operations within and upon the genito-urinary organs are also liable to cause circulatory shock in patients deeply under chloroform or a mixture rich in chloroform. My experience in anæsthetising for ophthalmic operations has been very limited, but I may remind you that cases of sudden fatal syncope during the division of the optic nerve have in past years been recorded. As to operations within and about the mouth, the nose, and the throat, these have been, in my experience, remarkably free from circulatory shock, probably because in such cases one generally maintains a moderate as opposed to a deep anæsthesia. With two possible exceptions, indeed, I have never met with this complication in nose or throat cases, although I have administered chloroform (after ether) in the sitting posture in many hundreds of such cases. Tooth extraction during nitrous oxide anæsthesia is practically never attended by circulatory shock for reasons which you will understand after what I have already said. It is probable that in most of the reported cases the state was one originally respiratory in character. Similarly, extensive skin incisions more often primarily disturb respiration than circulation. I have never seen circulatory shock during an operation for mastoid disease.

The clinical phenomena of circulatory surgical shock may vary from a barely noticeable effect upon the pulse to the most alarming and apparently fatal syncope. In mild cases there may be nothing beyond a slowing, feebleness, or irregularity of pulse, possibly coupled with slight pallor, the respiration remaining unchanged and perfectly satisfactory. In more marked cases these symptoms are associated with some coldness and perspiration of the nose, forehead, and other parts, a loss of normal moisture inside the lips, a slight separation of the eyelids, and a lessening in the depth of respiration. A change from stertorous to tranquil breathing is a noticeable phenomenon in some cases and is interesting as supporting the view that stertor is usually a spasmodic rather than a paralytic phenomenon. The disappearance of stertor is probably analogous to want of closure of the lids. In the most acute cases pallor and pulse disappearance, wide separation of the hitherto closed lids, marked dilatation of the pupils, and suspension of respiration are the prominent manifestations, the symptoms occurring roughly in the order named, but possibly in such rapid succession that the whole seizure appears to be momentary. In the case already referred to, in which acute shock occurred as the result of vigorous traction upon the pectoral muscles, the patient presented all the appearances of sudden death. I have observed a precisely similar appearance of the patient during certain deeply seated operations in the neck, probably from direct interference with the vagus. In several cases I have noticed that the pulse, although very slow, has retained a fair volume during the few beats which have immediately preceded its cessation. In others, a curious batch of deep respirations—five or six in number—has been a prominent feature of the acute seizure, the batch occurring immediately before breathing has ceased. In a few cases I have observed *local* pulselessness. Thus during an abdominal exploration in a jaundiced patient whose arms were pinned up both radial pulses disappeared, although the temporal artery could be felt beating. The anæsthetic in use at the time was chloroform and the patient was fully, but not too deeply, anæsthetised. Although the depth of anæsthesia was lessened and the C.E. mixture substituted for chloroform, the radial pulses remained absent till the abdomen was being closed when, the arms still being pinned up, the wrist pulses returned. I have met with a somewhat similar case in a child during a mastoid operation, the radial pulse of the opposite side twice becoming imperceptible during the operation. In this case, as in the other, the patient's posture doubtless favoured the pulse disappearance, a slight pressure upon or flexion of certain arteries being quite sufficient, with the general low pressure present, to arrest the pulse.

There are two important clinical points in these cases—viz.: (1) that the shock is essentially one which is primarily circulatory, respiration only ceasing when the pulse has vanished; and (2) that even though the shock be acute and threatening in its manifestations it is almost invariably of a transient character. It will be convenient to say a few words on these two points.

1. The clinical phenomena of the cases now under consideration would seem to indicate that the surgical stimuli to which reference has above been made, acting through sensory or sympathetic nerves, primarily affect, in most cases, both the cardio-inhibitory and the vaso-motor centres, with the result that a fall in blood pressure takes place, the degree of which is in direct proportion to the severity of the stimulus and to the extent to which the blood pressure had been lowered by the anæsthetic when the nerve injury occurred. According to Crile, whose physiological researches on surgical shock are now well known, the condition is principally one of vaso-motor paralysis brought about by the nerve injury paralysing the main vaso-motor centres, the result of the paralysis being a fall of blood pressure and an accumulation of blood within the venous system and particularly within the vessels of the splanchnic area. Crile does not apparently attach much importance to the cardio-inhibitory element in surgical shock, but clinically there would seem to be certain cases in which the cardio-inhibitory effect is more conspicuous than the vaso-motor effect. I have, for example, often met with simple bradycardia or with temporary cardiac arrest without pallor or any other noticeable symptoms during certain operations under ether, during others under moderate chloroform anæsthesia, and during others, again, under chloroform administered to the full surgical degree to patients in the Trendelenburg posture. Crile does not appear, moreover, to have studied the effects of given stimuli in different degrees of chloroform anæsthesia or the effects of such stimuli under different anæsthetics administered to the same degree. There can be no doubt, however, that in human beings these different conditions are of considerable importance, as already indicated.

2. The essentially evanescent character of typical surgical shock during general anæsthesia has been a conspicuous feature in practically every case of which I have notes. Of 71 cases, not one was fatal; and although in some of them I felt considerable anxiety I am gradually coming to the conclusion that there is little or no occasion for alarm. Even in the most marked cases recovery came about within a couple of minutes at the outside, and in many of them within a minute. At the same time I can readily conceive that with a deeper chloroform anæsthesia than that which existed, or with less prompt or wrong treatment, serious results might have occurred.

When respiratory shock becomes quickly followed by circulatory depression, as may be the case in weakly subjects and in those with degenerated cardio-vascular systems, or when circulatory shock is so acute that respiration rapidly ceases as the result of the sudden cerebral anæmia, a state of mixed or composite shock becomes established.

The diagnosis of circulatory shock is an important matter, for upon it depends the proper treatment of the condition. It is distinguished from: (1) respiratory shock by the initial phenomena being circulatory, the pulse changes, pallor, &c., occurring before any respiratory effects are observed. In respiratory shock, moreover, there are, as a rule, muscular spasm, stertor or stridor, and cyanosis; whilst in circulatory shock there is, as a rule, no muscular spasm, stertor, or stridor, and the colour is pale rather than cyanotic. It must be remembered, of course, that cases occasionally occur in which both varieties of shock co-exist as above mentioned. Circulatory shock is frequently mistaken for (2) simple chloroform over-dosage or toxæmia; and it must be confessed that in many cases it is difficult, if not impossible, to distinguish the two conditions. I have already stated that circulatory surgical shock does not, as a rule, occur when the corneal reflex is present. If it occurred during light anæsthesia we should not, of course, have any difficulty in diagnosing it from simple chloroform syncope. But as deep chloroform anæsthesia specially predisposes to circulatory shock it will be obvious to you that when chloroform is being pushed to full narcosis and when during the process sudden syncope arises it is often very difficult to say whether this syncope is or is not purely toxic. In going through the notes of many hundreds of administrations I find that in nearly every case in which *sudden* symptoms have occurred under chloroform these symptoms have arisen during some operation liable to produce shock. It is only within recent years that I have been forced, by the chain of clinical evidence, to place this interpretation upon the cases to which I am now referring. I believe, indeed, that the surgical procedure is far more frequently the direct cause of pallor and pulselessness under chloroform than is generally supposed—in other words, that the mistake is frequently made of ascribing to the anæsthetic symptoms which are only partly dependent upon its action. That the anæsthetic cannot be altogether absolved is proved by the fact that acute circulatory shock as, for example, from intestinal traction, does not occur during *moderate* chloroform anæsthesia—i.e., when the corneal reflex is distinctly present. The blood pressure must, in fact, be already reduced for the typical phenomena to arise. One of the great pioneers in abdominal surgery was in the habit of operating under what we should now term moderate anæsthesia. Reflex movement of the legs, reflex abdominal rigidity, occasional "straining," &c., very frequently occurred, but it was found that provided the breathing were satisfactorily performed the circulation was well maintained. Unfortunately, this moderate anæsthesia is impracticable in the abdominal surgery of to-day and it hence happens that the door is opened to circulatory shock by the deeper anæsthesia which is required. Circulatory shock in its typical form may generally be distinguished from pure chloroform over-dosage or toxæmia by its suddenness, by its occurring at the moment of some particular nerve injury, and by the rapidity with which the patient passes from deep to light anæsthesia when the anæsthetic is withheld and remedial measures are applied. Cases constantly occur in practice in which the true surgical character of some circulatory disturbance under chloroform becomes conclusively proved as the administration proceeds, the symptoms vanishing as the nerve injury subsides, although the depth of anæsthesia remains the same. Moreover, it sometimes happens that a particular surgical procedure capable of producing circulatory shock is repeated after an interval, during which the surgeon is engaged in a stage of the operation not involving shock, and the anæsthetist may distinctly recognise two periods of pulse depression, more or less acute, coincident with the two procedures in question. Thus the introduction of a large sponge into the abdominal cavity prior to some operation upon the stomach or bowel is very liable during deep chloroform anæsthesia to produce pallor, pulse depression, and coldness of the forehead. When the sponge is *in situ* and the surgeon is engaged in introducing sutures (the patient still being deeply under chloroform) the symptoms of shock disappear. Subsequently, however, when the sponge is removed (the patient still being deeply under chloroform but with a good pulse and colour and a warm forehead) the symptoms of shock recur. It is not a difficult matter, as a rule, to diagnose pure circulatory shock from (3) circulatory depression due wholly to hæmorrhage, the circumstances in which the pallor and pulse depression arise being sufficiently indicative. Sometimes, however, when a considerable quantity of blood has been lost and the surgeon is disturbing important parts, the symptoms of the patient may be due partly to one cause and partly to the other As a general rule circulatory shock occurs comparatively early in operations and is characterised by slowness of pulse, whilst circulatory depression from hæmorrhage is generally met with in the later stages and is characterised by rapidity of pulse. Circulatory shock must also be differentiated from (4) intercurrent asphyxia due to such causes as the latero-prone or prone posture, the presence of mucus or blood within the larynx or trachea, &c. In all of these there is, as in respiratory surgical shock, an initial stage of respiratory embarrassment attended by lividity or even cyanosis, and the circulatory depression is a secondary phenomenon. At the same time it is not always an easy matter to say, in any given case, to what extent circulatory depression is due to circulatory shock, to respiratory embarrassment, or to hæmorrhage. I have known this difficulty in diagnosis to arise in a case of laminectomy; but as the pulse almost at once returned when the patient was moved from the prone into the lateral position it became clear, at all events in that particular case, that the circulatory depression was largely of respiratory origin. Lastly, sudden circulatory shock may be simulated by (5) the entry of air into a vein, but when the latter event produces acute symptoms the characteristic sound is generally to be heard.

The preventive treatment of circulatory shock rests partly with the surgeon and partly with the anæsthetist. With the measures generally adopted by the former we are hardly concerned on the present occasion. They are specially likely to be beneficial in feeble subjects about to undergo formidable operations. Amongst these measures may be mentioned the envelopment of all parts of the body except the part about to be operated upon in flannel or cotton wool, the maintenance of a room temperature of from 65° to 70°, and the administration of an enema of beef-tea and brandy just before the anæsthetic is given. Some surgeons have great faith in a preliminary injection of strychnine, but the beneficial effects of this drug are questionable. The preliminary injection of morphine ($\frac{1}{6}$ grain to $\frac{1}{3}$ grain), with or without atropine ($\frac{1}{120}$ grain), is certainly advantageous in carefully selected cases. We probably have in atropine a drug which should be more extensively used than it is at present, but further experience with it is needed before we can speak positively as to its value. Amongst the preventive measures which are in the hands of the anæsthetist I have already directed your attention to the most important—namely, the selection when possible of ether or of a mixture containing ether. Should chloroform be the selected anæsthetic an attempt should be made to retain a trace of corneal reflex when the procedure likely to induce shock is taking place. Should the operation be one which can be performed in the Trendelenburg posture and should chloroform be the chosen anæsthetic the adoption of this posture is certainly a most valuable preventive measure. The prevention of circulatory shock rests much more with the anæsthetist than is generally supposed. Should ether be contra-indicated on general grounds it may perhaps be administered temporarily during that particular part of the operation when the shock is likely to arise, or the C.E. mixture may be similarly used to replace chloroform.

The immediate treatment of incipient and moderate circulatory shock is as simple as it is successful. It is to suspend the anæsthetic and to allow the corneal reflex to return to a slight degree. By this procedure the pallor, the coldness of the face and extremities, the slow and small pulse, and the half-open eye may generally be quickly corrected, and fortunately this return to moderate anæsthesia during circulatory shock is not as a rule accompanied by inconvenient rigidity. A lessening in the depth of anæsthesia when circulatory shock begins to show itself should be looked upon as such an essential part of the duties of the anæsthetist that it should never be omitted. It is probably not an exaggeration to say that a considerable percentage of the more formidable operations of surgery are not completed as the surgeon would have them completed owing to the presence of too deep an anæsthesia. The erroneous dogma that to avoid shock patients must be profoundly anæsthetised still claims its victims and prevents the successful issue of many an operation. The rule should be, the greater the shock the lighter the anæsthesia; and with this rule to guide him the anæsthetist will find that he can frequently tide his patient over a critical period and so enable the surgeon to complete an operation which might otherwise have to be abandoned. Rubbing the face and lips with a dry towel is a valuable adjunct to the simple measure here described. Sometimes a lessening in depth of anæsthesia may with advantage be combined with a substitution of the C.E. mixture for chloroform or of ether for the C.E. mixture. Such a course is indicated in moderately severe cases. Sometimes, too, the patient's body may with advantage be tilted slightly by placing blocks under the lower end of the table. Should the circulatory shock be associated with shallow breathing the withdrawal of the anæsthetic may be coupled with chest pressure during expiration. In acute cases in which respiratory arrest quickly follows pulselessness the operation must be temporarily suspended, the patient's body drawn towards the anæsthetist, so that the head hangs over the end of the table, and rhythmic chest compression commenced. By alternately forcibly compressing the sides of the chest with the flat hands and relaxing the pressure air may generally be made to pass out of and into the lungs, but if there be the slightest difficulty in securing this end systematic artificial respiration must be practised. As already mentioned, recovery almost invariably takes place within a minute or two. If it be delayed the artificial respiration must be combined with more or less complete inversion of the body. Although the state we are considering is essentially a circulatory one care must be taken to avoid the slightest obstruction in respiration. Personally, I am not a believer in the use of drugs in this condition: lung ventilation and proper posture are the two cardinal remedies. In one of the most acute cases of surgical shock that I ever witnessed the pulse at both wrists disappeared for 20 minutes, but no remedial measures beyond keeping the legs high and the head low and maintaining free respiration were adopted: at the conclusion of the operation (the first stage of Kraske's operation) the pulse and colour had returned and the patient's condition became quite satisfactory. The patient made such a good recovery, indeed, that the second half of the operation was performed in two or three days' time. In exceptionally bad cases in which the patient's condition does not rapidly improve it may perhaps be advisable to administer a saline injection or infusion.

### CONCLUSIONS.

1. Two distinct varieties of surgical shock are met with during general anæsthesia: (1) respiratory and (2) circulatory. In pure respiratory shock the respiration is primarily affected (reflexly), the circulation only failing secondarily. In pure circulatory shock the circulation is primarily affected (reflexly), the respiration only failing secondarily.

2. When respiratory shock becomes complicated by circulatory, or circulatory by respiratory, a state of mixed or composite surgical shock is produced.

3. Respiratory surgical shock, which may occur under all anæsthetics, is most common during *light* or *moderate* anæsthesia—i.e., before the corneal reflex has vanished; whilst circulatory shock, which is far more common under chloroform than under other agents, is met with during *profound* narcosis.

4. The risk of preparing patients or commencing operations before full anæsthesia has been secured is from the *respiratory* and not from the *circulatory* side, as is generally believed.

5. Respiratory shock may arise during any operation, but it seems specially liable to complicate operations upon the rectum, urethra, abdominal organs, uterus, perineum, and kidney. The immediate cause of the respiratory arrest is usually a reflex spasm affecting either (*a*) the tongue, fauces, palate, and adjacent parts, and having stertor as its audible expression; (*b*) the larynx, and producing stridor; or (*c*) the respiratory muscles, and bringing about respiratory spasm.

6. Circulatory shock is chiefly, if not exclusively met with during operations upon parts which possess important nerves or are rich in nerve supply. The immediate cause of the circulatory phenomena is usually a more or less sudden relaxation or paralysis of the vaso-motor system, generally associated with some cardiac inhibition. In some cases the effect produced by the nerve injury is chiefly one of cardiac inhibition.

7. The most favourable conditions for the occurrence of acute and threatening respiratory shock are: (1) partially established anæsthesia; (2) manipulations or operations upon sensitive parts; and (3) the presence of an airway liable to become occluded.

8. The most favourable conditions for the occurrence of acute and threatening circulatory shock are (1) deep chloroform anæsthesia; (2) the horizontal, semi-recumbent, or sitting posture; and (3) intestinal, omental, uterine, or renal traction.

9. Certain subjects, by reason of the conformation of their upper air passages, seem specially liable to respiratory shock, whilst others, possibly from some abnormal instability of their vaso-motor systems, may perhaps be prone to circulatory shock. The state of the heart itself seems to have little or no influence.

10. There may be such a close resemblance between simple chloroform overdosage and circulatory shock under chloroform that the latter condition may be readily mistaken for the former.

11. Whilst surgical shock may undoubtedly be largely prevented by gentleness on the part of the surgeon, its prevention is also largely in the hands of the anæsthetist. The respiratory variety may usually be avoided by securing full anæsthesia before the patient is moved or the operation is begun, and by so adjusting the degree of anæsthesia that reflex modifications in respiration are as far as possible eliminated. As circulatory shock is very rare under ether it may generally be prevented by employing this anæsthetic. Should chloroform or a chloroform mixture be used there are only two ways in which to prevent circulatory shock during certain operations—viz., (1) to avoid too deep an anæsthesia, or if the patient be deeply anæsthetised to lessen the depth of anæsthesia so that the corneal reflex returns; or (2) to place the patient in the Trendelenburg posture. With the rarest exceptions, circulatory shock is never seen in the Trendelenburg posture.

12. The treatment of respiratory shock is to re-establish respiration as quickly as possible by such procedures as separating the clenched teeth, sponging out the fauces, pushing the lower jaw forwards, tongue traction, artificial respiration, and if need be, laryngotomy and direct lung inflation.

13. The treatment of circulatory shock in its milder form is simply to lessen the depth of anæsthesia and to substitute the C.E. mixture or ether for chloroform. In its acute form circulatory shock must be treated by withholding the anæsthetic, lowering the head, raising the feet, and, should respiration show signs of failure or actually cease, by performing artificial respiration. Unless the patient be so deeply anæsthetised by chloroform as to be in peril from this additional quarter recovery from circulatory shock may generally be effected very rapidly—within a minute or two—and the operation may then be proceeded with. Drugs are of little or no value as compared to the lines of treatment here indicated.

---

# THE CARRIAGE OF INFECTION BY FLIES.[1]

BY R. M. BUCHANAN, M.B. GLASG., F.F.P.S. GLASG.,
BACTERIOLOGIST TO THE CORPORATION OF GLASGOW.

I PURPOSE to present a few experiments in demonstration of the part which flies are capable of playing as agents in carrying and spreading infection. The experiments were undertaken as opportunity offered to test the value to be attached to the opinion frequently expressed of late years and emphasised by observations in the Cuban and South African campaigns that flies convey on their bodies infective material and contribute to the spread of certain diseases.

The flies used in the experiments were the common housefly (*Musca domestica*) and the bluebottle (*Musca vomitoria*). The latter is referred to hereafter in this paper as the blue fly. The flies were allowed a limited contact with infective material and then transferred directly to the surface of a solidified nutrient medium in a Petri capsule, and in some instances to a succession of such surfaces. By rotating the capsule, held at an angle, it was frequently possible to make the insect traverse the greater part of the surface of the nutrient medium, and when its transference to another capsule was desired this was accomplished without injury by means of a pair of curved sterilised forceps.

It may be remarked that the form and structure of the fly's foot (tarsus) are such as render it capable of carrying a large amount of infective material. It consists of five segments or "joints" which are clothed with short hairs and armed with numerous bristles and spines. The terminal segment is also provided at its tip with a pair of moveable claws and a pair of membranous flaps (pulvilli)—the latter coming into action on smooth surfaces (Fig. 1).

The diseases which were made the subject of the experiments were typhoid fever, swine fever, staphylococcal abscess, pulmonary tuberculosis, and anthrax.

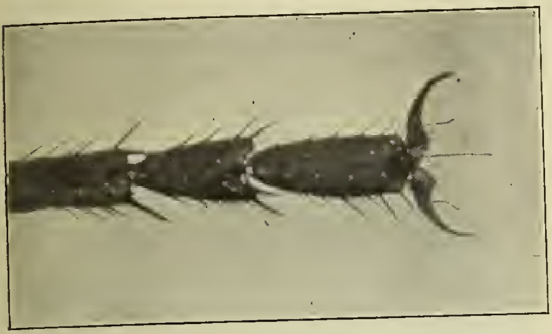
---

[1] A paper read before the Glasgow Medico-Chirurgical Society on Nov. 16th, 1906.

### *Typhoid Fever.*

*Experiment I.*—Six house-flies were caught by means of a net in three enteric wards of the Glasgow fever hospital (September, 1903) and placed in Petri capsules containing a layer of bile salt, lactose agar, with neutral-red and crystal-violet—i.e., the medium of MacConkey[2] modified by Grünbaum and Hume.[3] This medium favours the growth of bacilli of the colon and typhoid groups, and inhibits most other species. For the sake of convenience and brevity this medium will hereinafter be designated L-R-V-B agar. The flies were allowed to walk over the surface of the medium for a short time and were then withdrawn. A few colonies of coliform organisms appeared on three of the nutrient surfaces but no trace of bacillus typhosus was found. It will be observed that a possible fallacy entered into this experiment inasmuch as the flies were caught in a fly net, the fabric of which would tend to remove any infective material clinging to their feet.

FIG. 1.



Part of a fly's foot showing the claws and pulvilli of the terminal segment and the general armature of bristles and spines. The clothing of short hairs is not visible in the illustration. × 70.

*Experiment II.*—To obviate the possible fallacy mentioned in the previous experiment seven flies were caught by means of sterilised forceps in the enteric wards of the fever hospital and each fly was immediately placed in a Petri capsule containing L-R-V-B agar over which it was allowed to walk for at least five minutes. No growths resulted in any of the capsules.

*Experiment III.*—It was therefore decided to make the test in a more direct manner by bringing flies (collected in the kitchen of a restaurant) into direct contact with the dejecta of typhoid patients—one patient being in the eighth day of illness, two in the eighteenth, and one in the twenty-fifth. This object was attained by placing each fly in a Petri capsule, having in the bottom half a thin film made from a typhoid stool by means of a sterilised swab. The fly was introduced within the Petri capsule before the film had time to become dry, and after walking over the surface for a few minutes it was transferred to the culture medium and allowed similarly to traverse its surface for a few minutes. Thereafter the fly was transferred to a second and in most instances to a third capsule holding a similar layer of L-R-V-B agar or ordinary agar. Many bacteria were deposited on the nutrient surface from the insect's feet in each case and they were numerous in some instances, even on the third surface. From two of the fæcal films the flies were found to have carried typhoid bacilli to the surface of the nutrient medium, but the number of these bacilli was relatively very small. Thus in the case of B—— (eighteenth day of illness) there was only one colony of bacillus typhosus amongst 22 colonies of other species and in the case of L—— (twenty-fifth day of illness) two colonies of bacillus typhosus amongst 60 of other species. No typhoid bacilli appeared on the second and third surfaces traversed by the flies.

### *Swine Fever.*

*Experiment IV.*—An opportunity offered itself in an outbreak of swine fever in September, 1905, to test flies alighting upon pigs which had died from the disease and which had been subjected to post-mortem examination. The flies (*Musca vomitoria*) were caught by placing over them when quite still a wide tube of about one inch diameter (a Buchner tube). They at once rose into the inverted tube and were secured by a pledget of cotton wool which was pressed into the tube sufficiently to fix the insects so that they were prevented from moving about and removing any matter from their feet. In this way nine flies were collected from two carcasses and transferred to the laboratory. Each fly was placed in a Petri capsule containing a layer of ordinary agar and allowed to traverse the surface of the medium for about a minute. A very rich bacterial flora appeared on incubation, so much so that the agar was covered by a mixed confluent growth in most of the capsules. The bacillus of swine fever was isolated from one of the capsules. The flies were swarming on these carcasses and on other infective material, and were frequently seen to pass directly therefrom to the feeding troughs.

### *Staphylococcal Abscess.*

*Experiment V.* (November, 1905).—Pus from an abscess containing staphylococcus aureus was spread in a thin film in the lower half of a Petri capsule by means of a sterilised swab. A house-fly was caused to walk over this slightly moist purulent film and was then transferred to another Petri capsule containing a layer of agar. After incubation at 37° C. for 48 hours the agar showed a profuse mixed growth in which staphylococcus aureus predominated.

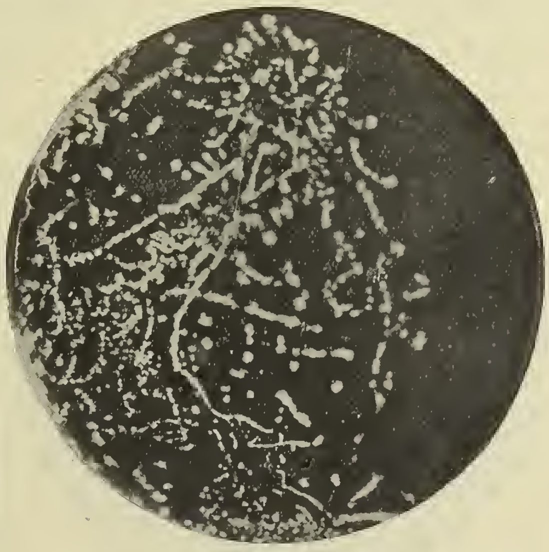
### *Pulmonary Tuberculosis.*

*Experiment VI.* (November, 1905).—To test the carrying power of flies in the same way in relation to expectoration a specimen of tuberculous sputum rich in bacillus tuberculosis was spread in a thin film in the bottom half of a Petri capsule. A house-fly was introduced into this capsule and caused to walk over the film for a few minutes. It was then transferred to another Petri capsule containing a layer of agar. On washing the surface of the agar with one cubic centimetre of bouillon and inoculating a guinea-pig intraperitoneally therewith, tuberculosis was induced which killed the guinea-pig in 36 days.

### *Anthrax.*

*Experiment VII.*—In the course of the examination of a guinea-pig dead from anthrax (October, 1903) it was observed that a blue fly had gained entrance to the laboratory and it was forthwith decided to make the intruder serve the purpose of an experiment. The fly was accordingly placed under a bell-jar. The carcass of the guinea pig, deprived of the skin and internal organs, was then placed under the same bell-jar. After alighting upon the moist surface of the carcass several times, the fly was transferred to a surface of

FIG. 2.



Growth of bacillus anthracis (24 hours) resulting from inoculation of agar surface in a Petri capsule by a blue fly which had just previously alighted on, and walked over, the skinned carcass of a guinea-pig dead from anthrax (Oct. 26th, 1903).

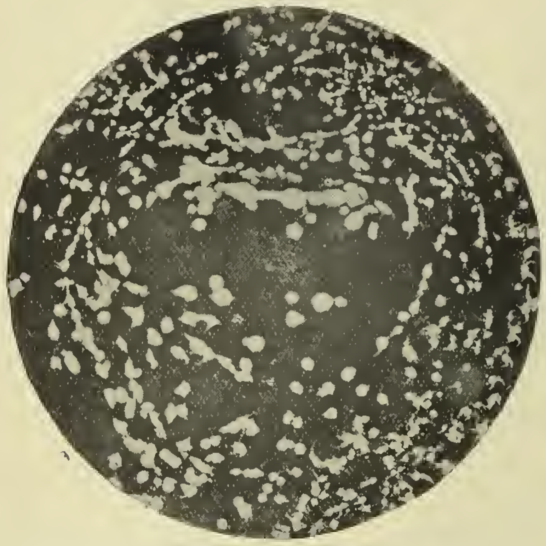
---

[2] THE LANCET, July 7th, 1900, p. 20.

[3] Brit. Med. Jour., 1902, vol. i., p. 138.

agar in a Petri capsule and was allowed to walk thereon for a short time. A second agar surface was provided on which it was also allowed to walk for the same time. Incubation for 24 hours at 37° C. brought forth on both agar surfaces a very profuse growth of bacillus anthracis (Figs. 2 and 3).[4] It was not anticipated that the second surface would show so much growth, and it would have been of interest and importance had the cultures been extended in a longer series to determine how many fresh surfaces such a fly was capable of infecting. Its potentialities in the direction were altogether underestimated.

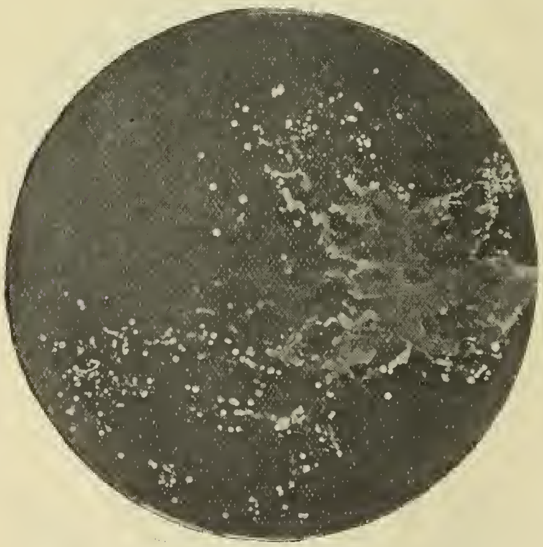
FIG. 3.



The second agar surface traversed by the same blue fly, showing by the profuse growth of bacillus anthracis (24 hours) the large amount of infection which still remained on the insect's feet after contact with the first agar surface.

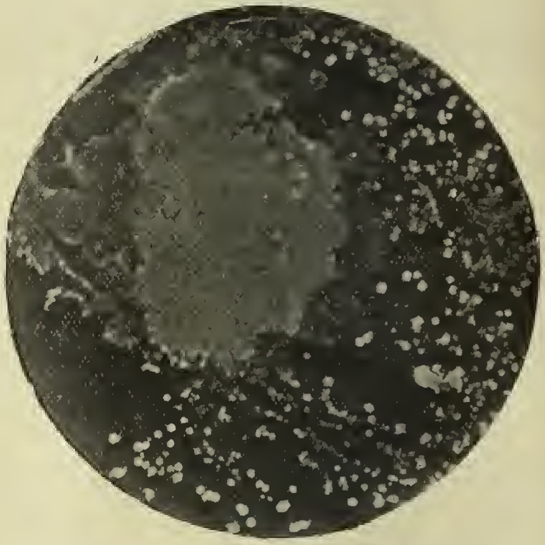
*Experiment VIII.*—With the view of testing the value of these results under conditions of ordinary experience an anthrax carcass (ox) which had been seized by the veterinary surgeon in the Glasgow Dead Meat Market (November, 1905) was made the subject of experiment. A house-fly was placed under a bell-jar resting on one of the hind quarters of the carcass, the surface of the part being quite firm and dry. When the fly had alighted on and walked over the part several times it was transferred to a Petri capsule and caused to traverse the surface of the nutrient medium. After 24 hours' incubation at 37° C. a growth of various species appeared, including seven colonies of bacillus anthracis (Fig. 4). A second fly, held by the wing by means of forceps, was directed across the cut surface of the kidney and gave rise to a profuse growth of bacillus anthracis, amongst other species, on solidified agar (Fig. 5). A third fly, directed in like manner over the cut surface of the thigh muscles, produced a profuse growth of several species, amongst which were found two colonies of bacillus anthracis.

FIG. 4.



Growth of several species of bacteria (24 hours), including seven colonies of bacillus anthracis, resulting from inoculation of agar surface in a Petri capsule by a house-fly which had just previously alighted on, and walked over, a part of the hind quarter of an imported anthrax carcass (ox) seized in the Glasgow Dead Meat Market (Nov. 15th, 1905).

FIG. 5.



Profuse growth of bacillus anthracis amongst other species (24 hours) resulting from inoculation of agar surface in a Petri capsule by a house-fly which had just previously been allowed to walk over the cut surface of the kidney in the same carcass.

The experiments conclusively show that flies alighting on any substance containing pathogenic organisms are capable of carrying away these organisms in large numbers on their feet and of depositing them in gradually diminishing number on surface after surface with which they come in contact. They further serve to demonstrate the necessity for the exercise of stringent measures to prevent the access of flies to all sources of infection and to protect food of all kinds against flies alighting on it.

Glasgow.

THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Arrangements for the amalgamation of the Royal National and City Orthopædic Hospitals have now been completed and the patients of both hospitals are being seen in the temporary premises of the amalgamated institution, Nos. 45–47, Bolsover-street, immediately behind the old hospital in Great Portland-street. Dr. J. Hughlings Jackson has been elected honorary consulting physician to the Royal National Orthopædic Hospital and Dr. G. A. Sutherland, Mr. John Poland, and Mr. J. Jackson Clarke have been elected honorary physician, honorary surgeon, and honorary surgeon respectively. The new building operations have been begun and a hospital for 213 in-patients is being built on the site of the old hospital and the adjoining premises. The new out-patient department is to be separated from the hospital and will be on the opposite side of the road, on the east side of Bolsover-street, the hospital and the out-patient department being connected by a subway beneath Bolsover-street. Temporary accommodation for in-patients is provided in three of the vacant wards at Charing Cross Hospital which have been rented by the Royal National Orthopædic Hospital.

---

[4] The photographs illustrating this paper were taken by Mr. W. R. Ogilvie.

# A NEW MICROSCOPICAL DIAGNOSTIC METHOD AND SOME SIMPLE METHODS FOR STAINING LIQUID BLOOD.[1]

BY RONALD ROSS, F.R.S., C.B., F.R.C.S. ENG.,
PROFESSOR OF TROPICAL MEDICINE IN THE UNIVERSITY OF LIVERPOOL;
J. E. SALVIN-MOORE, A.R.C.S., F.L.S., F.Z.S.,
PROFESSOR OF CYTOLOGY AND DIRECTOR OF THE CANCER RESEARCH LABORATORIES;
AND
C. E. WALKER, F.L.S.,
ASSISTANT DIRECTOR OF THE CANCER RESEARCH LABORATORIES.

IN a recent publication[2] we discussed certain strings of granules which can be found by means of appropriate staining in a percentage of the red corpuscles in health and disease. We showed that they are the remains of the nucleus of the original cell and called them *chromolinin granulations.* In health they occur roughly in about 1 per cent. of the corpuscles, but in a few pathological conditions which we studied they occurred much more frequently. Thus, in a case of tropical abscess of the liver they were found in 6·6 per cent. of the corpuscles, in a case of chronic malarial anæmia in 11·5 per cent., while in ankylostomiasis, kala-azar, and rats with trypanosomes and spirochætæ they were detected very frequently. We inferred that an excessive percentage of corpuscles with the granulation was indicative of the discharge of the red corpuscles into the blood stream at an earlier stage in their development than usual, due probably to processes of blood destruction and regeneration which, so far as we know, cannot be estimated by other methods. We now write to call the attention of clinicians more pointedly to the phenomenon in the hope that a study of it in many diseases will prove useful for diagnosis and treatment.

Probably the simplest method for demonstrating the granulation is the glass-rod method of liquid staining described by one of us hereafter. A polychrome saturated solution of methylene blue in 0·5 per cent. salt solution should be used. In about a quarter or half of an hour many of the red corpuscles are found to contain minute blue points, often lying in strings, either few in number or so numerous as to fill a large part of the corpuscle. The granules look like small particles of stain adhering to the surface of the corpuscle; but, of course, are not really of this nature. True nucleated red corpuscles can be easily distinguished by the fact that the nuclear membrane is still intact.

To estimate the percentage of granular red corpuscles as quickly as possible the following procedure is the best. The whole area of the field should not be examined, but the corpuscles should be passed rapidly in review one by one across the centre of the field and be counted as they pass, and as each granular corpuscle comes up an assistant should score a mark on a piece of paper. In this way nearly a hundred corpuscles may be scrutinised by the minute. In order to avoid serious error of "random sampling" at least a thousand corpuscles should be examined; but if the percentage of granular corpuscles is over 5 of this first thousand corpuscles we should examine another thousand, or if it is over 10, 15, &c., we should examine another two or three thousand, &c.

Many of the granular corpuscles, when stained with polychrome methylene blue, will often be found to contain after half an hour, in addition to the blue granules, one or more large deep crimson dots. These are the centrosomes of the original cell, as shown in our paper already referred to. It is possible that an estimate of the percentage of granular corpuscles which contain them will also prove to be of assistance in diagnosis. Nissle has independently just called attention to what appear to be the same bodies but does not give drawings.[3]

*Some Simple Methods for Staining Liquid Blood*, by Professor RONALD ROSS.—The staining of dried films is now being abandoned more and more for cytological work, and it may therefore be worth while to describe briefly some methods for making sufficiently thin stained films of liquid blood. Several such are given in text-books of hæmatology. One of the oldest, which was suggested by Soulié in 1890,[4] but was probably known long previously and has certainly been often re-discovered since, consists in spreading and drying a film of alcoholic solution of a stain on a glass slide and then placing over it the cover-glass charged with a droplet of blood. The elements soon take up the colour and beautiful preparations can be made, though there is often much granular matter and the blood does not always spread well.

1. *Glass-rod method.*—The plan of mixing the droplet of blood with aqueous solutions of stain in various ways has, of course, been largely used. The difficulty lies in getting a sufficiently thin film, because as a rule there is too much fluid in the mixture to allow of a single layer of corpuscles being obtained. After trying many methods I find the following one to be the simplest and best. A large drop of blood is taken up on a glass slide, and a drop of stain, not larger than the drop of blood, is quickly placed close beside it with the end of a glass rod. Then, with the other end of the rod the two drops are thoroughly mixed together, and small quantities of the mixture (say, of the size of a pin's head) are transplanted on to several other slides (just previously wiped clean from dust), where each is covered with a cover-slip gently let down upon it. The smaller the droplet of mixture transplanted the thinner the resulting film, and the advantage of the use of the glass rod in this manner is that we can transplant droplets as small as we please and consequently obtain films of any tenuity we may wish for. Specimens for a considerable class may thus be made from a single drop of blood. Aqueous solutions of many stains may be employed and will not generally dissolve the red corpuscles if the amount of solution used is not in excess of the amount of blood.

One of the most useful stains is an old polychrome filtered saturated aqueous solution of methylene blue in 0·5 per cent. salt solution. Large areas, with separate corpuscles in single layer, yet not too much crushed, are obtained, just as in the best dried films. The leucocytes and blood plates are stained almost at once, although the background is almost colourless. A little later the red corpuscles take a blue tinge, and the chromolinin granules and centrosomes of a certain percentage of them[5] (which are not easily disclosed in dry stained films) begin to show up—the granules coloured blue and the centrosomes deep ruby red. The centrosomes of leucocytes are also coloured red; and it is important to note that the blood plates show similar minute red points, which, if they also are centrosomes, as is possible, will establish the long-contested cellular nature of these bodies. Trypanosomes can be well stained by several reagents. I am beginning to use this method generally in place of the ordinary unstained wet films.

2. *Agar method.*—Ordinary nutrient agar is melted and mixed with filtered saturated solutions of various stains (e.g., polychrome methylene blue) and poured on sloped glass slides, so as to obtain very thin films of the stained agar on the glass. The agar sets on the glass almost at once but does not dry until some time later. While its surface is still moist a coverslip charged with a droplet of blood is dropped upon it. The blood spreads out beautifully, the red corpuscles being generally disposed in a single layer of perfect discs. In a few minutes the elements take up the stain by adsorption from the stained agar, centrosomes and chromolinin granulation becoming apparent later. The picture is similar to that of Method I. but perhaps a little inferior, as the staining is not so vivid and the background is not so clear. Deetjen, so far as he can be understood, seems to have used this method but only partially in his study of blood plates[6]; but on the whole I do not think it is as good, even for this purpose, as Method I. The agar should be as deeply stained as possible, so as to stain the cells quickly; but the film of it on the glass should be as thin as possible, so as to allow sufficient light through it.

3. *Drained drop method.*—Thin liquid films are usually obtained by pressure between two surfaces of glass, but the following method gives a very thin liquid layer on a single surface. A coverslip is charged with a fairly large droplet of blood slightly spread out upon it and is then inverted on a shallow cell made with vaseline on a glass slide. This gives

---

[1] The two short articles which follow are records of work done at the Johnston Laboratories, University of Liverpool.

[2] Ross, Moore, and Walker: Transactions of the Pathological Society of London, vol. lviii., part 1, 1907.

[3] Nissle: Archiv für Hygiene, München, Band lxi.

[4] Soulié: Bulletin Médicale de l'Algérie, 1890, p. 230.

[5] Ross, Moore, and Walker: Transactions of the Pathological Society of London, vol. lviii., part 1, 1907.

[6] Deetjen: Archiv für Pathologische Anatomie und Physiologie, Band clxiv., p. 239, 1901.

a usual hanging-drop preparation; but the coverslip is now pressed down evenly and gently on the yielding vaseline until the lowest surface of the hanging drop touches the upper surface of the glass slide below it. There is thus formed a column of blood touching both the slide and the coverslip. Round this column on the under surface of the coverslip a clear zone of extreme tenuity and about a milligramme in breadth will be found. So shallow is the blood here that leucocytes and clusters of blood plates cannot get past it, while the red corpuscles can only squeeze through gradually. The cells are therefore spread out in this zone as perfectly as in any ordinary liquid or dry film, but only by adhesion to the glass, while, as the cell is air-tight, drying does not occur for hours. Moreover, the zone acts as a kind of filter for the leucocytes, which will be seen in hundreds adhering living to the glass and still kept moist with serum. For staining, the blood may be mixed beforehand with a solution of some stain, or, perhaps better, with a few small particles of the undissolved stain. Exquisite pictures of all the elements can thus be obtained without any flattening by pressure.

Specimens made by these methods are, of course, not permanent, as the elements soon break up. But by mixing the solution of stain used for Method I. with glycerine or Farrant's preservative the preparations will last in fair condition (enough, for example, to show the chromolinin granulation of the red corpuscles) for some months. For good permanent preparations, however, more complex methods must apparently be used, such as that of Walker, described in the paper already referred to.[7]

# A CASE OF CEREBRO-SPINAL MENINGITIS; ISOLATION OF THE SPECIFIC ORGANISM; PREPARATION OF A VACCINE; RECOVERY.

BY C. RUNDLE, M.D. LOND., M.R.C.S. ENG., AND
J. C. MOTTRAM, M.B. LOND., M.R.C.S. ENG.,
OF THE NEW CITY HOSPITAL, LIVERPOOL
AND
R. STENHOUSE WILLIAMS, M.B., C.M. EDIN.,
J. ORR, L.R.C.P. EDIN., AND A. E. WILLIAMS, M.D. EDIN.,
OF THE HYGIENIC LABORATORIES, UNIVERSITY OF LIVERPOOL.

THE patient, a male child, aged six months, was admitted to the City Hospital, Fazakerley, Liverpool, on Feb. 27th, 1907, certified to be suffering from cerebro-spinal fever. The diagnosis having been verified a vaccine treatment was decided upon, with results which seem sufficiently noteworthy to justify a report upon the clinical manifestations and course of treatment.

*History of onset.*—The child is stated to have been taken suddenly ill a fortnight before admission to hospital with vomiting and convulsions. Retraction of the head and neck was observed four days subsequently and squint within a week. Emaciation had been sufficiently marked to attract the attention of the mother within ten days of onset.

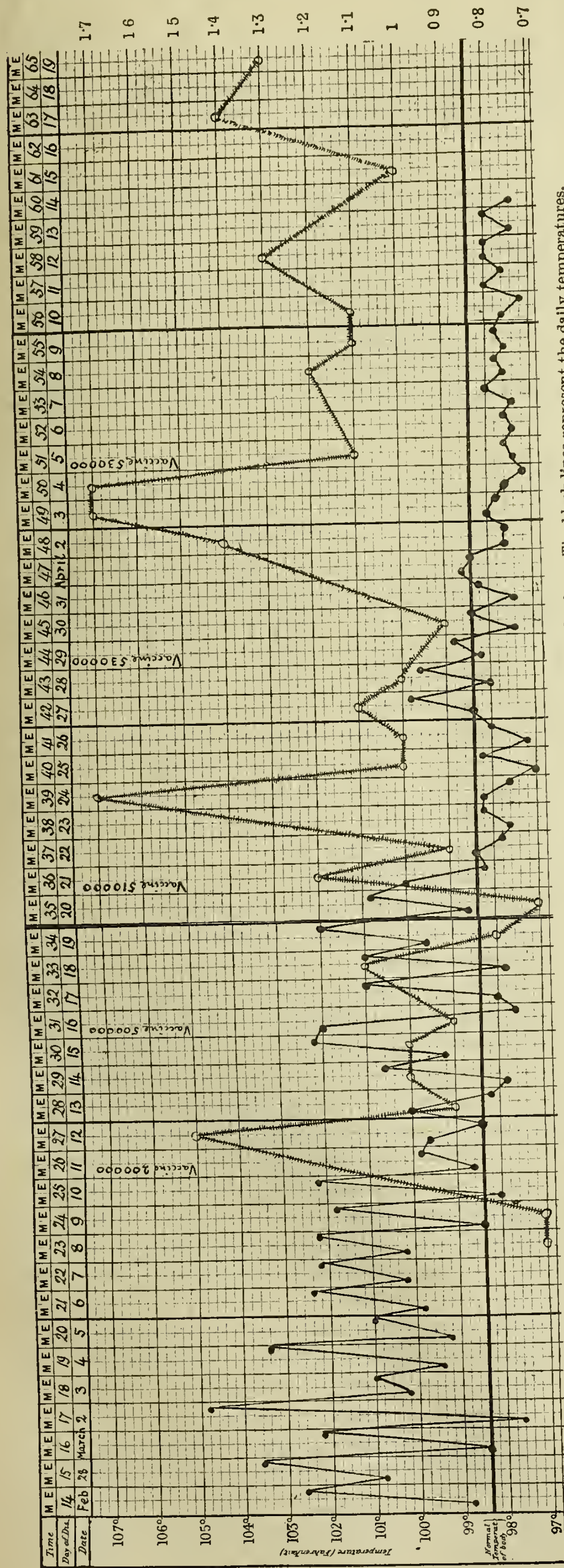
*Condition on admission.*—The general nutrition was fair, but loose folds of skin about the arms and thighs pointed to some recent wasting. The skin was pale and dry, presenting no rash. Beyond a few scattered râles no physical signs of disease were observed in the lungs; respiration was normal in character and frequency. The pulse was of fair tension, regular, and of normal frequency. Vomiting, a marked feature of the initial illness, had ceased; nourishment was taken readily and without difficulty. The general appearance and attitude of the child pointed to a profound disturbance of the nervous system. He lay on his side with his elbows and knees flexed, screamed shrilly at intervals, whilst his expression bore evidence of recurrent attacks of pain. The motor symptoms were definite and characteristic. The head was slightly extended on the spine and attempts to flex it were firmly resisted. The cervical and dorsal spines were fixed rigidly in orthotonos. The erector muscles of the spine were contracted and prominent with disappearance of the spinous processes between them. There was no trismus. The upper extremities were flexed at the elbows and the knees were drawn up upon the abdomen. These rigidities were tonic and not the result of an involuntary effort to resist movement. No clonic spasms or convulsions were observed. Double internal strabismus was marked and constant. Deglutition was unaffected. The age of the child precluded an accurate record of sensory impressions. Hyperæsthesia of the joints and skin was very marked. A light touch on the skin of the abdomen was sufficient to produce a scream of pain. No areas of anæsthesia were observed. There was no intolerance of ordinary daylight but the electric light called forth an immediate expression of pain. Similarly, although ordinary sounds produced little effect, loud noises, such as a clapping of the hands, caused obvious distress. No marked changes in the superficial or deep reflexes were observed. Kernig's sign was present but Babinski's sign was absent. The knee-jerks were slightly exaggerated. From the time of admission to the commencement of the vaccine treatment on March 11th the condition of the child became progressively worse. The general nutrition failed rapidly until no subcutaneous fat could be detected on pinching the skin. Spasm of the muscles of deglutition was induced by each attempt to swallow and the extreme retraction of the head and neck appeared to offer a physical obstruction to the passage of food. The contraction of the erector muscles of the spine produced a complete tetanoid opisthotonos. The elbows, hips, knees, and ankles became rigidly flexed, and the eyes fixed and staring. The pupils remained equal and active throughout. No paralyses or areas of anæsthesia were observed. Variations in the quality and timing of the pulse occurred, but retardation was never a marked feature. From March 9th to 11th vomiting recurred repeatedly and rectal feeding was resorted to. During this period the presence of the diplococcus intracellularis meningitidis had been detected in the cerebro-spinal fluid repeatedly, but lumbar puncture produced no alleviation of the irritative phenomena.

The first vaccine inoculation was made on March 11th. With the exception of a remission in the temperature of the body no marked change was observed in the clinical manifestations during the succeeding 48 hours. On the 14th, however, a definite decrease in the degree of extension of the head and neck was noted, the spine could be straightened with the exercise of moderate force, and lateral movements of the head were made voluntarily. On the evening of the 14th an exacerbation of the pyrexia occurred, not accompanied by an aggravation of the irritative phenomena. A second inoculation was made on the 16th followed by a period of apyrexia lasting 24 hours. On the 17th the eyeballs were observed to be fixed less rigidly, some lateral movements occurred voluntarily. The improved position of the head and neck at this period made feeding by the mouth again possible. Vomiting ceased entirely. Hyperæsthesia and Kernig's sign persisted. During the period from the 17th to the 21st the temperature was raised and irregular; a third inoculation was made on the latter date, followed, as were the previous inoculations, by a period of apyrexia persisting on this occasion six days. The squint was now occasional only, the position of the head and neck approaching the normal, and the flexion of the joints of the extremities was easily overcome. A moderate degree of pyrexia from the 27th to the 29th was met by a further dose of vaccine on the latter day. The temperature subsequently remained normal until the end of treatment. Kernig's sign was first noted as absent on April 2nd. From this date to the conclusion of treatment a rapid and progressive improvement in the condition of the child was maintained. The irritative phenomena and hyperæsthesia disappeared. The appetite and state of nutrition became normal. No affection of the special senses persists.

Our investigations into the efficacy of vaccine treatment in this disease have been restricted by the freedom of the city of Liverpool from cerebro-spinal fever in epidemic form, but there are, we think, some encouraging features in the history of this case and its treatment. The patient came under treatment at a time when his condition justified a most unfavourable prognosis. The extreme and progressive retraction of the head and neck, accompanied by other advanced nervous phenomena, the return of the vomiting (a most grave symptom), and the rapid emaciation pointed to the probability of a fatal termination. The apyrexia following the first injection of vaccine recurred after subsequent injections. So rapid and complete a recovery with no definite relapses or involvement of the special senses could, we think, scarcely have been expected with the customary methods of treatment at our disposal.

---

[7] Loc. cit.



The dotted line represents the curve of the opsonic index. The figures on the right give its numerical value. The black lines represent the daily temperatures.

*Preparation of vaccine.*—A 24-hours old culture was inoculated into sterile normal saline solution and placed in a water bath at 60° C. for half an hour; nasgar tubes were inoculated from it and incubated overnight to test sterility. The number of cocci contained was estimated by mixing known volumes of washed normal blood and vaccine; these were then diluted with normal saline solution, films prepared at once and stained by Leishman's method. The number of organisms present was counted against the red blood corpuscles. The vaccine was freshly prepared for each of the first four doses; the fifth had been made seven days before use. No local reaction was observed after any of the injections.

*Opsonic index.*—Equal parts of leucocytes, emulsion (24-hours old culture in 0·1 per cent. NaCl), and serum were mixed together and incubated at 37° C. for ten minutes; we found that 15 minutes made the count extremely difficult to perform from excessive vacuolation and rapid degeneration of the cocci. The smears were stained by Leishman's method; at least 200 leucocytes were counted. The changes in the index and temperature are best seen by observation of the chart. The first inoculation (200,000) was made on March 11th, the index having been then 0·7 on two consecutive days; on the 12th it rose to 1·5 but fell again to 0·9 and 1 on the 13th, 14th, 15th, and 16th. As this dose had produced no harmful effects but had been followed by temporary alleviation we repeated it (500,000) on the 16th. A small rise in the index was observed on the 18th; on the 19th and 20th a fall was recorded, but on the 21st the index had risen to 1·2. A further dose (510,000) was given and a slight fall on the 22nd was followed by an abrupt rise on the 23rd. Within 48 hours the index had again dropped markedly. The events following the first inoculation had repeated themselves. As the index remained comparatively low on the 25th, 26th, 27th, and 28th, with a slight tendency to rise of temperature on the two last days, a fresh dose (530,000) was given on the 29th. The index fell slightly, followed by a rise which was well maintained until April 4th. On the 5th the index had dropped to 1·1. What proved to be the last inoculation was made on this day. A slight rise was noted on the 8th. The subsequent indices are recorded on alternate days. Since the inoculations were on each occasion followed by a rise in the index, and on three occasions by a rise of so marked a character, it seems reasonable to suppose that there is a connexion between the two events.

*Agglutination.*—These experiments were performed within five hours of the removal of the blood, by the platinum loop method, microscopic examination, laboratory temperature (12°–15° C.) except on one occasion mentioned in the text. The organisms were obtained from 24 hours old "nasgar" cultures emulsified in 0·1 per cent. salt solution. Controls were invariably negative. Five sets of experiments were performed.

*A.*—To test the agglutination of normal serum on the Liverpool coccus. This was done on six occasions; once a 1 in 5 dilution agglutinated in ten minutes; subsequent experiments failed to repeat this. Higher dilutions were invariably negative; time, one hour.

*B.*—To test the agglutination of the Liverpool coccus by the patient's serum. The table given below shows that during the period of the observations the agglutination reaction was at a maximum from the fortieth to the fiftieth day of the disease, and from that date has shown a steady decline.

| Day of disease. | Dilutions. | | |
|---|---|---|---|
| | 1 in 50. | 1 in 100. | 1 in 500. |
| 36 | 15 mins. | — | — |
| 40 | 10 ,, | 25 mins. | 47 mins. |
| 50 | 12 ,, | 25 ,, | — |
| 58 | 34 ,, | 48 ,, | 64 mins. (incomplete) |
| 64 | 45 ,, | Neg. 60 ,, | — |
| 63 | 90 ,, (incomplete) | Neg. 90 ,, | Neg. 90 mins. |
| 72 | 87 mins. | Neg. 105 ,, | — |

Neg. = Negative.

*C.*—To test the agglutinating power on the Liverpool coccus of the sera of patients suffering from other diseases.

In this connexion one observation was made which is of interest in that it affects the specificity of the reaction. The blood of a patient suffering from scarlet fever (twenty-third day of disease, severe case, no complications) agglutinated the Liverpool strain in dilutions 1 in 20 (45 minutes); 1 in 50 (60 minutes); and 1 in 100 (neg., 75 minutes). Further investigations in this subject are being made.

*D.*—To test the identity of the Liverpool strain by comparing the effect of the patient's serum upon strains derived from other sources with its effect upon the Liverpool strain. For the cultures used we are indebted to Dr. Buchanan and Professor W. St. Clair Symmers.

| Day of disease. | Source of culture. | Dilutions. | | |
|---|---|---|---|---|
| | | 1 in 50. | 1 in 100. | 1 in 500. |
| 43 | Belfast. | 20 mins. | 40 mins. | — |
| 50 | Glasgow. | 24 ,, | Neg. 60 ,, | — |
| 54 | Glasgow (C——). | 30 ,, | 50 ,, | Neg. 60 mins. |
| 58 | Glasgow (B——). | 32 ,, | 40 ,, | Neg. 60 ,, |
| 61 | Glasgow. | 27 ,, | Neg. 60 ,, | — |

Löffler's methylene blue, as the latter failed to stain the degenerated forms, of which, except in very young cultures, large numbers were present. Gram's method was invariably negative.

*Morphology.*—Cocci, diplococci, and tetrads; no tendency to chain formation even in fluid media; there was much variation in size, the greater breadth compared with the length was a marked feature. The adjacent surfaces of the diplococci were flattened.

*Reactions in carbohydrate media.*—Medium employed: Lemco, 1 gramme; peptone, 1 gramme; sodium-bicarbonate, 0·1 gramme; carbohydrate, 1 gramme; 10 per cent. watery solution litmus, 10 cubic centimetres; ascitic fluid, 10 cubic centimetres; and distilled water to 100 cubic centimetres. Boiled for 20 minutes, 10 cubic centimetres filtered into sterile test tubes, and sterilised in Koch's steam steriliser for 20 minutes on three consecutive days. The tubes were inoculated from 24-hours old "nasgar" cultures and incubated at 37° C. for seven days. Films were made at intervals to test for possible contamination; on the seventh day "nasgar" tubes were inoculated from the carbohydrate cultures and gave a typical growth. The following table represents the changes that occurred:—

TABLE SHOWING THE CULTURE REACTIONS OF THE MENINGOCOCCUS ON CARBOHYDRATE MEDIA.

| Origin of organism. | Maltose. | | Glucose. | | Galactose. | | Saccharose. | | Raffinose. | | Inulin. | | Salicin. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. | Commencement of reddening. | Maximum reddening. |
| | Third day. | Fifth day. | Second day. | Fifth day. | Fourth day. | Sixth day. | | | | | | | | |
| Liverpool ... ... ... ... | + | ++ | + | ++ | + | ++ | – | – | – | – | – | – | – | – |
| Glasgow ... ... ... ... | + | ++ | + | ++ | + | ++ | – | – | – | – | – | – | – | – |
| | | | | | Second day. | | | | | | | | | |
| Glasgow (Currie) ... ... | + | ++ | + | ++ | + | ++ | – | – | – | – | – | – | – | – |
| Glasgow (Briggs) ... ... | + | ++ | + | ++ | + | ++ | – | – | – | – | – | – | – | – |
| Belfast... ... ... ... ... | + | ++ | + | ++ | + | ++ | – | – | – | – | – | – | – | – |

+ Indicates the first day on which a change of colour was noticed; ++ indicates the maximum reaction (a distinct reddening); and – denotes absence of reaction.

The table shows that the serum of our patient agglutinated all the strains available in the same dilutions as the Liverpool strain.

*E.*—Experiments to test the power of the patient's serum upon other organisms; for these the typhoid bacillus, bacillus coli, pneumococcus, and a streptococcus derived from a human throat were used. The typhoid bacillus, bacillus coli, and pneumococcus showed no agglutination even in dilutions of 1 in 10 (time, one hour). The streptococcus showed no agglutination in 23 hours incubated at 32° C.; dilution 1 in 10.

These experiments show that the agglutination reaction is not strictly specific, since both normal serum and the serum of a patient suffering from another disease produced it.

*Identification of organism.*—The cerebro-spinal fluid was obtained on March 1st (sixteenth day of the disease); films were stained but we were unable to satisfy ourselves of the presence of a bacterium. Tubes of Löffler's blood serum and ascitic fluid broth (1 : 2) were inoculated and incubated at 37° C. On the following day a pure growth of a coccus was observed on the blood serum tubes and occasional large cocci were found in the ascitic fluid broth; sub-cultures were made on human blood agar, Löffler's blood serum, and nasgar. In the early stages Löffler's blood serum gave the best results; it is of importance that it should not be overheated or dry.

*Appearance of 24-hours old "nasgar" growth.*—Smooth, greyish-white, moist-looking. On attempting to remove some of the culture with platinum needle distinct "stickiness" is noted.

*Staining reaction.*—The coccus stained with the usual aniline dyes; weak carbol-fuchsin gave better results than

Anaerobic cultures on "nasgar" by the pyrogallic method incubated at 37° C. were negative. Aerobic cultures on "nasgar" incubated at 20° C. also were negative.

We believe that the clinical features of the case, the morphology, the staining reactions, and the agglutination reactions compared with those obtained with meningococci from other sources, the changes in the carbohydrate media, and the absence of growth in anaerobic cultures and in aerobic cultures at 20° C. justify us in presuming that we were dealing with the diplococcus intracellularis meningitidis. The animal reactions were not successful. A 24 hours old "nasgar" culture was inoculated by intravenous injection into a rabbit on March 16th; the animal was alive and well on April 24th. 0·5 cubic centimetre of the cerebro-spinal fluid was inoculated into the peritoneal cavity of a mouse on March 1st; the animal died three days later. It had shown no symptoms before death; after death we were unable to demonstrate the coccus either in films or by growth on media.

The report of Dr. M. H. Gordon to the Local Government Board has been of very great assistance to us in this work.

Liverpool.

---

LITERARY INTELLIGENCE. — Messrs. W. B. Saunders Company have in the press, and will publish at an early date, a new work dealing with "The Pancreas, its Surgery and Pathology," by Mr. A. W. Mayo Robson and Dr. P. J. Cammidge, incorporating the results of the original investigations of the authors. The progress made within recent years in the knowledge of the functions and diseases of the pancreas has been so rapid that a book dealing with this important organ will be welcome.

# A STUDY OF THE CONDITIONS PRODUCING THE ANOMALOUS REACTION NOT INFREQUENTLY MET WITH ON TESTING URINE FOR SUGAR WITH FEHLING'S SOLUTION.

BY F. W. PAVY, M.D. LOND., LL.D., F.R.S.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL; HONORARY PHYSICIAN TO KING EDWARD VII. HOSPITAL.

IT falls within common knowledge that on testing urine for sugar with Fehling's solution a reaction may be obtained which is so at variance with what is ordinarily met with as to give rise to no inconsiderable embarrassment. The anomalous reaction to which I am alluding has recently formed the subject of consideration in a communication on "The Detection of Sugar in Urine, &c.," by Dr. A. M. Kellas and Dr. F. J. Wethered to be found at pages 1058 and 1136 of the second volume of THE LANCET for 1906, and in an article entitled "Observations on Fehling's Test for Dextrose in Urine," by Dr. Hugh MacLean published in the *Bio-Chemical Journal*, vol. i., p. 111, 1906. Through these communications I have been prompted to conduct the inquiry which has resulted in the information being obtained which I propose herein to set forth. In view of my long association with the operation of testing for sugar the undertaking has afforded congenial work. In addition, I may say that I have been impressed with the feeling, on looking at the value of Fehling's solution as a urinary test and the extensive employment it commands, that it might well be considered worthy of the bestowal of efforts to clear up an anomalous behaviour that is not infrequently observed to follow its application to certain kinds of urine.

The point to be determined is what stands at the foundation of the varieties of anomalous behaviour of the test that are observed. The essential action which in all circumstances takes place is a reduction of the cupric oxide to the state of suboxide. Under what may be spoken of as the normal reaction, or that occurring when the test liquid is boiled with an aqueous solution of glucose, the suboxide formed presents itself immediately to view as a dense vermilion-red precipitate, which more or less quickly settles out of the liquid. However small the quantity of sugar the precipitate falls in the form mentioned when extraneous matter is absent and a sufficient quantity of Fehling's solution is employed. In the case of urine, when large quantities of sugar are present, a precipitate is immediately produced, but the colour of it is different, being observed to range from yellow to brownish red. In the presence, on the other hand, of small quantities, a wide difference is noticeable in the character of the result occurring. At first no precipitate may be produced and none even may show itself till after somewhat prolonged boiling or it may be none may appear till after the test tube has stood in the rack for a little time. The precipitate in these circumstances possesses a yellow colour which it retains without passing into the pronounced red, as happens in the case of the application of the test to urine containing a large quantity of sugar. It sometimes happens that a change of colour occurs without any definite settlement of precipitate. With this change the liquid assumes an opalescent or milky character and may be found in this state on the following day, the colour being either yellow, yellowish green, or another shade of green, according to the preponderance of yellow from reduced oxide or of blue from the unreduced test solution.

To what are all these points of variation attributable? Chemists tell us that, as with the cupric oxide, the cuprous oxide presents itself in the hydrated and the non-hydrated form, the former being stated to be represented by the yellow and the latter by the red product. The shades of colour from yellow to red that may happen to be observed are assigned to transition from the hydrated into the dehydrated state. It may be said to be in harmony with what might be expected under the view specified that the process of boiling should promote the occurrence of dehydration, and it is noticeable that it tends to promote the passage of a yellow into a red precipitate. In the case, for example, of a cuprous salt it is open to observation that the bright yellow precipitate which falls on the careful addition of a caustic alkali passes on subjection to ebullition into a red or brownish-red; and the phenomenon is attributed by chemists to the occurrence of dehydration. I shall show later that the alteration of colour is associated with an altered physical state rendered evident by the microscope.

At variance with the ordinary reaction attended with the production of a more or less copious precipitate, a reaction, as mentioned, may present itself in which there is a change of colour to different shades of green or even to yellow without any actually visible precipitate at the time of applying the test and perhaps the contents of the test-tube may even be found to have retained their opalescent or milky state on being looked at on the following day. To this form of reaction, so widely differing in character from the ordinary effect of sugar, I will proceed to give attention with the view, on the one hand, of ascertaining its meaning and, on the other, of unravelling the conditions leading up to its production. It may be taken as obvious that some definite operative agency must exist and this ought to be susceptible of disclosure.

There are other reducing bodies besides sugar in the urine—uric acid and creatinine may be specially named; and the question has been raised by some as to whether the anomalous reaction under consideration may not be due to the mode of reduction effected by one or other of these. The authorities to whose communications I have referred express the opinion that creatinine, by virtue of its presence as such, constitutes the source of the modified result, Dr. MacLean (*loc. cit.*, p. 116) particularising and stating that, "with regard to its power of masking the presence of small amounts of sugar, it is probable that the cuprous hydrate or oxide is held in solution by kreatinin."

The subject before us may be said to be one that has received considerable attention, but at the same time it may be considered that it has not been as yet exhaustively dealt with. From the nature of its surroundings it stands on very fitting ground for subjection to chemical investigation, and I have found that invaluable aid is afforded by the microscope in helping to unravel the intricacies embodied in it. Let us see what is learnt by a joint appeal to these two modes of investigation. Some years ago I gave consideration to the matter and expressed the view I had been led to entertain upon it. I will not at this stage say anything about this view, but will defer speaking of it until after the evidence obtained from the further inquiry that has been conducted has been set forth, so that the information thus supplied may be brought into use in dealing with the elucidation of the problem.

I will, in the first place, show what is attainable with the employment simply of Fehling's solution and a solution of dextrose. The formula of Fehling's solution differs to some extent as given by different authorities. The liquid which I have been in the habit of employing from a very early period contains potash instead of soda, and the amount of alkali is somewhat larger than that given in other formulæ for the test. The modification has appeared to me to yield a more stable and reliable test and for this reason I have adhered to it from the beginning. For the observations, however, recounted in this communication I have throughout adopted, as most in harmony with what is generally employed, the formula given by Allen in his work on the "Chemistry of the Urine" (Churchill, 1895), p. 59.

Taking two cubic centimetres of Fehling's solution and boiling it, as is done in the ordinary mode of applying the test to urines, with an equal quantity of a 1 per cent. solution of dextrose, the effect observed is the production of a vermilion-red precipitate of cuprous oxide of a sufficiently dense nature to be not long in settling to the bottom of the tube. In the presence of a larger amount of dextrose—an amount that is more than sufficient for the reduction of the cupric oxide contained in the quantity of the test liquid employed—the colour soon changes to a dark brown or even a brownish black, a result (often noticeable in testing strongly saccharine urine) which is considered to be due to the action of the caustic alkali on the dextrose standing in excess.

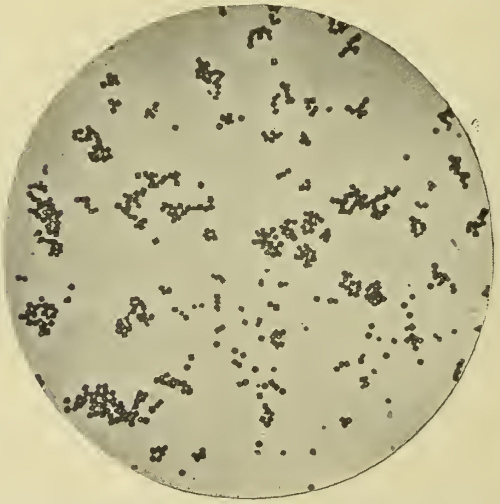
If now, instead of taking equal quantities of the two solutions, the dextrose be diminished by adding five drops only of its solution to the two cubic centimetres of Fehling's solution, the character of the precipitate produced on boiling is found to remain unaltered, but of course the amount of it is less. With one drop, even, a like result is observed, and indeed, however small the amount of sugar added, whatever precipitate is formed when the method of procedure under consideration is followed, shows itself on settling in the form of the deep red cuprous oxide. Whilst the precipitate is suspended in the liquid a sort of shot-silk appearance is produced from the admixture of red and blue, the precise character of the appearance varying according as the precipitate or the unchanged liquid preponderates, and likewise according to the position of the light by which it is viewed.

There is a point connected with the mode of applying heat to the test-tube that is worthy, I consider, of a passing comment. When the tube is heated in the usual manner from the bottom the normal coloured precipitate shows itself, whilst if heated by applying the flame to the top of the liquid and allowing the heat to travel down, the tube being held slantingly for the purpose, an ochry red precipitate is produced instead of the characteristic red otherwise obtained. The difference in the result produced by the two methods of heating is very striking and is found to apply to other instances where limited quantities of sugar are being dealt with.

I have spoken of the results noticeable after diminishing the sugar by a reduction of the amount of the solution employed, and it has to be said that no difference follows the diminution by the employment of more dilute solutions. The same character of precipitate is produced from the employment of a 1 per 1000 as from a 1 per cent. solution of dextrose. The same even is the case with a 1 per 10,000 solution, but here, on account of the smallness of the amount of precipitate, no effect is visible until after the test tube has stood for awhile for the particles of precipitate to settle to the bottom of the tube.

Examined by the microscope, the characteristic red precipitate I have referred to presents a certain typical appearance, no matter the precise manner in which it has been obtained. It is seen to consist of little nodular, more or less quadrilateral, masses which agglutinate or cohere together so as to form irregular-shaped collections. The cohering tendency of these nodules is a marked character belonging to them and the more they become grouped into compact masses the more is subsidence of the precipitate promoted. Fig. 1 gives a representation of the microscopic appearance of the precipitate under consideration and it may be remarked with regard to it that in the preparation of the slide a detachment of nodules occurs and renders the grouping less conspicuous.

FIG. 1.

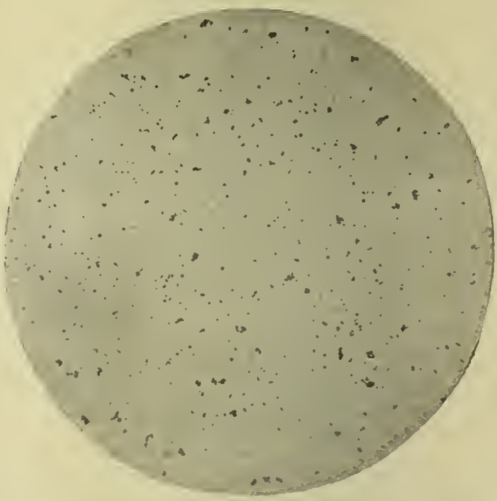


From photomicrograph of suboxide precipitate from two cubic centimetres of 3 per 1000 solution of dextrose and two cubic centimetres of Fehling's solution. Magnified 440 diameters.

If a reversal of the mode of procedure with a minimum quantity of sugar added to Fehling's solution be adopted and the 1 per cent. dextrose solution be placed in the tube and a minimum quantity of Fehling's solution be added an altogether different result is obtained. If, for instance, two cubic centimetres of a 1 per cent. solution of dextrose are placed in the tube and one drop of Fehling's solution added the effect on boiling is the production of a bright yellow precipitate which takes some hours thoroughly to settle out. If a relatively smaller quantity of Fehling's solution be used, as, for example, if four cubic centimetres of dextrose solution be treated with one drop of Fehling's solution, a paler yellow product presents itself with still less disposition to yield a settlement, and if eight cubic centimetres instead be the quantity taken a light canary-coloured liquid of a translucent nature is produced which even on the following day is found to contain suspended precipitate.

The microscopic appearance of the product yielded by the method of procedure just referred to differs in a very striking manner from that belonging to the previously described normal type of product. Taking the example of two cubic centimetres of sugar solution and one drop of Fehling's solution, instead of nodular masses being seen the precipitate presents the form of very fine particles exhibiting a tendency to link themselves into chains. Particles more appropriately define the condition seen than granules, and as the diminution of Fehling's solution in proportion to the dextrose solution is carried on further the particles become smaller and paler and finally cease to be within the reach of recognition by an ordinarily conducted microscopic examination; indeed, a sort of colloidal or emulsion-like condition is attained, both yellowness and translucency existing in much the same way as is sometimes observed with the reaction of urine containing a slight amount of sugar. Fig. 2 supplies a representation of the appearance presented.

FIG. 2.



From photomicrograph of suboxide precipitate from two cubic centimetres of 1 per cent. solution of dextrose and one drop of Fehling's solution. Magnified 440 diameters.

Increasing the strength of the dextrose solution has an effect that would hardly be likely to be predicted. With two cubic centimetres of a 25 per cent. solution of dextrose and one drop of Fehling's solution the precipitate produced on boiling is of a pale yellow, translucent, flocculent nature, presenting under the microscope the appearance of pellucid, spread-out plaques. With a 50 per cent. solution the result is attended with a greater appearance, both macroscopically and microscopically, of translucency.

It is thus seen that without bringing into the question the influence of any extraneous agency we can determine at will the production of modifications in the behaviour of sugar with Fehling's test resembling modifications that may be come across in the application of the test to urine containing a slightly abnormal amount of sugar. It is true the modification follows a method of applying the test different from that ordinarily adopted, but through the information obtainable by the aid of the microscope light is thrown upon the underlying condition existing which helps to give a clue to the solution of the problem before us.

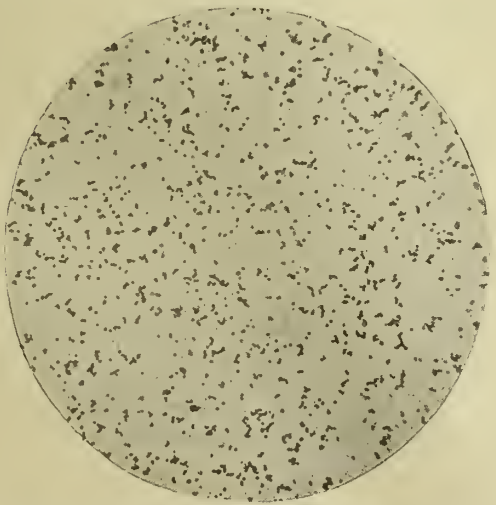
### MODIFYING INFLUENCE OF AMMONIA.

I will now deal with the modifying effect that is exerted on the action of the test when ammonia is present. The object in hand is to lead on to an explanation of the anomalous results that may happen to be observed in connexion with urine testing, and free ammonia is found to be developed as an attendant phenomenon of the proceeding.

It is well known that ammonia is a potent solvent of cuprous oxide. The solution constitutes a clear, colourless, watery liquid. Owing to the solvent power mentioned when reduction of the cupric oxide contained in the cupric test solution is effected in the presence of ammonia, the result is the loss of the blue colour derivable from the cupric oxide, and the production of a perfectly colourless, watery liquid. Reduction is in no way interfered with, but the reduced oxide fails to make itself visible. The action occurring is turned to account for quantitative sugar determination in the application of the ammoniated cupric liquid which bears my name. If the ammonia be driven off by means of heat the cuprous oxide previously held in solution becomes precipitated, but, as the forthcoming evidence will show, it falls in a state somewhat modified from that presented under precipitation in the ordinary way.

To illustrate the effect of the presence of ammonia a 3 per 1000 strength of dextrose solution is a convenient one for employment. It is requisite that there should not be sufficient sugar to stand in excess of the cupric oxide to be reduced in the test solution employed. Two cubic centimetres of the 3 per 1000 dextrose solution do not fully reduce the cupric oxide in two cubic centimetres of Fehling's solution and therefore a certain amount of the test liquid remains unchanged. The precipitate produced on boiling the proportions named of the two liquids by themselves consists, as may be inferred, of the normal red cuprous oxide. This is seen to be dispersed through the liquid and afterwards to settle as a compact red deposit in the ordinary way. Examined microscopically it is found to present the usual nodular condition with the nodules cohering into irregular-shaped masses. If to a corresponding admixture of test and dextrose solutions five drops of strong solution of ammonia (specific gravity 0·880) be added, considerable boiling is required before any notable reaction is seen to occur. The first effect noticeable is that the intensity of the blue becomes somewhat diminished as a consequence of the reduction without precipitation that takes place. Then, as the ammonia is driven off, the contents of the tube may become suddenly opaque and in the first instance of a dirty green colour, which quickly runs into dirty yellow and afterwards brownish with a certain amount of reddish tint. The precipitate to the naked eye presents a very different appearance from that of the precipitate belonging to the normal reaction, and microscopically it is seen to consist of conspicuously finer particles with seemingly a less strong cohesive tendency. A representation of the character of the precipitate is given in Fig. 3.

FIG. 3.



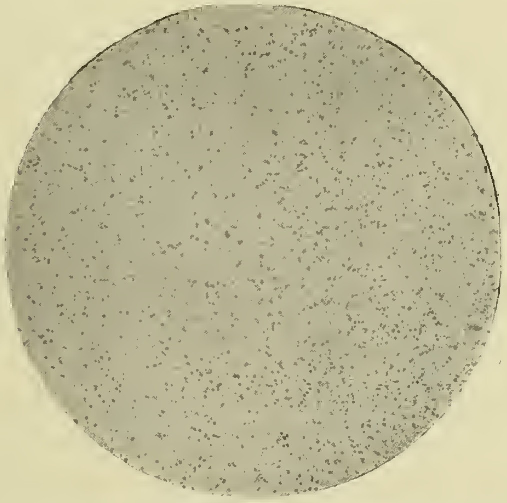
From photomicrograph of suboxide precipitate from two cubic centimetres of 3 per 1000 solution of dextrose, two cubic centimetres of Fehling's solution, and five drops of ammonia solution. Magnified 440 diameters.

Variations may be made in the strength of the sugar solution and the amount of ammonia with varying results as regards the colour of the product, and if enough sugar be present fully to reduce the cupric oxide of the test and enough ammonia to keep the suboxide formed in solution, the contents of the test-tube may be brought temporarily to a clear, colourless state, which with a further expulsion of ammonia suddenly changes and gives place to the presence of the suboxide in a precipitated form.

An instructive result is obtained by adding a little albumin to the admixture of Fehling's solution, sugar, and ammonia. Albumin has no reducing power in itself, and in small quantity (in large quantity it interferes with precipitation apparently through the extent of concurrent generation and evolution of ammonia occurring) exerts no influence on the character of the cuprous oxide precipitate produced. It is the normal red precipitate that falls in the presence of the albumin, just as happens without it, and microscopically the conditions in the two cases are practically alike. If, however, the ammonia and albumin are conjoined an effect is produced identical with what is noticed on applying the test to urine containing a slightly abnormal amount of sugar.

Taking two cubic centimetres of Fehling's solution, two cubic centimetres of a 1 per 1000 solution of dextrose, five drops of ammonia solution, and five drops of a 2 per cent. solution of dried egg albumin, and boiling in the usual way, the following is the result observed. Quite prolonged boiling is required before any change is perceived. Then the contents of the tube become milky and dark green, and, as boiling is carried on, the green passes into a lighter shade with a yellow tint. The condition agrees with what would be suggestive, if urine were being examined, of the presence of a slightly abnormal amount of sugar. By increasing the strength of the sugar solution to 2 per 1000 the reaction is of the same character, but more marked in degree. The microscopic appearance presented is totally different from that observed in ordinary circumstances and perfectly in accord with that belonging to urine exhibiting a similar kind of behaviour with Fehling's test. The field is studded over with exceedingly minute separated particles, so minute in the case of the 1 per 1000 strength of sugar solution as to require close attention to be given to see them. With a stronger solution they are more distinctly visible, but are still seen to be scattered in a more or less completely isolated state. The microscopic appearance fully accounts for the emulsion-like character belonging to the product. Fig. 4 gives a representation of the condition that has been described.

FIG. 4.



From photomicrograph of suboxide precipitate from two cubic centimetres of 2 per 1000 solution of dextrose, two cubic centimetres of Fehling's solution, five drops of ammonia solution, and five drops of a 2 per cent. solution of dried egg albumin. Magnified 440 diameters.

### INFLUENCE OF URIC ACID.

I will now pass to the consideration of the part played by the cupric oxide reducing agents that are present in the urine in addition to sugar. The only agents of sufficient significance to call for attention are uric acid and creatinine. Let us see in what position these agents stand in relation to the matter that is under consideration, first dealing with uric acid.

Observation shows that uric acid behaves in a corresponding way to sugar in its reducing action upon Fehling's solution. The precipitate that falls consists of the red cuprous oxide, which coincides in microscopic appearance with the analogous precipitate produced by pure solutions of sugar. Weak potash solution may be used to dissolve the uric acid and a 3 per 1000 strength of the acid is a convenient one to employ to show its behaviour; but it should be understood that the reaction produced is not a large one. If too much uric acid is present a white precipitate falls which interferes with the occurrence of reduction. The same effects follow in the case of uric acid as a result of the presence of ammonia, albumin, and albumin and ammonia conjoined, as was mentioned to occur in the case of sugar. Particularising for the last, two cubic centimetres of 3 per 1000 uric acid, two cubic centimetres of Fehling's solution, five drops of 2 per cent. albumin solution, and five drops of ammonia give, after the very prolonged boiling required to get rid of the ammonia, the milky-green and greenish-yellow reaction that is often met with in testing urine.

The cupric oxide reducing power of uric acid is considerably less, reckoning weight for weight, than that of sugar. It is easy of determination by means of the ammoniated cupric (Pavy's) test. I some time ago suggested the employment of this test for the quantitative estimation of uric acid in urine. The subject was brought forward in a communication to the Royal Medical and Chirurgical Society and the communication was published in Vol. LXIII. of the Society's Transactions. The process consists of taking the reducing power of the urine before and after treatment with lead acetate, which is a precipitant of uric acid. From the difference the uric acid is calculated and the several results of actual observations given, in which known quantities of uric acid were dealt with, show that the process is capable of yielding estimations of very close accuracy. It must be admitted, however, that it is only in the hands of those possessing considerable experience and expertness that reliability can be expected to be attainable.

The actual cupric oxide reducing power of uric acid in relation to that of dextrose is less to the extent that 18·6 parts of uric acid stand as the co-equal of 10 of dextrose. This is deducible from the fact that whilst 10 milligrammes of dextrose constitute the reducing equivalent of 20 cubic centimetres of the ammoniated cupric test, it requires 18·6 milligrammes of uric acid to bring about a corresponding reducing effect. Hence not far from double the amount of uric acid is needed to produce the reducing effect that is capable of being exerted by dextrose.

I may mention that I have recently tested the accuracy of the results upon which the above statement is based by subjecting a specimen of uric acid procured from Kahlbaum of Berlin to examination. The results yielded stood in close accord with those previously obtained.

With the data at our command the portion of the reducing power of a specimen of normal urine which is to be ascribed to uric acid can be expressed in terms which may be considered to fall within a close reach of accuracy. Although it may not be indicated by Fehling's solution, urine, nevertheless, has always a certain measurable amount of cupric oxide reducing power, which, it may be said, is considerably greater than it is generally thought to be. This reducing power is readily susceptible of recognition and quantitative estimation by the ammoniated cupric test and in my recent work on "Carbohydrate Metabolism and Diabetes" I have given the results of numerous determinations of its amount in the urines of various animals, including man. Figures are given representing the condition found in 12 specimens of normal urine from the human subject. The highest of these stands at 4·88 per 1000 expressed as dextrose, and the lowest at 0·91, the mean of the 12 being 2·79. It may be remarked in passing that the amount found is largely dependent upon the degree of concentration of the urine under examination.

Taking the above mean figures we have 2·79 per 1000 standing as the average representative of the cupric oxide reducing power expressed as dextrose of the specimens of urine in question. What portion of this is due to uric acid? Let us see how the calculation works out under the following mode of dealing with the matter. It is ordinarily reckoned that about one gramme constitutes the quantity of uric acid and about 1500 cubic centimetres the quantity of urine eliminated per diem. One gramme in 1500 cubic centimetres gives 0·66 gramme as the proportionate amount in 1000 cubic centimetres. Of the total reducing action, consisting of 2·79 per 1000 expressed as dextrose, a portion is due not to dextrose, but to the 0·66 per 1000 of uric acid that is present. It has been shown above that 18·6 parts of uric acid correspond in reducing power with 10 parts of dextrose. From this relation the 0·66 gramme of uric acid will have a reducing power expressed as dextrose of $\frac{0\cdot 66 \times 10}{18\cdot 6} = 0\cdot 35$, which brings the issue to 0·35 part of the reducing power out of the 2·79 being due to uric acid. Otherwise expressed, about one-eighth of the reducing action of normal urine upon the basis formulated is attributable to the uric acid present.

I have spoken of the cupric oxide reducing power possessed by uric acid and it is only this that brings uric acid into relation with the subject under consideration. It has no influence on the reaction producible by sugar.

### INFLUENCE OF CREATININE.

The action of creatinine in its reducing effect on Fehling's solution is not of the simple nature of the ordinary reducing bodies. It may be said at once that a complicated result is produced through its influence on the character of the precipitation and the generation and evolution of ammonia which, to a pronounced extent, takes place as an accompanying event. My observations have been conducted upon a specimen obtained from Merck of Darmstadt, a source which I think may be considered to justify confidence with respect to purity.

In the first place two cubic centimetres of a 0·5 per cent. creatinine solution (= ten milligrammes creatinine) were boiled and kept boiling, with careful agitation of the test tube to prevent ejection of its contents, with an equal quantity of Fehling's solution. The result was attended with the following succession of events. Ammonia in notable quantity began almost immediately to be evolved, as shown by litmus paper, corroborated by paper soaked in Nessler's mercuric iodide solution, introduced into the mouth of the test-tube, and was still being evolved when the boiling was stopped at the end of ten minutes. The blue colour first to some extent faded and then acquired a greenish tint, the liquid remaining bright and clear. Not till the boiling had been carried on for nine minutes was any turbidity perceptible, and then the contents of the tube became opaque and of a dirty green colour which afterwards passed into a yellowish green. After having stood for some time some yellow precipitate was seen to have settled out. A drop of the liquid examined microscopically at the end of the boiling displayed a field of very minute disconnected particles presenting a resemblance to the molecular base of chyle.

Increasing afterwards the creatinine by using a 2 per cent. strength of solution, the boiling failed to be attended with any show of reduced oxide. Ammonia was from the start very freely evolved. The blue soon changed to green, which faded and became replaced with a brownish tint that passed on to reddish-brown, ruby red, and deep brown, translucency all the time being maintained. After a quarter of an hour's boiling ammonia was still being evolved and nothing throughout was apparent that could be taken as representing a show of precipitation.

Creatinine, then, has an effect of a very different nature from that of an ordinary reducing body upon Fehling's solution, and the conclusion forces itself on the mind that ammonia is an important factor in connexion with what is noticed to occur. As long as sufficient ammonia is present to hold in solution the reduced oxide that is formed there can be no appearance of precipitate. With reduction fading of the blue colour of the test ensues and the conditions may be such as to determine a complete removal of colour, but no precipitate can fall as long as ammonia is being liberated to a sufficient extent to hold the generated suboxide in solution. Probably the motley series of colours observable after prolonged boiling, especially in the presence of a considerable quantity of creatinine, are due to extraneous decompositions that occur whilst the suboxide is being prevented from showing itself.

The cupric oxide reducing power of creatinine does not appear to amount to so much as what I find it has been credited to possess. There is no difficulty in making the estimation by means of the ammoniated cupric test. The solution titrates cleanly and the end-point is sufficiently sharp. Variations within certain limits are, however, noticeable in the readings, seemingly due to the rate at which the solution may be run in from the burette. If run in quickly time is apparently not given for the full breaking down of the creatinine and more is run in than might be needed if longer time were given. The results that have been obtained may be said to give to creatinine a reducing power equal to a fourth of that of dextrose—in other words, it requires 40 milligrammes of creatinine to produce the amount of reducing action that is effected by ten milligrammes of dextrose. Under this reckoning the reducing effect on Fehling's solution produced by the one to two grammes, or about this, of creatinine conjectured to be eliminated per diem would count for exceedingly little in relation to the total reducing action exerted by normal urine, instead of occupying a position of significance, as there is a disposition to be assumed it does by some observers.

Calculating in the same way as was done for uric acid, the apportionment of the reducing power of normal urine to be assigned to creatinine comes out as follows: if 1·5 grammes of creatinine and 1500 cubic centimetres of urine be taken as representing the elimination amounts for the 24 hours the relation of creatinine to urine will stand at 1 per 1000. 40 milligrammes of creatinine, as shown above, may be taken as having the same reducing power as 10 milligrammes of dextrose. The reducing power therefore to be reckoned for the one gramme of creatinine is equivalent to $\frac{1 \times 10}{40}$ = 0·25 per 1000 expressed as dextrose. The mean total reducing power for normal urine was found to be 2·79 per 1000 expressed as dextrose, and, from the data given, 0·25 per 1000 of this, or practically one-eleventh, constitutes the proportion to be assigned to creatinine.

*(To be continued.)*

# A CASE OF CEREBRO-SPINAL MENINGITIS DURING PREGNANCY.

By J. D. WILLIAMSON, M.D., M.CH., M.A.O. R.U.I.,
PHYSICIAN FOR DISEASES OF CHILDREN AND OBSTETRICS, ULSTER HOSPITAL FOR CHILDREN AND WOMEN, BELFAST.

THE following are a few notes of a case of cerebro-spinal meningitis during pregnancy. It is interesting from more than one point of view: the age and condition of the patient, the onset of labour (whilst declaring that she did not know what was the matter with her and denying she was pregnant); the sudden onset of cerebro-spinal meningitis during labour, its rapid course, leaving no time for any very active treatment of service; the look of the patient; the character of the petechial and herpetic eruptions, without head symptoms; and the persistent vomiting, which in this case, at the time being associated with labour, did not demand the same amount of attention that in other circumstances it would have received.

The patient was in a neighbouring town up to Christmas, 1896, when she came home to Belfast to a street in a working-class locality. She was aged 13 years and 9 months; her mother gave the age in evidence at the coroner's court as 14 years on May 23rd, 1907. She was admitted on March 5th, 1907, to the maternity department of the Ulster Hospital for Children and Women as being in labour. The patient had always been a strong, healthy girl, well developed, and had never menstruated. The history of the case as reported to me was that on March 25th, about 2 A.M., the patient was seized with violent pains in the lower part of the back and abdomen, accompanied with vomiting; the pains were not continuous but paroxysmal; she became so ill that a medical man was sent for about 4 A.M. He prescribed medicine and advised certain measures to give her some relief; later he (the medical man) returned accompanied by another medical man, and on consultation both agreed that the patient was in labour. This the patient denied, protesting against anything of the kind. On telling her mother what was the matter the latter expressed her astonishment at anything of the sort as she never thought such a thing possible owing to her age and appearance. The patient absolutely refused to give any information regarding her condition to anyone. At 12 noon the patient was admitted to the Ulster Hospital. There was then a temperature of 101° F. and the pulse was 100, full, and bounding. There were strong uterine contractions at intervals of about ten minutes. There was no vomiting. There was slight mucoid diarrhœa, the cheeks were slightly cyanosed, and there was herpes about the nostrils and the mouth. No rash at this time was present; the tongue was furred but moist, and the pupils reacted normally. She had a wild and frightened appearance, was quite conscious, and complained of no pain in the head.

On vaginal examination the passage was moist and dilatable, the os was very slightly dilated, the presentation being a vertex but very high up in the pelvis. The patient remained in much the same condition until 2 P.M., when the pains became almost continuous, breathing was very rapid and distressed, the cheeks and lips were more deeply cyanosed, and the pulse was rapid and irregular. I was at this stage summoned by telephone to see the patient who was reported as being in the maternity ward and in labour. Almost immediately I received a second message to say that the patient was in a state of collapse and to come at once. I replied to give a hypodermic injection of strychnine and I would go over immediately, which I did and found the patient in bed lying on her right side, the legs flexed on the thighs, and the thighs on the abdomen; the forearm was flexed on the arm and both the arms were lying on the front of the chest; she was conscious, the pupils were slightly dilated and equal in size, the face was cyanosed, the breathing was rapid and difficult, the pulse was quick and irregular, and she was to all appearance in labour. She was nervous and frightened looking but did everything she was asked to do.

I got her turned over on to the left side and made a vaginal examination with some difficulty; the passage had the feeling as if contracting on the finger; the rugæ of the vagina were well defined. With some difficulty I reached the os, which was slightly dilated, admitting the tip of my finger. I was able to make out the presentation a vertex. With the left hand on the abdomen I could feel the uterus hard and contracting; her attitude and appearance did not harmonise in my opinion with the stage of labour and I felt that there might be something the matter in her chest. On examining the chest I arrived at the opinion that there was well-marked congestion of both lungs, the heart was acting rapidly and irregularly, and I was unable to make out any valvular lesion. No urine could be procured by catheter. Neither the face nor the extremities were œdematous. I also noted that she was very sensitive to the touch (hyperæsthetic). I got her turned on the back in order to examine the abdomen to learn if the child were still alive. The breasts were well developed, secondary areolæ were well marked, and there was a knotted feeling, and on pressure fluid exuded through the nipples. On stethoscoping over the uterus the fœtal heart sounds were heard very indistinctly and I observed some dark spots of a peculiar shape and appearance over the lower part of the abdomen and the thighs, which on investigation I learned had developed since her admission to hospital. The spots were dark in colour, irregular in shape and size, some flat, others raised like a small blister, and on pressure the colour did not disappear. These with her look and condition suggested cerebro-spinal meningitis. She, however, very quickly got worse though still remaining perfectly conscious, complaining only of the uterine contractions and pain in the back. There was no pain in the head but great pain and difficulty in swallowing, together with heavy breathing, death supervening about 3.50 P.M.

The patient's condition was so serious when I first saw her that I felt no obstetrical interference would prove of any service or obviate a fatal result to either mother or child; rapid dilatation of the os and removal of the fœtus might have been attempted but had I endeavoured to do anything of the kind death would have followed even more quickly and question, could I have saved the child had it been alive? Removal of the fœtus by Cæsarean section might have been adopted but I doubt very much if the child could have been saved.

In conjunction with Dr. J. Martin I made a post-mortem examination that night in the public mortuary. The body was stout, well built, well developed like a woman of small stature, and well nourished. There were no marks of any kind on the body other than the dark spotted rash (as described) over the abdomen and the thighs. Rigidity was well marked. On opening the skull the membranes of the brain were congested and the blood-vessels were full; also there was a greater quantity of serous fluid than ordinary in the cavity of the cranium. The brain was otherwise natural in appearance; there was more serous fluid than normal in the ventricles, and the internal blood-vessels were congested. The spinal cord was not examined; as the evidence of cerebro-spinal meningitis was so manifest we thought it unnecessary. The pleura was congested and the pleural cavity contained more serous fluid than natural. The lungs were dark and markedly congested. With regard to the pericardium the cavity contained more serous fluid than normal. The heart was slightly enlarged and the valves were healthy. Ante-mortem clot was present. As to the abdomen, the peritoneum was congested and spotted all over with black spots of various sizes and different shapes. There was more serous fluid than normal in the pelvic cavity. The uterus extended up close to the xiphoid cartilage of the sternum and corresponded with a uterus at full term. The peritoneum over it was congested and contained dark spots. On opening the uterus a full-term male child was removed; it was a well-developed, healthy-looking infant; the skin was healthy and without any spots or marks of any kind. The placenta, membranes, and cord were normal in size and appearance. The mesenteric glands were congested, which has been shown lately in Germany to be important from a diagnostic point of view, a view confirmed by Professor W. St. C. Symmers of Belfast. The liver was enlarged and full of blood. The gall-bladder was full of bile and the coating of the bladder was covered with dark spots. The spleen was enlarged and full of blood. The kidneys and suprarenal capsules were congested. The pancreas was congested. The stomach contained a little food with some dark grumous matter which was evidently the medicine prescribed that morning. There were dark spots over the mucous surface, which was also congested. The small and large intestines were congested and almost empty; Peyer's patches were congested and the walls of the intestines were spotted. The bladder was empty and on opening it the mucous surface was covered over the whole surface with small dark spots. As this case occurred in the earlier stage of the epidemic I regret bacteriological examinations were not made.

# THE TREATMENT OF TRYPANOSOMIASIS.[1]

BY A. NIERENSTEIN, PH.D.,

OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

THE therapeutics of the present time for trypanosomiasis can be divided into the following.

*A. Arsenic compounds.*—1. Arsenious acid. 2. Fowler's solution.

*B. Colours.*—1. Colouring matters belonging to the diazo group, Ehrlich's trypanred and Mesnil's afrodol blue and afrodol violet. 2. Colouring matters belonging to the triphenyl-methan group, Ehrlich's malachite green and fuchsin.

*C. Atoxyl*, which being an organic compound of aniline and arsenious acid cannot be considered as merely "an arsenic compound," an expression recently used in the lay press.

The introduction of an acid radicle into an amido nucleus generally changes its basic character and of course, on the other hand, lessens the acidity. The combined effect of aniline and arsenic is therefore the resultant of these two factors: amido group and arsenious acid. We have been able to demonstrate experimentally that either the amount of aniline generally given in the form of atoxyl or the arsenious acid contained in that drug when administered alone will kill an animal within a few hours after the injection.

*D. Combined treatment.*—1. Combination of arsenious or acid atoxyl with colouring matters, as trypanred suggested by Thomas and Breinl, Laveran and Mesnil, and others. 2. Atoxyl and strychnine—van Campenhout. 3. Atoxyl and sublimate. The last-named treatment has recently been worked out in the Liverpool School of Tropical Medicine and the results obtained on rats are very promising.

We who have been working in the Liverpool School of Tropical Medicine found that in infected rats (Trypanosoma Brucei), one part of which were treated with atoxyl alone and the remainder with atoxyl followed by mercury, the first lot generally had relapses in from 16 to 25 days, while a great number of the animals treated with atoxyl and mercury are still alive, some after a period of nine months. These results are certainly encouraging. In our treatment we used, at the beginning, to give high doses of atoxyl in order to drive out the parasites entirely and it was found that if sufficient atoxyl were administered the parasites (Trypanosoma Brucei) would disappear in rats for from 16 to 25 days. A disappearance of the parasites for a similar period was also observed in guinea-pigs and rabbits. Mercury was then given and the treatment stopped. In the bigger animals this double treatment should be continued for some time.

With regard to sleeping sickness we would like to suggest as a routine treatment that one cubic centimetre of a 20 per cent. solution of atoxyl should be given daily for one week, followed by one cubic centimetre of a 1 per cent. solution of sublimate four times. This treatment should be repeated and continued for an extended period and, of course, may require occasional modification. It would perhaps be possible to give mercury in the form of pills. The theory of the action of mercury in this treatment has been discussed in a paper published in the Annals of Tropical Medicine and Parasitology of the Liverpool School of Tropical Medicine, Vol. I., No. 2.

It has been found that the toxic effect of atoxyl can be diminished by acetylating the atoxyl. Such an acetylated atoxyl is an antipyrine which contains arsenious acid. Acetylated atoxyl has been shown to be of use in mice by Ehrlich and in dogs by our experiments. We found, as a rule, that when atoxyl was given in a sufficient quantity to drive out the parasites (nagana) in dogs the host was also killed, but using acetylated atoxyl we have been more or less successful. An interesting fact, pointed out by Ehrlich, is that the parasites can get used to a drug and become resistant. It is therefore advisable to alternate various trypanocidal agents in the treatment as much as possible, that is, to give atoxyl, some other trypanosome-killing drug, and mercury; for example, atoxyl, fuchsin, or some other colouring matter by the mouth, and sublimate.

It has usually been recommended to give atoxyl in high doses at the beginning. Whether or not this is of benefit is a question, as the atoxyl apparently accumulates in the body and the toxic effect appears after a time. In laboratory experiments we have frequently noticed that even after the treatment had been stopped for a week toxic effects appeared and this could only be due to the fact that atoxyl had accumulated in the body and the arsenic had been slowly broken up. We would like to refer to one experiment; a rat was treated about nine months ago with atoxyl and is still showing toxic effects.

We think it necessary to point out that the administration of atoxyl should be given a very careful trial but that extremely high doses should be avoided as much as possible. The action of atoxyl seems to be very much on the nervous system, as neuritis is frequently caused by the administration of this drug. Blindness has also been observed after the use of atoxyl and the question therefore arises whether it would not be well to counteract somewhat the effect of atoxyl by making it less operative on the brain and nerves. This might be done by introducing radicles which are more fixed to the blood and less to the nervous system.

We think it necessary to draw attention to experiments which we have made in connexion with the reappearance of trypanosomes after treatment with atoxyl. We found that strains obtained from animals which had had relapses were sometimes much more virulent. Our nagana strain, used for work generally, killed a rat in from five to seven days. This strain was followed up, commencing on Jan. 14th, until May 5th by subinoculation from one rat to another; four drops of blood were always used. In none of these rats was any sudden increase of virulence noticed, but in experiments with the strain obtained from animals in which the trypanosomes had reappeared it was found that the experimental animal was killed in from three to five days. Out of 17 rats used for these experiments 11 showed a remarkable increase of virulence. Similar work done with Trypanosoma dimorphon showed the same increase of virulence. Our strain used to kill a rat in from 15 to 17 days and we found that in four out of six strains obtained through relapses after treatment by atoxyl the virulence obtained was from 11 to nine days. We have recently obtained through atoxyl a Trypanosoma dimorphon strain which kills a rat in seven days. Similar work with Trypanosoma Gambiense is now in progress.

It was our intention not to publish the results of this work until we had satisfied ourselves that Trypanosoma Gambiense behaves in a similar way, but since it is intended to commence atoxyl treatment on a large scale in Uganda we feel that a warning in this direction should be given.

These observations emphasise the necessity for careful selection of "fly free" sites for the separation camps and for some provision by which treated natives may be kept under observation for considerable periods.

---

[1] A paper read before the Society of Tropical Medicine and Hygiene on July 10th, 1907.

The atoxyl and mercury treatment lately used in our laboratories gives, when compared with atoxyl, fairly permanent results and if an atoxyl treatment should be undertaken in Uganda it would be advisable to start at once with this combined treatment, even if the reliability of this double treatment has so far not been fully established.

Summarising, we would like to suggest in the treatment of sleeping sickness: a fresh 20 per cent. solution of atoxyl, warmed up to 40°, to be administered in small doses to commence with and the doses to be gradually increased, not, if possible, passing the limit of one cubic centimetre of a 20 per cent. solution. The atoxyl to be followed as soon as possible by mercury in the form of sublimate and, in addition, some other trypanocide to be given; we would specially recommend fuchsin. We have lately tried a large number of colouring matters, both Ehrlich's and Mesnil and Nicolle's, and have come to the conclusion that fuchsin is the most promising. In addition to this, as was insisted upon by Thomas and Breinl, the general strength of the patient must be sustained in every way possible.

Liverpool.

# CEREBRAL HYPERÆMIA AS A FACTOR IN THE THERAPEUTIC ACTION OF LUMBAR PUNCTURE.

## (ILLUSTRATED BY A CASE OF TETANY.)

By FRANK C. EVE, M.D. CANTAB., M.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL INFIRMARY AND TO THE VICTORIA HOSPITAL FOR CHILDREN, HULL.

IT has commonly been assumed that any benefit which may result from lumbar puncture is due solely to relief of intracranial tension. And when (as usually happens) the tension is not measured at the time of puncture, this is the natural assumption. During the past few years I have always measured[1] the intracranial tension during a lumbar puncture, and have been led to the provisional conclusion that relief of tension should be given therapeutic credit only in cases where the hypertension is considerable; and that where the pressure is normal or slightly raised the benefit which sometimes results from lumbar puncture should be ascribed to other causes. These causes may well be manifold, but I would like to advocate the predominant claims of one factor which, so far as I know, has not received attention. And that factor is the marked passive *hyperæmia* of the cerebro-spinal vessels which must inevitably result from the removal of any considerable quantity of cerebro-spinal fluid. For, owing to the uncollapsible bony envelope of the central nervous system and to the inextensibility of its nervous and liquid contents, it follows that for every ounce of cerebro-spinal fluid removed an exactly equal quantity of blood will be added to the contents of the cerebro-spinal vessels. In other words, an equivalent hyperæmia will be produced. And if, as is frequently the case, an ounce or an ounce and a half of fluid is withdrawn, the consequent engorgement of the vessels must be very considerable. For if at the end of the puncture the pressure is zero, it means that the venous pressure has pushed out cerebro-spinal fluid until the veins are distended to their natural limits. To regard this hyperæmia in another light, it is reasonable to suppose that the addition by lumbar puncture of one and a half ounces of blood to that normally contained in the blood-vessels of the brain and cord might almost double their normal blood quantum, though I do not know the exact amount of this. The brunt of the engorgement produced by puncture would certainly fall on the thin cerebral veins. How far the hyperæmia would affect the venous twigs and capillaries, and hence diminish the resistance and increase the blood-flow, could scarcely be decided except by experiments.

### *Illustrative Case of Tetany treated by Lumbar Puncture.*

This case is recorded partly because it illustrates the above thesis that the therapeutic value of lumbar puncture is largely and sometimes solely due to the hyperæmia produced, and partly because I believe it to be a new treatment for a rebellious case of tetany which had resisted all other ordinary remedies.

The patient was a healthy boy, aged four years, who betrayed a neurotic constitution by nocturnal enuresis and by his capricious moods and his often anxious and fretful expression. The morbid excitability of his nerves was shown by the contraction of the circumoral muscles in response to mechanical stimulation of the seventh nerve by a penholder. The onset was acute and idiopathic a fortnight before admission, the mother noticing first a limp and then painful contractures of the hands and feet.

On admission walking was impossible owing to the contraction of the calf muscles, which drew up the heels two inches from the ground. The flexors of the forearms were also firmly contracted, producing flexion of the extended fingers and marked adduction of the thumbs. In other respects, including reflexes, appetite, and sleep, the child was healthy.

Treatment for 12 days consisted of tonics with open air (balcony) day and night. Then five days of aperients and vermifuges in response to a history of worms eight weeks previously. Next 11 days of energetic sedative treatment with chloral and bromide. The case had now a duration of six weeks with a month of hospital treatment without the slightest improvement, and there was the fear of the condition lapsing into chronicity. Encouraged by former success[2] in a few other refractory subacute cerebral conditions, I stopped all other treatment and tried the withdrawal of an ounce of cerebro-spinal fluid by lumbar puncture under chloroform. The pressure was normal (200 millimetres of water). Next day the child was more rigid, but from that time onwards improvement was rapid and complete. In three days the fingers could be voluntarily extended and in 12 days he could walk, but even after three weeks one heel would not quite touch the ground. The child was sent for a fortnight to the seaside and when finally inspected seven weeks after the puncture there was nothing to be made out except a scarcely noticeable tendency to adduction of the thumbs.

It will be noticed that in this case care was taken to eliminate the effects of bed and hospital environment. It will also be noted that ordinary remedies were ineffectual and that the contracture was in a stationary condition. The case convinced me therefore as strongly as any single therapeutic observation could, that the withdrawal of an ounce of cerebro-spinal fluid was responsible for the cure of this child. And since the pressure was normal, it seemed legitimate to conclude that it was the *hyperæmia* which had favourably affected the nutrition of the disordered nervous tissues in somewhat the same favourable manner as it has been shown by Bier[3] and others to act in more accessible regions of the body.

In view of the almost harmless nature of lumbar puncture under suitable conditions, it seems justifiable to try it in a variety of acute or subacute cerebral affections which have resisted other treatment or are tending to become chronic. But until its indications are better understood lumbar puncture could scarcely be advocated until other remedies had failed.

Hull.

# Medical Societies.

## THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

*Piroplasma Canis.—Exhibition of Specimens.—Life Cycle of the Parasite of Sleeping Sickness.—Parasitic Protozoa observed in Africa.—Treatment of Trypanosomiasis.*

A MEETING of this society was held on July 10th, Sir PATRICK MANSON, the President, being in the chair.

Dr. J. W. W. STEPHENS of the Liverpool School of Tropical Medicine showed specimens prepared by Captain

---

[1] With my cerebro-spinal manometer. See THE LANCET, April 22nd, 1905, p. 1607.

[2] Ibid.

[3] The hyperæmia of lumbar puncture would not be quite analogous to that of Bier's method, which in the case of the head would be produced by a ligature round the neck. Presumably this would produce engorgement of the cerebral veins when sufficient cerebro-spinal fluid had been gradually expelled, but it would be accompanied by increased cerebro-spinal pressure and a diminished blood flow owing to the embarrassment of the venous return.

S. R. Christophers, I.M.S., illustrating the Developmental Cycle of Piroplasma canis in the Tick: (1) the parasite enlarged in the gut of the tick and became a motile club-shaped body, which then left the gut and penetrated an ovum, becoming in the substance of this a "zygote"; (2) this zygote increased in size and broke up into "sporoblasts" which were found disseminated in the tissues of the larva; (3) these sporoblasts further divided and accumulated as "sporozoits" in the salivary glands of the nymph; and (4) also sporozoits accumulated in the salivary glands of the adult tick. Experiment showed that the adult took infection and the nymph and "daughter" adult gave infection and corresponding to this "sporozoits" were found in the salivary glands of the tick at both these stages. The cycle of development appeared thus to be a very simple and uncomplicated one. The next exhibit was one of the parasite, discovered by Darling in Panama, Histoplasma capsulata (1906). The parasite was an intracellular one resembling somewhat Leishman-Donovan bodies and existed in immense numbers in the lungs, the liver, and the spleen. The following new helminths were also exhibited: (1) a new Bothriocephalid in man from Tasmania or Syria; (2) a new Nematode in man from China; and (3) a new Echinorhynchus in man from British Honduras.

Dr. A. Breinl of the Runcorn Laboratory (Liverpool School of Tropical Medicine) demonstrated the Life Cycle of the Parasite of Sleeping Sickness. In rats with Trypanosoma Gambiense the disease ran a fluctuating course. While the parasites were increasing in the blood amitotic division of nuclei and longitudinal fission were observed, but no nuclear changes or marked dimorphism. When parasites were most numerous from 5 per cent. to 20 per cent. of trypanosomes were seen with a thick stainable band growing out from the micro-nucleus and extending towards, sometimes passing beyond, the nucleus. In some cases the band entered into direct contact with the nucleus, sometimes it passed round the side of the body; subsequently it disappeared. When the number of parasites was falling rapidly, trypanosomes were observed with a clear space round the nucleus in the lungs, the spleen, and the bone marrow. In the bone marrow and spleen there were also forms in which the trypanosome body had disintegrated with flagellum and remains of micro-nucleus detached. The nucleus was intact. These forms underwent further change. The nucleus of each parasite budded off a small micro-nuclear granule, from which a new flagellum grew out. The life cycle began again with these small trypanosomes. The micro-nucleus originated from the macro-nucleus. In subsequent division the process was analogous to separation of two kinds of nuclei destined to conjugate. There was a pair of such nuclei in each trypanosome, which united when the number of parasites was at a maximum. In rats infected with Trypanosoma Gambiense and treated with atoxyl some parasites became rounded, formed a distinct membrane, threw off the flagellum, and remained unchanged for a prolonged period. The method employed was that whereby blood films or "organ-smears" were fixed wet; they were then stained and mounted in the usual way. The specimens were fixed in Flemming's fluid.

Dr. A. Nierenstein, also of the Runcorn Laboratory of the Liverpool School of Tropical Medicine, read a paper on the Treatment of Trypanosomiasis, which is printed at p. 228 of our present issue.

Dr. J. L. Todd, of the same laboratory, described certain Parasitic Protozoa observed in Africa, dealing more especially with Leucocytozoon Ziemanni and with an interesting cycle of development of Trypanosoma loricatum of frogs.

The President observed that atoxyl now gave them some hope of encouragement in the treatment of trypanosomiasis. Arsenic undoubtedly had the power of deferring and postponing the fatal ending and it was reasonable to suppose that the chance of recovery was thereby increased. His plan was to give small doses of atoxyl and gradually to increase them, not going beyond 50 to 60 minims of a 10 per cent. solution. He considered that the suggestion to combine the atoxyl treatment with mercury was sound.

---

Royal Waterloo Hospital for Children and Women.—An Art and Loan Exhibition will take place at the Doré Gallery, New Bond-street, London, W., from Nov. 1st to 21st next in aid of the funds of the Royal Waterloo Hospital for Children and Women.

---

# Reviews and Notices of Books.

*Ulceration of the Cornea.* By Angus MacNab, B.A., B.Sc. N.Z., M.B., Ch.B. Edin., F.R.C.S. Eng., Chief Clinical Assistant, Royal London Ophthalmic Hospital. London: Baillière, Tindall, and Cox. 1907. Pp. 196. Price 5*s.* net.

An attempt has been made in this book to classify ulcers of the cornea upon a bacteriological basis. Doubtless this is a step in the right direction, though in the present state of knowledge the result is somewhat disappointing. Indeed, it is probable that it can never be wholly satisfactory, for though in many cases the infecting organism may determine the type of ulcer there are often other factors which play a preponderant rôle, notably the conditions of resistance of the tissues, profoundly modified as these are by general asthenia, endogenous toxins, "trophic" nervous influence, and so on. The aim of classification should therefore be rather towards a broad pathogenic basis than the narrower bacteriogenic.

Mr. MacNab has clearly devoted much attention to the bacteriology of corneal ulceration and this part of the work is by far the best and merits commendation. It is pervaded with the teaching of Axenfeld, the *doyen* of ophthalmic bacteriology, to whom the author dedicates the book, and owes much to the recent researches of German investigators, among whom Zur Nedden and Römer may be specially mentioned. An excellent chapter is devoted to the ulcus serpens, or, as the author prefers to call it, the pneumococcal ulcer. The clinical features, pathological anatomy, bacteriology, and treatment of ordinary hypopyon ulcer are very lucidly described and stress is rightly laid upon the importance of radical treatment of the lacrymal complications which are so often present in these cases and play so fundamental a part in their causation. Atypical hypopyon keratitis next receives attention and this chapter contains many facts relating to the bacteriology of the subject which will probably be new to many English readers. Streptococcus pyogenes, bacillus pyocyaneus, Friedländer's pneumobacillus, and aspergillus fumigatus are accepted as causal agents, whilst the association of bacterium coli commune, staphylococcus pyogenes, rosa hefa, hay bacillus, and others is more likely to be fortuitous. Bacillary ulceration includes diplobacillary infection with the organism first simultaneously described by Morax and Axenfeld, and marginal ulceration by Zur Nedden's bacillus which nearly resembles Friedländer's pneumobacillus. Mr. MacNab differs from previous observers in attributing ulceration of the cornea much more frequently to the bacillus duplex. When the frequency of diplobacillary conjunctivitis is taken into consideration it is by no means surprising that the organism should be often found on so-called "catarrhal" ulcers, but this is very feeble proof of an etiological relationship, though it seems to be the only one which the author brings forward.

Ulceration of the cornea occurring in acute conjunctivitis receives rather scanty discussion, particularly noticeable in gonorrhœal conjunctivitis which is quite inadequately treated. Even more pronounced is the falling off in the description of cornea conditions in which bacteriogenesis is obscure or out of court. These sections of the book seem to have been included merely for the sake of completeness, and as to the section on neuroparalytic keratitis few neurologists would accept the view propounded of the origin and distribution of the "trophic" nerves.

It is obvious that so large a subject as ulceration of the cornea cannot be exhaustively discussed in a brochure of 187 pages of text. Some parts are very elementary; others presuppose an advanced knowledge of the subject, as, for example, in the references to so-called ring abscess. It is worth perusal by ophthalmologists as introducing them to the more recent work, chiefly in Germany, on the bacteriology of corneal ulceration, and this is probably the chief service which it may be expected to render. The printing, otherwise good, is marred by several misprints and some errors in spelling.

---

*Modern Methods of Diagnosis in Urinary Surgery.* By EDWARD DEANESLY, M.D., B Sc. Lond., F.R.C.S. Eng., Honorary Surgeon, Wolverhampton and Staffordshire General Hospital. London: H. K. Lewis. 1907. Pp. 97. Price 3*s.* net.

THE want of a brief and concise *résumé* of the modern methods of localising and distinguishing surgical diseases of the urinary organs has long been felt. This gap in scientific literature has now been adequately filled by Dr. Deanesly's little book. The work is based on a large clinical experience and is intended rather for the general surgeon than for the urinary specialist. The first chapter on the interpretation of urinary symptoms contains much information that is extremely useful. The author classifies these symptoms under the following headings: (1) disorders of micturition; (2) pain referred to some part of the urinary tract; (3) abnormal conditions of the urine; and (4) palpable enlargements or malformations of affected organs; and subsequently he clearly points out the significance of each and indicates the deductions to be drawn in arriving at an accurate diagnosis. The discussion of abnormal conditions of the urine is rightly relegated to a separate chapter which concludes with a description of the methods employed in gauging the functional value of the kidneys. Dr. Deanesly emphasises the importance of separation of the urines and for this purpose advocates the use of Luys's segregator which, he maintains, is quite as accurate as the ureteral catheter and above all free from the danger of infecting the kidneys. The chapter on the differential collection of specimens of urine is a very valuable one and full of practical hints. As might be expected in a work of this nature the cystoscope receives its full share of attention. The author favours Nitze's instrument and after describing its general principles gives detailed instructions for its use. This little book, besides being well written, is essentially practical and should prove a welcome addition to the library of the practitioner and general surgeon.

---

*Functional Nervous Disorders in Childhood.* By LEONARD G. GUTHRIE, M.A., M.D. Oxon., F.R C.P. Lond. (Oxford Medical Manuals.) London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 300. Price 7*s.* 6*d.*

JUST as the last quarter of the nineteenth century was marked by a remarkable advance in our understanding of the diseases of infancy and childhood, so now in the first decade of the twentieth century medical interest—and not only medical interest—centres in the physiological aspects of the developing child. These aspects are certainly rendered all the more intelligible by the light which pathology throws upon them. In his work on "The Functional Nervous Disorders of Childhood" Dr. Leonard Guthrie elucidates many of the perplexing problems involved in the study of the normal child by devoting considerable attention to that large class of borderland cases which are generally described as neurotic and which, strictly speaking, cannot be called either physiological or pathological. The management of these cases is of equal interest to the physician, to the psychologist, and to the pedagogue, and it is difficult to say to whose jurisdiction they should be most properly referred. It is a mere truism to say that the neurotic child is the subject *par excellence* of functional nervous disorders, but the neurotic child is the most interesting of all children for the reason that from him most is to be expected and from him most to be feared. Owing to the nervous instability which is characteristic of the class the most trivial physical stimuli produce the most disproportionate effects; this makes such children difficult to manage, physically and mentally. No one, as Dr. Guthrie remarks, would deny that a certain leaven of the neurotic element is "the spice of life"; the creative faculty in art, science, and literature depends on imagination and upon emotional susceptibility, but the neurotic temperament which combines these qualities requires the most judicious and sympathetic handling during the period of early development. As Dr. Guthrie tells us, "The lives of men and women such as Wagner, Berlioz, Charles Lamb, Charles Dickens, Carlyle, George Eliot, and many others were embittered and their genius trammelled by cerebral and gastric neurasthenia," and this through "want of sympathetic and judicious treatment in their youth." How many "undiscovered millions" remain in obscurity to-day from the same cause? Parents, the author tells us, are now fully alive to the influence of mind upon disease, and they desire to know how hereditary tendencies to moral failings as well as to disease may be counteracted. "Hence," he continues, "our professional armamentarium is no longer completed by a set of infallible prescriptions for coughs, worms, stomach-ache, and fits. ...... We are expected to use our knowledge of the characteristics of such children and to back our medical advice with common sense in treating them." For any child or any individual to be a success he must remain in harmony with his environment, but it is difficult for the neurotic child to remain at peace with his surroundings, for he is so susceptible to every change that occurs in them; if he fails to remain in harmony, it may be either the fault of the environment or the fault of his organisation, and if it be the latter the further question has to be considered, Is this due to hereditary and unpreventable causes, or to conditions over which the human will has control?

In dealing in various ways with these questions the author is faced *ab initio* with the problems of heredity. If acquired characteristics of the mind or of the body cannot be transmitted in descent, the progress of human evolution can only be advanced by means which are directly or indirectly dependent on selection, whereas a prospect of unbounded optimism at once opens up if we can convince ourselves of the truth of the alternative hypothesis. It is a very curious fact that Virchow should have admitted the possibility of the transmission of acquired pathological characteristics, while he denied the same right to those which were physiological. The truth or the falseness of the general postulate (whether acquired characteristics can be inherited or not) is, as Herbert Spencer contended, of the utmost importance to mankind, for according to the manner in which we regard this question so are determined our actions in politics, ethics, sociology, and, we may add, in medicine. Dr. Guthrie wisely touches but lightly on this controversial question: he confines himself more profitably to the other aspect of the question—namely, how to find the best possible environment for the child, and especially the neurotic child, be his hereditary or congenital faults what they may.

It is impossible in the limits of a short review to follow the author in his discussion of the many aspects of the management and recognition of the functional neuroses and psychoses of childhood. In the early chapters he moralises on the unnecessary sorrows of childhood, the fears of the neurotic child, his frettings and home sicknesses. He describes the disorders of sleep, their causes and treatment; then he points out the moral failings of a child with "a temperament" and blames the pedagogue or parent who submits him to mental overstrain or galling discipline. The more definite medical aspects are dealt with in the concluding chapters in which the disorders of the sympathetic nervous system come first and present a goodly array of symptoms. Then enuresis, cyclical albuminuria, pyrexia, and vomiting are described; then come the spasmodic affections, chorea, the tics, stammering, and other defects of speech. The disturbances of primary dentition are also considered at some length, but on the whole we think that this is one of the least satisfactory and convincing chapters. In the warmth of his argument in favour of the view that the symptoms incidental to the period of teething are not due to the physiological act of dentition but to some concomitant condition, the author takes a less philosophic and broad-minded view than in his handling of other subjects. May it not be that in the narrow jaw of the civilised child the physiological process of dentition becomes relatively pathological, just as in the case of the civilised woman the narrow and often rachitic pelvis makes the physiological act of parturition a distinctly painful operation? Moreover, we feel much inclined to challenge the statement that irritation of the dental branches of the fifth nerve can produce otalgia but not suppurative otitis media. Minor defects of this kind, if indeed they be defects at all, do not detract from the high standard of general excellence maintained throughout the work. All the chapters afford pleasant reading and most of them take the form of lectures which have been delivered before various societies but heretofore have not been published. The book has distinct literary merits apart from merits of a purely medical description; it is the work of a scholar and is full of fascination and suggestiveness, and moreover contains much cut and dried information. We commend it to the notice of all our medical brethren.

---

## LIBRARY TABLE.

*Surgical Diagnosis: A Manual for Students and Practitioners.* By ALBERT A. BERG, M.D., Adjunct Attending Surgeon to the Mount Sinai Hospital, New York. Illustrated with 215 engravings and 21 plates. London: Henry Kimpton. 1906. Pp. 543. Price 16*s.* net.—It is true that diagnosis cannot be taught by books; in the wards and in the out-patient rooms the student must learn this most difficult part of surgery. The advances of the last 40 or 50 years have greatly enlarged the surgical field and new methods of diagnosis have sprung up. We have therefore more to diagnose than had our predecessors, but we have also more means of diagnosis, and books can give very definite assistance in utilising to the full these diagnostic aids. This book is as good as any that we have seen and it should prove useful if used in the right way. If used apart from a case it will not be of much value, but if the student employs it in connexion with actual cases it will do much to increase his powers of diagnosis. There are a few errors which should be put right in a second edition; for instance, on page 151 the title of an illustration is given as "parenchymatous stroma"; of course, this should be "struma," but in English struma is never used for a goitre and the text never mentions the word, so that we imagine that a reader might easily be confused.

*Traveller's Practical Manual of Conversation in Four Languages: English, French, German, and Italian.* London: E. Marlborough and Co. 1907. Pp. 144. Price 2*s.* 6*d.* net. —This will be a most useful little book for travellers on the continent to possess. In appearance it is just like a thin wallet or pocket diary and this inconspicuousness will be appreciated by many of those to whom frequent reference to such a book in public places is absolutely necessary. The book consists of Travel Notes, Conversations arranged in alphabetical sections commencing with "Apartments," "Arrival," "Bathing," "Breakfast," and so on, a section of numerals, and, lastly, a dictionary of useful words. We have noticed but few mistakes and those are accidental misprints. It may be as well to mention them so that they may be afterwards corrected. On p. 85 "gebleiben for "geblieben." On p. 86 "aupara-paravant" instead of "auparavant." On p. 111 "Gehion" for "Gehirn." On p. 116 "lirraison" and "dittribution" for "livraison" and "distribution." Although we certainly learnt at school that "jus" was French for gravy we apparently must ask on the continent for "sauce," although that word also is given as the equivalent of the English word "sauce." The book reminds us, and usefully so at this time of the year, that "J'aimerais piquer une tête dans la rivière" does not mean, as it appears to, "I should like to prick a head in the river," but means "I should enjoy a dip in the river." By the way, *apropos* of sauce and dipping, we think the French also have another funny way of saying "Take a dip" (no doubt it is rightly excluded from the book) by "J'aimerais me saucer," literally "I should like to sauce myself," although "saucer" is equivalent to the English souse or souce. The little book is certainly worth possessing.

*Text-book of Anatomy for Nurses.* By ELIZABETH R. BUNDY, M.D., late Adjunct Professor of Anatomy and Demonstrator of Anatomy in the Woman's Medical College of Pennsylvania. With glossary and 191 illustrations. London: J. and A. Churchill. 1906. Pp. 252. Price 7*s.* 6*d.* net.—This book is written for the express purpose of giving the nurse who is working in the wards of a hospital a general idea of the anatomy of the human body. In preparing a work of this nature the difficulties which beset the writer are at once manifest. On the one hand, she must avoid the danger of bewildering her readers by setting forth a plethora of facts which can only be grasped by practical work in the dissecting-room, and, on the other hand, she must not treat the subject in too sketchy a manner. Dr. Elizabeth Bundy has struck the happy mean both in overcoming the inevitable difficulties of selection and in presenting the anatomical facts in a simple and intelligible manner. Generally the Basle nomenclature is adopted but in many instances the old names are bracketed with their successors. In arranging the contents the old plan of systematic anatomy is followed but the usual order of subjects is not strictly observed. For example, the description of the blood-vessels is deferred until the student shall have become familiar with the organs from which many of the vessels derive their names. The chapter on each system is prefaced by a short account of the histological anatomy of the structures described and, in addition, brief clinical and surgical notes, such as are suitable for nurses, are incorporated. This is a most important feature and we should like to have seen it developed to a greater extent. A recapitulatory chapter on important regions and structures, such as the triangles of the neck, the inguinal canal, the abdominal and thoracic viscera, and so on, brings the work to a successful conclusion. The illustrations, many of which are borrowed from "Morris's Anatomy," are very numerous and are well executed. The book should meet with a hearty welcome from all nurses, for without a proper knowledge of the human body many of their important duties become mechanical deeds instead of intelligent actions.

*Atlas and Text-book of Dentistry, including Diseases of the Mouth.* By GUSTAV PREISWERK, M.D., Ph.D., of the University of Basle. Authorised translation from the German. Edited by GEORGE W. WARREN, A.M., D.D.S. With 103 coloured figures on 44 plates and 152 text illustrations. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 343. Price 15*s.* net.—The German edition of this handbook was noticed in THE LANCET of Jan. 30th, 1904. The translator, Mr. G. W. Warren, has carried out his task in a commendable manner and has so placed this useful work within the reach of English readers. The feature of the book is undoubtedly the excellent lithographic plates, especially those illustrating the various diseases of the pulp and of the periodontal membrane. We still think that if the accounts of the various diseases were extended the value of the book would be considerably enhanced.

*Health, Work, and Recreation.* By G. A. HAWKINS-AMBLER, F.R.C.S. Edin. Liverpool: D. Marples and Co. 1907. Pp. 64. Price 6*d.* net.—The author of this little pamphlet has had previous experience in writing for a non-medical circle of readers. He writes easily and breezily, although some may think that his delight in a smart phrase occasionally leads him to transgress the limits of good taste. Mr. Hawkins-Ambler takes for his motto "In medio tutissimus," for he vigorously denounces the cranks who are ranged on both sides of the great hygiene controversies of the day. His most revolutionary doctrine is an attack on the "fetich of the cold bath" for everyone in all seasons. We agree with him that in winter all those who fail to "react" thoroughly to this time-honoured method of ablution are wise to replace it by a short stay in a hot bath, which they may follow by a cold or tepid sponge down. Mr. Hawkins-Ambler advocates nine hours' sleep for the average busy brain-worker. Quite the best advice in his book is contained in his last chapter on recreation, especially in that part which urges on the heads of families their great responsibility in maintaining a cheerful comradeship in the home circle; it is a theme that might well be enlarged upon with great advantage to both fathers and sons. The book is unfortunately carelessly constructed; thus we read in one chapter that the noise of the tramcars keeps the town dweller wakeful and in the next that it hushes him to sleep. The author perhaps deserves sympathy in the marring of a pretty peroration by the misprinting of "Prosperino" for "Proserpina" and "moon" for "noon." On page 61 he writes: "Times of fasting and seclusion were aforetime prescribed by the Church." They are still so prescribed.

---

## JOURNALS AND MAGAZINES.

*The Dublin Journal of Medical Science.*—The July number of this journal contains an interesting communication from Dr. A. Francis Dixon, in which he offers an ingenious explanation of the necessity for the crossing of the great motor tracts in the central nervous system; he attributes the idea to a conversation once held with Professor G. D. Thane. The theory is founded on the fact that the right half of each retina is connected with the right occipital lobe which is accordingly concerned with the left half of the field of vision; it is reasonable that in animals with binocular vision the side of the body in relationship with the left field—i.e., the left arm and leg, and so on—should be connected with the right cortex which also governs that field of vision. This visual theory is supported by a few observations in comparative anatomy. It is illustrated by a useful plan. The same number contains a careful study of Splenic Enlargement and its Influence on the Blood, by Dr. T. Louis de Courcy, which formed the thesis for his doctorate at the University of Dublin.

*The British Journal of Tuberculosis.*—The third number of this journal is especially devoted to children and treats largely of the sociological side of the great problem of tuberculosis. There are special articles on the Preservation of Children and Adults from Tuberculosis in America, by Dr. S. A. Knopf of New York; Measures Employed in Germany for the Prevention and Treatment of Tuberculosis in Children, by Dr. Adolf Baginsky of Berlin; and on the Protection of Children from the Disease in Scotland and Ireland, by Dr. H. Hyslop Thomson and Sir John Byers respectively. A discussion by many authorities on Tuberculosis and the Child brings forward some important points and the number concludes by noticing several institutions for the treatment of the disease.

# Reports and Analytical Records

FROM

# THE LANCET LABORATORY.

---

### TIODINE (COGNET).

(ROBERTS AND CO., 76, NEW BOND-STREET, LONDON, W.)

TIODINE is being introduced as an organic iodine compound suitable for administering iodine by injection. It contains very nearly half its weight of iodine. Tiodine is a colourless liquid with a somewhat alliaceous odour. As will be seen from its formula, which is $C_6SN_2H_{13}I$, sulphur is present and its chemical name is thiosinaminethyliodide. Tiodine is soluble in water, is neutral in reaction, and yields abundance of iodine on adding to it an oxidising substance, such as peroxide of hydrogen. It is supplied in pills or in glass bulbs. It is said to be administered without the symptoms known as iodism appearing, even when injected subcutaneously. It has been employed in the treatment of rheumatism, scrofula, and diseases of the respiratory organs.

### DIAMALT PREPARATIONS.

(THE BRITISH DIAMALT CO., 11-13, SOUTHWARK-STREET, LONDON, S.E.)

Two preparations, the one in liquid and the other in dry form, have been submitted to analysis with the following results:—DiaMalt liquid: moisture, 23·75 per cent.; mineral matter, 0·75 per cent.; malt sugar, 59·48 per cent.; protein, 5·88 per cent.; and dextrin, 10·14 per cent. In regard to diastasic activity, this preparation was found to digest five times its weight of starch in half an hour, 20 times its weight in one hour, and over 40 times its weight in three hours. The dry DiaMalt gave the following results: moisture, 1·00 per cent.; mineral matter, 1·90 per cent.; malt sugar, 83·20 per cent.; protein, 5·20 per cent.; and dextrin, 8·70 per cent. This preparation also was found to contain active diastase. In half an hour it digested its own weight of starch, in one hour two and a half times its weight of starch, and in three hours five times its weight of starch. The dry preparation consists of a crisp crystalline powder practically entirely soluble in water. The taste is pleasantly malty. The nourishing quality and digestibility of malt sugar are well known, and this carbohydrate is supplemented in these preparations by proteins and dextrin. The mineral matter consisted chiefly of soluble phosphate. The preparations are evidently obtained with great care from superior maltings, as is evidenced by the excellent flavour of the preparations and by the fact of their containing active diastase.

### STERILISED MILK (DIAMOND REEF BRAND).

(STONE AND SON, MONUMENT BUILDINGS, LONDON, E.C.)

The analysis of this milk showed it to be of the same rich quality as that derived from the Guernsey cow. The results were as follows: fat, 5·05 per cent.; milk sugar, 4·80 per cent.; protein, 3·65 per cent.; and mineral matter, 0·72 per cent. The proportion of fat is very satisfactory, the solid matters altogether amounting to 14·12 per cent., which is quite 2 per cent. over the average. It is stated that the milk is sterilised by a special process. The process must be good, since the flavour characteristic of raw milk has not been spoiled. The milk was perfectly fresh and sweet and free from antiseptics.

### EXTRA STOUT.

(WILLIAM DULLEY AND SONS, LTD., BREWERY, WELLINGBOROUGH.)

According to our analysis this stout represents a highly nourishing malt liquor. It contains no less than 9·67 per cent. of extractives, 6·61 per cent. of which are due to proteins. The alcoholic strength was 5·87 per cent. by weight, or 7·32 per cent. by volume. The mineral salts amounted to 0·25 per cent. and consisted chiefly of phosphates extracted from malt. The flavour was soft and strongly malty. This stout is known as "extra," which means that it is brewed from a strong wort, the proportion of malt used being greater than is usually the case. The stout was in good condition and free from acid flavour and an objectionable excess of carbonic acid gas.

### (1) TABLOID BRAND COMPRESSED STERILISED DRESSINGS; AND (2) TABLOID SLIPPERY ELM WITH AND WITHOUT CARBOLIC ACID.

(BURROUGHS, WELLCOME AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

1. We have already referred to the tabloid compressed ordinary dressings which are now issued after having been sterilised and thus afford the busy practitioner a ready aseptic dressing. They occupy very little space and are extremely compact. Amongst those recently received were: compressed absorbent gauze, double cyanide gauze, pleated compressed boric lint, pleated compressed triangular bandages, pleated compressed absorbent cotton-wool, and an open wove pleated compressed bandage. 2. The tabloid slippery elm represents five grains of the mucilage of slippery elm which is employed for its demulcent properties in the treatment of inflammatory affections of the respiratory, intestinal, and urinary tracts. Combined with phenol it may be used in throat affections and internally in diarrhœa and dysentery.

### SOUTH AFRICAN WINES.

(J. SEDGWICK AND CO., CAPE TOWN. AGENTS, JEREMIAH LYON AND CO., 4, LOMBARD-COURT, LONDON, E.C.)

Year by year the quality of the wines produced in South Africa improves. As a rule they have shown in the past a somewhat high alcoholic strength and a relatively large proportion of sugar. The specimens recently sent to us by the above firm are, on the contrary, delicate in character, approaching in this respect the light wines produced in Western Europe. The red wine, for example, called Cabinet de Sauvignon, gave the following results on analysis: alcohol, by weight 10·85 per cent., by volume 13·43 per cent.; extractives, 1·57 per cent.; mineral matter, 0·21 per cent.; volatile acidity reckoned as acetic acid, 0·12 per cent.; fixed acidity reckoned as tartaric acid, 0·55 per cent.; and sugar, 0·80 per cent. Though not quite as delicate as a good claret this wine has a very acceptable flavour. It is clean and non-acid to the palate. It is somewhat "full-bodied" and is of the Burgundy type of red wine. The red Hermitage wine is decidedly light in character and the flavour recalls that of a good wine from the Medoc district. Analysis gave the following results: alcohol, by weight 9·71 per cent., by volume 12·05 per cent.; extractives, 1·30 per cent.; mineral matter, 0·25 per cent.; volatile acidity reckoned as acetic acid, 0·126 per cent.; fixed acidity reckoned as tartaric acid, 0·54 per cent.; and sugar, 0·78 per cent. This is a pure, sound, and pleasing type of red wine. Lastly, we examined a white wine known as Drachenstein which is a quite dry white wine of the Rheinwein type. It is, however, somewhat fuller in character than a light moselle or hock. Analysis gave the following results: alcohol, by weight 10·08 per cent., by volume 12·49 per cent.; extractives, 1·52 per cent.; mineral matter, 0·20 per cent.; volatile acidity reckoned as acetic acid, 0·09 per cent.; fixed acidity reckoned as tartaric acid, 0·607 per cent.; and sugar, 0·190 per cent. As will be seen, the wine is relatively free from sugar and is practically free also from volatile acidity. The figures are exactly what might be expected judging the merits of the wine from the point of view of flavour.

### GERM PROOF FILTER.

(THE ATKINS FILTER ENGINEERING AND WATER SOFTENING CO., LIMITED, 71, SOUTHWARK BRIDGE-ROAD, LONDON, S.E.)

This filter consists of a container in which three filter tubes of the Pasteur-Chamberland type are fixed. The filtering material is well known to be proof against the passage of organisms, the only drawback being the slow rate at which the water filters through. Extreme filtering efficiency can, however, only be secured by the very slow passage of the filtrate. We found that the rate of flow was about five fluid ounces in half an hour, 13 fluid ounces in one hour, 19 fluid ounces in two hours, and about 10 pints in 20 hours.

### NOVIO TOILET PAPER.

(THE PAPER CUTTING AND TOILET REQUISITE CO., LIMITED, CHADWICK WORKS, 26, GROVE-PARK, CAMBERWELL, LONDON, S.E.)

We found that the statements made in regard to the merits of this paper are correct. The paper at any rate is free from injurious or irritating substances, is smooth, and while firm becomes soft and apparently soluble like thin rice paper in contact with water.

### SCOTCH WHISKY.

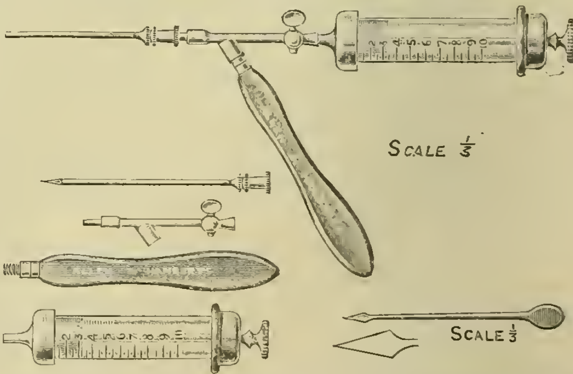
(JULIA HANSON AND SONS, LIMITED, TOWER-STREET, DUDLEY.)

There can be no question that this whisky is not only an all-malt spirit but one also that has been thoroughly matured. It is somewhat full in flavour but is nevertheless smooth and soft to the palate. The claim that it is relatively free from acidity is correct, a claim which has induced the vendors to call the spirit an "anti-gout and rheumatic whisky." In cases in which a stimulant is advisable or allowed by the medical man of course the purest and oldest should be employed, but the use of the expression "anti-gout and rheumatic" in the title of the spirit is objectionable. Our analysis gave the following results: alcohol, by weight 41·80 per cent., by volume 49·29 per cent., equal to proof spirit 86·37 per cent.; the volatile acidity amounted to 0·02 per cent. reckoned as acetic acid. The secondary products amounted in all to 421·54 grammes per hectolitre of alcohol present. This whisky is particularly rich in ethers, the amount being 158 grammes per hectolitre of alcohol. From this standpoint this whisky should serve for the same medicinal purposes as genuine old brandy.

# New Inventions.

### SPINAL ANALGESIA APPARATUS.

THE accompanying illustration gives a good idea of a lumbar puncture apparatus which was made for me last year by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W. I have had it in constant use since then for the induction of spinal analgesia with novocaine, and as it may interest my surgical *confrères* the following particulars will describe it. It consists of two needles, a needle-holder, syringe, and puncture knife. The needles, which measure three inches in length, are very fine ones (No. 17 and 18 gauge), composed of steel or platinum and iridium. I always use one of the latter, as it has the advantage over steel that it does not rust; but its disadvantages are that its edge is apt to get blunt more readily and the price is much more expensive. Their points are bevelled as near a right angle



as is consistent with their perforative power, for were they cut very obliquely it might happen that in some cases, when inserted through the membranes of the spinal canal, part of the aperture was in the subarachnoid space and part outside. Consequently, when the solution was injected analgesia would be absent or imperfect. The needle-holder consists of a hollow tube into which a removable handle, set obliquely, is screwed; one end fits into the socket of the needle, the other admits the nozzle of the syringe and has a stopcock interposed for shutting off the flow of cerebro-spinal fluid when required. The syringe has an improved glass barrel of ten cubic centimetres capacity, to which is adapted a very accurately fitting solid metal plunger, the nickel-plated metal mounts being soldered on to the glass barrel. There are no leather or other washers to get out of order. The puncture knife, which is diamond shaped, is used for penetrating the skin after it has been frozen with the spray of ethyl chloride. By this means two objects are attained: (1) it renders the procedure more aseptic, as the needle is not likely to become contaminated with micro-organisms from the skin; and (2) it prevents the point of the needle from becoming blunt by its passage through frozen tissues. The whole apparatus can be readily sterilised, but care must be taken first to place the apparatus in cold water, which is gradually boiled, otherwise the glass barrel of the syringe is liable to crack. E. CANNY RYALL, F.R.C.S. Irel.

Harley-street, W.

## NEW SYDENHAM SOCIETY: A STRUGGLE FOR EXISTENCE.

THE following report will be made public at Exeter on Thursday, August 1st, and will not, we think, constitute very pleasant reading for those members of the medical profession who know the valuable work done by the society:—

### REPORT.

The works issued during the year 1906 consisted of two double fasciculi of the Clinical Atlas illustrating the subjects of variola, vaccinia, and varicella, and of a printed volume containing selected papers on the Parasites of Syphilis and Small-pox. For the current year a double fasciculus is already in the hands of the members and a second double fasciculus devoted to gynæcological subjects is almost ready for issue. The fasciculi of the Atlas, though fewer in number, are illustrated at greater cost than usual, since almost the whole of the plates are coloured. The treasurer's accounts have been audited and show that at the end of the year (December, 1906) there was a balance of £124 2*s.* 1*d.* but as two cheques amounting to £91 6*s.* had not been presented for payment the real balance amounted to £32 16*s.* 1*d.* Against this, however, were to be set off certain liabilities chiefly for work in progress. Part of this has since been discharged and the secretaries are of opinion that at the close of the present year it is not likely that more than £250 will remain due.

For several years past the treasurer and council have been unable to contemplate without some misgiving the financial position of the society. Too sanguine expectations were entertained during the first years of the issue of the Clinical Atlas and these led not only to the printing of an edition much larger than has been required but to a more liberal expenditure on plates and letterpress than could be afforded. It was anticipated that there would be a larger demand for the back fasciculi than has been realised. The nature of this work rendered it inevitable that the arrangements should be made well beforehand and obligations undertaken. The result was that for several years past the annual income has been to some extent burdened by debts incurred in former years as well as by some which were prospective. It was impossible to allot to each year its own share in expenditure and the auditors were repeatedly obliged to note that whilst the income and outgoings were balanced there remained some outstanding accounts with artists, &c. By careful management during the last two or three years this state of affairs has in part been rectified. No liabilities which could possibly be avoided have been incurred; the edition sent to press has been reduced, advertisements have been almost wholly stopped, the society's agent has accepted a smaller salary, and in every direction the strictest economy has been enforced. If the society were to cease receiving subscriptions at the end of the current year it would be free from engagements beyond the above-mentioned indebtedness of £250, which the realisation of its stock in hand should suffice to discharge.

At a meeting of the council held in December, 1906, when the above facts were fully discussed, a resolution was passed to the effect that it was desirable to submit to the annual meeting a proposal that the society should wind up its affairs. It was felt and expressed by several members of the council that the society had to a large extent completed its vocation. The activity of medical publishers of the present day is wholly different from that which prevailed when the society was instituted half a century ago. Publication under the auspices of a council, bound by rules which entail delay, and controlling only a limited annual income, cannot now compete with the energy and promptitude of individuals who are free to exert their own untrammelled judgment and to act promptly. The works left for the society's selection are now for the most part only those for which the publishers do not think there would be much demand; this applies especially to large printed books, but to some extent also to pictorial illustrations. For the production of the latter new and improved processes are constantly being produced of which a society having a work in current issue and unable to encounter pecuniary risk cannot well avail itself.

Six months have passed since the resolution just referred to was adopted and nothing during that time has transpired to induce those who know most about the details to change their views. For several years the loss of members by death or resignation has been in excess of its gains, and it is obvious that if, under closer financial pressure, the annual issue of books should be reduced the resignations would be likely to increase. It may seem to some almost a defect in courage or energy to contemplate the winding up of a society which yet numbers over 900 members and enjoys a corresponding income. It is true that such an income would suffice for a respectable annual issue of medical literature. The society at the present appears, however, to have no aims before it sufficiently definite and attractive to prevent further dwindling. The Atlas in its present form requires for success a very large income. It has been planned on too large a scale, and in endeavouring to meet the requirements of all it has disappointed many. It is clear that it must be either much modified or be discontinued. Nor does the council feel that there are any works suitable for translation the publication of which would be acceptable and likely to revive the society's former prosperity. In the circumstances which have been explained the society has determined to submit to the judgment of the annual meeting the subjoined proposals:—

1. That the society be continued on the understanding that the council will restrict itself to certain defined objects as follows: in the first place, the issue of an annual volume consisting of short monographs or essays carefully selected and translated promptly after their original publication; and in the second place, of one or more fasciculi of the Atlas, which should concern themselves chiefly with illustrations of the subjects dealt with in the printed volume or of those exhibited in the annual museum of the British Medical Association. Each fasciculus to be complete in itself.
2. That the society be continued, but its work be restricted to the translation and publication for series of foreign monographs or essays, the production of the Atlas or of expensive illustrations in any form being discontinued.
3. That the society be continued, its scope being left as heretofore to the judgment of the council for the time being.
4. That the society shall not be continued beyond the end of the current year. That the present officers be requested to be good enough to remain in office in order to wind up its affairs and be empowered to deal as may be thought best with the stock in hand and with any profits that may accrue from its sale.

At a large and influential meeting of the council held in London on July 18th it was decided to recommend the adoption of proposal No. 4 to the annual meeting, but it was also decided that in the event of this proposal not meeting with approval the alternative proposals 1, 2, and 3 be put before the members.

INTERNATIONAL CONGRESS AGAINST ALCOHOLISM.—The president and the honorary secretary (*pro tem.*) of the National Temperance League have communicated to the *Times* a resolution recently arrived at by prominent British representatives of temperance organisations to invite this congress to meet in London in the year 1909. The Duke of Connaught has consented to act as honorary president of the congress in the event of the invitation being accepted, and among those who have agreed to act as vice-presidents are the Archbishop of Canterbury, Lord Alverstone, Lord Kinnaird, Mr. John Burns, Sir George Livesey, Sir Victor Horsley, and Professor G. Sims Woodhead.

THE LANCET.

*LONDON: SATURDAY, JULY 27, 1907.*

## The School in Relation to the Health of the Nation.

IT is no extravagant statement to assert that with the advent of the general medical inspection of school children and the teaching of the elementary laws of health to the older children a new dawn is breaking in the evolution of preventive medicine ; indeed, hitherto the scope of preventive medicine, limited as it has been to a few only of the acutely infectious diseases, has been altogether too contracted. There are few diseases which are not preventable at least in some degree, more especially if they can be recognised early in their course. Of all preventable conditions which are likely to respond to well-directed educational efforts infantile mortality is by far the most important and most promising, inasmuch as its reduction is very largely a matter of education. There are, indeed, indications that it is only by the knowledge which will follow in the wake of medical inspection and the teaching of hygiene that any substantial reduction can be made in the volume of that great river of mortality which in certain areas of our large towns bears away some 200 of every 1000 children before the first anniversary of their birthday. The full harvest of such inspection and education will not be reaped for many years, not, indeed, until the health conscience which should become developed has resulted in a fitter and fuller motherhood than at present obtains and a knowledge of the factors which make for health and fitness has become appreciated and acted upon. At present we concern ourselves but little with future generations, and there is force in HERBERT SPENCER'S scathing criticism that if the earth were suddenly to become uninhabited and it could be visited a few years hence by people from another planet, Mars perchance, they would on examining our books conclude that, although we wrote on multitudinous subjects, we were clearly a sterile people, since nowhere was there to be found in our books for the young any indication that they were ever expected to become fathers or mothers. It is a strange commentary upon this satire on the part of the prince of philosophers that it is only when a stationary condition of our population is actually threatened by a steadily diminishing birth-rate and an excessive infantile mortality that we are awakening to the desirability of educating and improving the physique of future mothers and fathers. Already there are signs that the medical inspection which is taking place is resulting in a marked improvement in that first essential of health, the cleanliness of the children, and the defects which are being detected in the physical condition of the children hold out promise that many of such defects are preventable or at any rate amenable to great diminution.

The degree of progress which is likely to ensue in consequence of a general scheme of medical inspection and education depends in a paramount degree upon the medical profession as a whole. It is the general practitioner who must be responsible for the treatment of the defective condition of the children revealed by medical inspection. The systematic adoption of the inspection of school children means that there is to be a great searching out of diseased and defective conditions, many of which without such inspection might never be brought to light and consequently never treated. It means that in one capacity or another there will be much more work for medical men to do, and the amount of such work should increase *pari passu* with progress in our diagnostic methods, such, for instance, as is being made in the detection of the early signs of pulmonary tuberculosis. Already medical officers of health when opportunities have offered have organised inspections which have shown clearly what an enormous wastage of physical fitness is taking place and what a large number of children there are who start on the race of life with an unnecessary handicap by virtue of some removeable or remediable defects and who must soon succumb and become dependent upon relatives or the State for maintenance. We are likely to hear much of all this at the forthcoming Congress on School Hygiene which will meet in London early in the coming month, and it is to be hoped that out of that congress there will be crystallised some systematic scheme for dealing with the whole question of the medical inspection of school children and the teaching of elementary hygiene in a fashion easy of comprehension. It appears to us that in so far as local organisation is concerned the interests of economy and efficiency point to the medical officer of health. Several of the more important towns have now in operation a scheme of medical inspection under the administrative control of the medical officer of health, and in our view such control, at least in large urban districts, should be left or placed in his hands. As regards purely rural districts the matter is more complicated, any advantage there would be in intrusting the control to the county medical officer of health being counter balanced by the more intimate personal knowledge that would be possessed by the general practitioner. This is a difficult point which we commend to the deliberations of our readers.

The Inter-Departmental Committee on Medical Inspection of School Children thought that there were obvious advantages in the medical officer to the education authority being also medical officer of health. The duties of the two offices naturally overlap as, for example, in the inspection of school children with a view to prevent the spread of infectious disease, and in supervising the sanitary condition of the schools. Supervision in this sense cannot be removed from the medical officer of health who must also be in frequent communication with the teachers as regards suspicious illness amongst absentees, and who has, or should have, at his disposal means for bacteriological examination as well as for improving the home conditions of the children. The question of the treatment of defective and diseased children discovered by the medical examination is a difficult one. So far no treatment other than that occasionally directed to very minor ailments has been attempted by the education authority, as it is very generally agreed that "to treat the ailment discovered would tend to pauperise the parent." The Committee on Physical Deterioration thought that "in no instance should the inspector do more than state the facts that require the attention of the parent, cases of poverty and neglect being left to the proper authorities to deal with." The Committee on Medical Inspection expressed the opinion that if the children were treated as well as examined the cost would be very materially increased and that medical practitioners would have ground for complaint, more especially in those numerous instances where the school medical officer would also be in private practice. For our part, we agree that the education authority should content itself with informing the parents of the actual conditions observed, leaving them to arrange for treatment in the usual fashion. It is by this means that the cordial coöperation of the medical profession throughout the country will be best insured and that the maximum benefit from the medical inspection of children is likely to result. The medical profession itself has a delicate task before it in so far as the actual inspection of the school children is concerned, but we feel sure that the high ideals which have always animated professional conduct will enable whatever reasonable project is devised to be carried out in the interests of the children.

◆

## The Duties of Certifying Surgeons under the Workmen's Compensation Act, 1906.

ON another page a letter is published from a certifying surgeon under the Factory and Workshop Act, 1901, who has received from the Home Office documents designed to supply him with information as to the fresh duties assigned to him and to those holding similar appointments by the Workmen's Compensation Act, 1906. The last-named statute has probably attracted more general attention than any recent piece of domestic legislation, not even excluding the Education Act passed by the late Government, owing to the inclusion of the enormous class of domestic servants in its provisions, a class not likely to have recourse with any great frequency to its assistance. Innovations of more genuine importance to those sought to be benefited and to those charged with carrying the new law into effect are those which assign compensation for personal disablement to workers who have always been liable to be disabled, either through their own fault or the neglect of their employers, or perhaps from a combination of the two causes, but who hitherto have had to accept the risks of their employment and to bear unaided any resultant injuries. The inclusion of industrial diseases and the incapacity arising from them, so that these are reckoned as if they were personal injuries by accident arising out of, and in the course of, the workman's employment, adds to the duty of the employer to protect his workman by guarding against any such disease the liability to compensate him if, in spite of or in the absence of precautions, he should contract it. The duty of investigating the alleged occurrence of industrial disease has been assigned to medical men specially appointed under the Factory and Workshop Act, 1901, and known as certifying surgeons, chiefly on account of the certificates which they are called upon to grant as the result of the medical examination of juvenile candidates for employment. These gentlemen receive notice of all accidents of a specified character in factories and workshops and of the occurrence of certain industrial diseases mentioned in the Factory and Workshop Act, 1901, to which the Home Secretary has power to add by Special Order, and it is their duty to investigate such cases and to report upon them. Not unnaturally, therefore, in order to secure accurate evidence in connexion with the industrial diseases which are to rank as accidents under the Workmen's Compensation Act, 1906, fresh duties have been imposed upon the certifying surgeons on account of the position which they already occupy and of their familiarity with the subjects to be dealt with. The defining of the procedure to be adopted under the new Act has involved a certain amount of reference to that already prescribed by the Factory and Workshop Act, and the combination of two statutes with their accompanying regulations is likely to afford to certifying surgeons a certain amount of subject matter for careful study.

We do not anticipate that as the result of such study the fears expressed by our correspondent already alluded to will be found to be justified, or that the duties which add new importance to the responsible post of certifying surgeon are as wholly unrewarded as they would be if the personal examination, followed by certification, of a man suffering from a possibly obscure and complicated disease were to entitle the medical man to a fee of 1*s.* only. The circular to which our correspondent refers dwells, it is true, on the necessity for care in filling up the required certificate, the fee for which is in certain circumstances 1*s.* Reference, however, to the regulations which accompany the circular shows that when the fee is limited to 1*s.* it is for the giving of a certificate only, the material for which has been obtained through an examination paid for as such. The fee, in short, is fixed at 1*s.* where the medical examination of the workman has to be made by the certifying surgeon under the Factory and Workshop Act, 1901, or under the special rules or regulations of the Home Office for the carrying out of that Act. The rule which relates to cases not under the Factory and Workshop Act provides "in all other cases a fee of 5*s.*, and where the workman is unable to present himself for examination at the residence of, or other nearer place fixed by the certifying surgeon, for every mile or portion thereof which the certifying surgeon is required to travel therefrom for the purpose of examining the workmen an additional fee of 1*s.*" These are fees to be paid by a workman seeking to establish that he is suffering from a disease contracted in such circumstances as to render him a subject for compensation. There is provision under the Act and under the rules made by the Home Secretary to meet the case of an employer who may seek for a certificate that the disease contracted by the workman is not due to the nature of the employment so as to render his master liable; for this certificate the fee is fixed at 2*s.* 6*d.*, but presumably such a certificate will only be wanted when a workman has already been examined and the examination paid for by him in the endeavour to establish the liability of the employer.

It is to be observed also that a copy of any certificate must on payment of the prescribed fee be given to an employer or a workman by the certifying surgeon, and for such a copy a fee of 1*s*. is to be paid. The regulations made under such Acts as the Workmen's Compensation Act and the Act itself, where they have to be read in combination with the Factory and Workshop Act, may seem a little complicated but will become comparatively clear to those for whose guidance they have been framed as soon as they have had occasion to apply them to a few actual cases.

◆

# Trypsin in the Treatment of Cancer.

THE number of remedies which have been brought forward for the cure of malignant disease is very great and the hopes of the public, and also of the medical profession, are raised from time to time by some new discovery or by the employment of some well-known drug; but experience has always shown that the much vaunted remedy cannot accomplish that for which it has been given and a feeling almost of hopelessness arises. We have so often been deceived by promises that have not been fulfilled that we cannot but view with a certain amount of doubt any new claim. This hesitation in accepting the claims of those who say that they have cured cancers by other than surgical treatment must be beneficial, for it leads to the thorough testing of new remedies. At the Middlesex Hospital it is a definite part of the work of the cancer department to test all new "remedies" for malignant disease and the tests are applied with absolute impartiality, no treatment being condemned as useless until it has been shown definitely to be of no value. In a daily newspaper recently the writer of an article on the use of trypsin in the treatment of cancer complains that "there have been a large number of imperfect trials which have resulted in failure and which have been seized upon by those who are constitutionally incapable of appreciating anything new and by those who have had even less creditable motives for their attitude." It is difficult to guess to whom the writer refers in the latter part of his paragraph, for everyone would welcome with open arms the advent of a genuine remedy for cancer, and none would welcome it more than members of the medical profession for they see more of the pain, the discomfort, and the misery resulting from malignant disease than does any other section of the populace. But medical men also know more of the failures of the remedies proposed for cancer; the apparent successes readily find their way into print, but the many certain failures are much less likely to be recorded.

How does it happen that credit has been given to many substances as remedies for malignant disease while subsequent trial has shown that they are useless? Whenever we find very many substances offered as remedies for the treatment of any morbid condition we may be sure that one or more of the following circumstances are present. The disease may have a natural tendency to abate, whether any treatment be adopted or not; when this is so, the last treatment employed is likely to have the credit of the improvement. Or there may be natural fluctuations in the rate of progress of the malady; any remedy that coincides with a temporary arrest of its progress will have ascribed to it that arrest, even though there may be no connexion between the two. And lastly, a fruitful source of undeserved reputations of drugs in the treatment of obstinate diseases is to be found in errors of diagnosis. In the history of the drug treatment of cancer we can find many instances of the last two of these fallacies. All who have had many opportunities of studying clinically malignant disease have recognised the wonderful variations which occur, and not merely in different cases, though that is very striking. In one patient a cancer of the breast may grow with great rapidity and a few months from the earliest sign may see the fatal result, and in another patient a growth of the breast, equally cancerous, may last some ten, 15, or even 20 years, and, in fact, the patient may die from some intercurrent malady and not from the malignant growth. These differences occur in different persons, but very similar variations may, and often do, occur in one and the same patient. At times a cancer may progress rapidly; in a few weeks or months a small nodule may attain huge dimensions and cause much pain and then without any obvious change in the circumstances, without any modification of diet, drugs, or mode of life, in fact, without any apparent cause, the rapidly growing mass may suddenly cease to enlarge; or it may shrink and all pain may be absent, and for a time this cessation of growth may last, and then after a longer or shorter interval the tumour may again take on active growth and rapidly lead to a fatal issue. Sometimes the slackening of the progress of the cancer may be permanent; years may pass by and but little change be observed. Nay, more, the halt in the increase of the malignant growth may be followed by very sensible diminution in the size of the tumour and this diminution may continue until what at one time was an enormous mass may have dwindled until only a small nodule remains and cases have even been recorded where a growth has absolutely disappeared. And in some of these cases there can be no question of a mistake in diagnosis, for there are cases of cancer of the breast in which surgical removal of the growth has been followed by recurrence; histological examination of the original mass has settled beyond question the malignant nature of the tumour and yet the recurrent nodules have disappeared completely. Should any of these ameliorations of the signs and symptoms of a cancer have coincided with the administration of Chian turpentine or extract of violet leaves or any other belauded remedy then it is only natural that the drug employed should be credited with the improvement that has occurred, and it cannot be doubted by any careful observer of cases of malignant disease that this explanation is true of the reputation that has been gained by many substances.

There is, however, an even more potent source of error in this matter, and that is faulty diagnosis. It sometimes happens that, even when a growth has been removed and has been examined by the naked eye and microscopically, it has not been possible to say with absolute certainty whether it is malignant or not, and if this be so when we can examine a tumour with all the resources at our command how is it possible always to guarantee the malignancy of a growth in the living body? It must be allowed by all who are conversant, clinically and histologically, with the subject that this liability to error in diagnosis is very great, and if it is great with those who have abundant opportunities of studying carefully malignant disease how much greater is it with those who are untrained? With many "cancer curers" any swelling is a cancer, and even with those who have no motive for miscalling a simple growth or an inflammatory swelling the word cancer is used with a freedom unjustified by the course of the disease. When, therefore, a new remedy that is claimed to be a remedy for cancer is introduced there is a natural feeling of doubt that the introducers of it have been hasty in bringing it forward, and not until it has been tested and re-tested can it be admitted as a trustworthy treatment.

One of the recent cancer "cures" that has received more public notice than is usually accorded to new remedies is trypsin. The history of its introduction is of itself interesting. In 1902 Mr. J. BEARD, a Doctor of Science of Victoria University and University lecturer in comparative embryology, Edinburgh, first propounded the theory that malignant growths are nothing more than the result of the development of vagrant irresponsible germ cells. This theory must not be confused with COHNHEIM'S suggestion that tumours may develop from embryonic "rests," for these would consist of somatic cells. Dr. BEARD further maintains that the majority of unutilised germ cells or trophoblasts are destroyed in the normal development of an embryo about the time that the pancreas commences its functional activities. He holds that the trophoblast nourishes itself by an acid intracellular digestion and that when the stronger alkaline enzyme of the pancreas appears on the scene it is able to overcome the intracellular enzyme of the trophoblast and therefore brings to an end the growth of the trophoblast. The deduction from these theories jumps to the eyes. If in the normal development of the body the trophoblasts are destroyed by the pancreatic ferments, and if cancer is only the result of the persistence of a trophoblast, then the introduction of pancreatic ferments should lead to the destruction of the cancer. Each of these "ifs" is rather large, but granting the premisses we can hardly refuse the conclusion. It is, to say the least, curious that the utilisation of pancreatic ferments should have suggested itself to other observers and for entirely different reasons. There is an excess of glycogen in the active cells of carcinomata, as in all rapidly growing tissue. Dr. J. A. SHAW-MACKENZIE has suggested that this excess of glycogen in cancers is due to insufficiency of the pancreas and naturally he came to the conclusion that it would be well to try the action of pancreatic ferments in malignant disease. Similarly Dr. R. ODIER of Geneva has advised a mixture of the extracts of the pancreas, the liver, and muscle in the treatment of cancer. So far theory only has spoken but Dr. BEARD proceeded to test his theory by the injection of trypsin into some mice which had been inoculated with Jensen's mouse tumour. Two were inoculated and others were kept as controls. Of the two inoculated mice, one died from an accident ten days after the commencement of the injections and its tumour was only half as large as those in the controls, while the second inoculated mouse was killed after three weeks' treatment and the tumour was very much reduced in size; in both the injected cases there was a uniform degeneration of all the cancer cells. It must not be forgotten that even in untreated cases of carcinoma very similar changes occur in the cells, and as to the diminution in size of the tumours some untreated cases of Jensen's tumour show as much decrease. With these observations we may reasonably compare those obtained by the Imperial Cancer Research Fund, in the annual report of which body the general superintendent states that trypsin has been carefully tested on mice with rapidly growing Jensen's tumours, that a large number of observations have been made, and that it has been proved that the treatment "is incapable of curing mice of inoculated cancer or of influencing the progressive growth of tumours."

We come now to consider the employment of the treatment in human beings. Many failures have been met with but we may mention that some of the unsuccessful cases appear to have been treated with solutions containing no trypsin, while sometimes the ferment has been destroyed by the employment of a syringe too soon after it has been sterilised by heat, but more recently these fallacies have been guarded against. Dr. C. C. RICE of New York reported in November, 1906, that he had treated four cases with trypsin; in three no marked change occurred, but in one, a case of laryngeal carcinoma, complete recovery resulted in two and a half months. Clinically it is said that there was no doubt as to the diagnosis but no microscopic examination was made. The cases which chiefly attracted attention in this country were those treated by Dr. W. J. MORTON of New York. He had 29 patients under trypsin treatment and public attention was drawn to these cases by articles in the London daily press. Depending only on a telegraphic summary of Dr. MORTON'S paper which appeared in the *Medical Record* of Dec. 8th, 1906, one or two newspapers published highly exciting articles on this "new cure for cancer." We are willing to concede to the authors and publishers of these articles a sincere desire to benefit suffering humanity; but their zeal was without discretion and their pathological knowledge superficial, and it is certain that many hopes were raised only to be dashed to the ground. If before these writers had entered on a campaign they had waited for fuller details they would have learned that the "cures" were more than doubtful. The most remarkable of Dr. MORTON'S cases was one with an extensive carcinoma of the breast. It was said that a most remarkable atrophy of an entire cancerous breast had occurred, but when the fuller particulars arrived we learned in the first place that the tumour had been treated not only with injections of trypsin but also with x rays, and then the "fibrous mass" which remained was removed surgically. When a microscopic examination was made of the removed mass degeneration of the cancer cells with increase of connective tissue was found in the central part, but towards the edge the cells were evidently living and growing; in fact, the growth showed the typical appearance of scirrhous carcinoma. It will thus be seen that this case is worthless as any evidence of the curative power of trypsin. Of the remaining 28 cases treated by Dr. MORTON five have died under treatment, in five no change was apparent, and in 18 there was said to be some improvement. No further details have reached us on this point. Two of the patients with "epithelioma of the face" were said to be cured but we have not sufficient data to be certain of the correctness of the diagnosis.

At the Middlesex Hospital trypsin has been tried; in the first two cases there was no improvement in the patients nor was the progress of the growth influenced by the injections; but it may be objected that in these cases the preparation of trypsin may not have been potent, so later a fresh supply of the drug was obtained and each ampoule of injection was tested for digestive power. The injections were used on nine cases; in three of these treatment was employed for little more than three weeks and therefore they may perhaps be put aside. In the remaining six cases the treatment lasted from 66 days to 118 days. Of the six, two succumbed, one was sinking fast at the time of the last note, and three were still living. In two of those still living at the time of the report the weight had decreased; in the third it was stationary. The evidence of improvement in the six cases was as follows: in one there was distinctly less pain, in one there was a diminution of the stenosis of the rectum, and in one the disease was stationary. The treatment did not prevent most of the patients from showing a progressive loss of weight and except in one case no local improvement occurred. We have no wish to condemn the trypsin treatment; we have heard of cases where improvement appeared to have resulted from the trypsin injections. We have heard also of cases where no benefit occurred. When the treatment has been tested systematically both on mice and men it seems to have failed completely, and it is only by a thorough trial that we can come to a correct conclusion as to its value. No one will rejoice more than we shall should the treatment eventually prove of value, but hitherto we have seen no certain evidence of that value.

# Annotations.

"Ne quid nimis."

## THE NEW COURT APPOINTMENTS.

THE King has been pleased to appoint Sir Richard Douglas Powell to be one of the physicians-in-ordinary to His Majesty in the room of Sir William Broadbent, deceased. Dr. Bertrand Dawson, physician to the London Hospital, has been appointed one of the physicians extraordinary. The King has also been pleased to appoint Sir Thomas McCall Anderson to be one of His Majesty's honorary physicians in Scotland in the room of Sir William Gairdner, deceased. In the notice of these Court appointments, as it appeared in the *Gazette* on Friday last, July 19th, the name of Sir Thomas Fraser, also one of His Majesty's honorary physicians in Scotland, was substituted for that of Sir William Gairdner, with the result that many questions were directed to us as to how and when and where the well-known professor of clinical medicine in the University of Edinburgh had met his death. We were happy to be able to assure inquirers that he was, in his own words, "very much alive."

## THE DESTINY OF CASE-BOOKS.

THE destiny of old case-books and notes of cases is one which concerns medical men and the public alike. What, as a rule, becomes of a medical man's written records of his patient's ailments? Generally speaking, these highly interesting and often compromising documents are handed on by each medical man to his successor in a practice, but where there is no such succession—what then? As a rule, when a learned man dies, unsympathetic legatees regard his books and papers with scant favour. Sometimes, on the part of a practical widow and her daughters, there occurs a great burning of "dear papa's old rubbish," but at other times there is a scattering to the four winds of heaven of documents that it would have been best to burn. This scattering is not necessarily rapid; it may last years and its final result may be that the most private memoranda have become matter of public comment by the literary pickers-up of unconsidered trifles. Medical men should, of course, make a point of leaving their case-books and other memoranda in safe hands, and this can be done either by will or on retirement from practice. Sir Astley Cooper's elaborate accounts of cases are now in a special or reserved collection in the library of the Royal College of Surgeons of England. This is as it should be. As the great surgeon always mentioned the names of patients and as those names are still mostly well known in England to-day, it is alarming to reflect what would have happened had his very circumstantial records of ancestral complaints fallen into the hands of nervous moderns to-day. But this might have, and has in other cases perhaps sometimes, happened.

## THE PUBLIC TELEPHONE CALL OFFICE AS A FACTOR IN THE SPREAD OF DISEASE.

IT would be interesting to know the bacteriology of the air of public telephone call offices. The suggestion should stimulate the curiosity of the scientific staff of the London County Council, many of the inquiries of which have proved the insanitary conditions of many places in the light of bacteriological research. The public telephone call office appears to be singularly well designed for the capture and growth of pathogenic organisms. These little stations are usually carefully closed, are padded, and kept almost air tight; sunshine and fresh air seldom can reach the interior, while of course no attempt is made to keep them aired or ventilated, because any provision for securing ventilation is calculated to make difficult the hearing of the message. External sounds must be kept out, the box must be sealed against them, and when this plan succeeds it must succeed also in excluding with equal efficacy external purifying agencies. The telephone call station may be described, in fact, as a bacteriological box in which pathogenic and other organisms are carefully nursed. Infection of the imprisoned air must at all events be constantly taking place and this only too readily spreads whenever the opportunity arises. Caller after caller thus either may infect or receive infection so long as no steps are taken to purify the air within the station. It is a common experience of those who have occasion to use these call offices that unless the padded door which when closed is tight-fitting is left wide open (a plan which is not encouraged) the air within is frowsy, stale, and often has an offensive odour. Common sense appeals against this state of things and it would be safe to predict that the bacteriological examination of this air would tell an appalling story. Surely it would be simple enough to attach a system of ventilation to these call boxes which would not interfere with the articulation of the transmitting disc or prevent the message from being heard. The interior should be air-swept regularly or automatically and disinfected. We have heard of the septic condition of the receiver or tube into which the operator delivers his message and we know that it has been clearly demonstrated by scientific experiment that in the act of speaking *materies morbi* may be projected from the speaker's mouth for a considerable distance. With reasonable care such a risk of infection can be minimised, but the polluted air of the telephone box can scarcely be avoided. Many persons using the telephone speak needlessly near to the receiver. The message at the other end is no clearer for this and is often unintelligible in these circumstances. A message well delivered with words properly and concisely pronounced is faithfully recorded, even though it is spoken quite away from the receiver. The contamination of the receiver when it exists may therefore be avoided to a very great extent, but the air of the telephone call box is difficult to avoid and yet it must contain a whole menagerie of organisms, some of them without doubt pathogenic, and it should be the duty of the telephone authorities to protect their customers from the possibility of contracting disease in this way by providing for a constant renewal of the air and by keeping the station bacteriologically clean by the use of an efficient disinfectant.

## BREAKFAST FOODS.

THE recent work of Professor Robert Harcourt on the food values of advertised "breakfast foods," which formed the subject of an annotation in our issue of May 4th, p. 1240, has been amply corroborated by the publication of the results of the analysis of 99 samples of various "breakfast foods" by Mr. J. G. A. Valin, in the laboratory of the Inland Revenue Department, Ottawa, Canada. Mr. Thomas Macfarlane, the chief chemist of that department, in issuing the report defines a "breakfast food" as consisting of a cereal which has been subjected to a certain amount of preparation or cooking, with or without the addition of some other food material. Determinations were made of the proteids, moisture, and fat. In a previous bulletin (No. 127) it was shown that rolled oats which have had no previous cooking never yield more than 3 per cent. of dextrin. Of the foods examined, only Beaver oats, Quaker oats, Saxon oats, and Pilson's oats appear to be made from oats, as judged by the percentage of fat present. The figures obtained by the analysis of rolled oats and of porridge made from the same afford a useful guide to the values of these foods. The figures are calculated on the dry substance :—

| | Total proteids. | Fat. | Sugars and soluble proteids. | Dextrin. | Starch. |
|---|---|---|---|---|---|
| Rolled oats ... ... ... ... | 13·76 ... | 5·19 ... | 4·13 ... | 2·32 ... | 71·21 |
| Porridge made without salt | 18·72 ... | 0·55 ... | 0·34 ... | 7·62 ... | 67·41 |
| " " with " | 17·60 ... | 1·17 ... | 6·69 ... | 13·97 ... | 53·98 |

If the analyses of the four advertised varieties of prepared oats above mentioned are calculated on their dry substance the resulting figures show that they contain less than half the amount of dextrin present in porridge prepared by the old-fashioned way. The figures here recorded show that the method of cooking oatmeal without salt is a very ineffective way of predigesting the starch which it contains. Porridge cooked with salt contains twice as much soluble dextrin as porridge cooked without salt. Another fact which is brought out by these tests is that the fat seems to disappear during the cooking. It is possible that it may enter into some sort of combination with the proteids so as to render it incapable of removal by the usual solvents. It has been shown by Dr. Chamberlain of Washington that the fat of wheaten flour undergoes such a change in the process of baking bread. It is important to note that, calculating on the dry substance, bread contains from 13 to 16·76 per cent. of substances soluble in water after extraction by alcohol, representing an amount of dextrin far greater than that contained in most of the "breakfast foods" examined. It follows from this investigation that the claims as to "predigestion" made for advertised foods are often exaggerated. Porridge made with a suitable quantity of salt is vastly superior to most of them in this respect. As regards the processes of "rolling" and "flaking" the grains it is quite possible that the thinning out of the material increases the digestibility but it is questionable whether the advantage is worth the extra cost. "Breakfast foods" are usually sold in packages of varying weight, a fact which renders a strict comparison of prices impossible, but the price of these foods appears to vary from 5 to 23 cents per pound, whereas oatmeal or wheaten flour is retailed in Canada at from 3 to 4 cents per pound. In conclusion, reference may be made to the extravagant phraseology of the claims made for many of these foods. The language is similar to that employed by the manufacturers of quack medicine. We quote a few instances in illustration of this: "The natural food for creating power"; "Concentrated malted food; ready to eat. Pure, predigested, thoroughly cooked"; "A food for brain and nerve centres"; "Grain combined with vegetable or plant iron"; and "The natural food for creating power, repairing waste, maintaining energy."

## CATS AS A PREVENTIVE OF PLAGUE.

SINCE Lieutenant-Colonel A. Buchanan, I.M.S., wrote in May last drawing attention to the value of the domestic cat as a preventive against plague and insisting on the fact that as the animal enjoys the unique distinction of being held sacred by Hindus and Mahomedans alike it would be difficult for even native suspicion to suggest sinister motives to Government in encouraging its breeding and maintenance, there have been several communications to the same effect in the Indian press the writers of which were apparently unaware that the subject had already been broached by Lieutenant-Colonel Buchanan. Writing to the *Pioneer* from Cherat on June 4th Major O. R. A. Julian, R.A.M.C., after deploring the want of success which has attended upon all efforts to deal with plague on scientific grounds, proposes that good healthy cats should be brought in small consignments and protected while breeding until they were sufficiently numerous for distribution. Then to encourage the natives prizes should be offered in each village, one for the finest cat and another for the best ratter. "I venture to think," continues Major Julian, "that the sporting or gambling instinct of the native would be appealed to and that he would probably turn up not only with his cat but with a bag of rats for the contest, and the extermination of rats would be an event of the near future and with them the plague." On June 15th Assistant-Surgeon S. M. Pavri wrote as follows to the *Times of India*: "The rat-flea-man theory being scientifically established, the desirability that every house should be without a rat is the burning question of the day. But so many and so varied are the religious superstitions and social prejudices among the peoples of India against this destruction of rats, and so wonderfully prolific is the rat itself, that how to achieve this end on the line of least resistance does, and I am afraid will, remain a moot point. ...... Under these circumstances may I venture to suggest a remedy which does not seem to have attracted the attention it deserves? I mean a rat-killing campaign by cats." Assistant-Surgeon Pavri then proceeds to argue that the getting rid of rats by means of their natural enemies is not calculated to arouse opposition or discontent on the part of "the sensible masses who will not reject the bargain when it is a question of life and death to them and their families." Under the head of "Notes and News" in the *Journal of Tropical Medicine and Hygiene* dated July 1st it is stated that "Lieutenant-Colonel Buchanan took a cat census of certain villages that enjoyed exceptional immunity from plague and of others that had been severely handled by the disease." The result showed that the immune communities harboured large numbers of cats, whereas in those that suffered the animals were scarce. Our contemporary is of opinion that "the expedient is one that is certainly worthy of attention, though it is difficult to see how the keeping of cats can be spread more widely by official action." The circulation of pamphlets in the vernacular is recommended, as "the native is by no means impervious to appeals of common sense." We quite agree with this but we are also of opinion that Major Julian's suggestion might well receive official encouragement.

## THE BACTERIOLOGICAL EXAMINATION OF THE BLOOD IN TYPHOID FEVER.

IN recent years the value of bacteriological examination of the blood in the diagnosis of typhoid fever has become more and more appreciated. It has become a routine practice in some hospitals and has been found to be successful at an earlier stage than has Widal's test. The *American Journal of the Medical Sciences* for June contains an important paper on the subject by Dr. W. Coleman and Dr. R. H. Buxton. During the last six years they have bacteriologically examined the blood in 123 cases of typhoid fever and found the bacillus in 75 per cent. They draw 10 cubic centimetres of blood from a vein at the bend of the elbow and, following Conradi, they have abandoned broth and used ox gall as culture material with better results. A mixture is made of 90 cubic centimetres of ox bile, 10 cubic centimetres of peptone glycerine, and two grammes of peptone and is distributed into flasks in portions of 20 cubic centimetres and sterilised. Three flasks are used for an examination and about three cubic centimetres of blood are run into each. The flasks are incubated and on the following morning streaks are made from each over the surface of a litmus-lactose-agar plate. If microbes are present a growth may be observed in five or six hours. If the growth does not redden the medium and is found to be a bacillus resembling the typhoid organism it is tested for the Widal reaction with immune serum. Thus typhoid fever can often be diagnosed within 24 hours of drawing the blood. Dr. Coleman and Dr. Buxton have used this method in 34 cases. As a rule the blood was examined when a patient with fever for which there was no obvious cause was admitted to hospital. Six of the cases were ultimately found not to be examples of typhoid fever. Three ran the clinical course of typhoid fever but gave neither a blood culture nor the Widal reaction. In one case there was a difference of opinion as to the diagnosis. The remaining 24 cases were clinically typhoid fever and in all positive results were obtained by bacteriological examination of the blood. In cases of long duration examinations were made from the fifth to the twenty-first day of the disease. Previously 1602 cases of bacteriological examination of the blood in typhoid fever had been recorded. Of these 1197 (75 per cent.) gave a positive result. Of 224 examinations in the first week of the disease 89 per cent. were positive. The earliest positive result was obtained on the second day of the disease by Widal's test. Positive results become more frequent as the end of the first week is approached. Of 484 examinations in the second week 353 (73 per cent.) were positive. Of 268 examinations in the third week 178 (60 per cent.) were positive. Of 103 examinations in the fourth week 39 (38 per cent.) were positive. Of 58 examinations made after the fourth week 15 (26 per cent.) were positive. Some observers have obtained positive results from bacteriological examination of the blood in typhoid fever in 100 per cent. of the cases. Dr. Coleman and Dr. Buxton have obtained similar results since they adopted the bile-culture method. Hence they conclude that the bacillus is present in the blood in every case of typhoid fever and that failure to find it is due to defective technique. The diminishing percentages in the later weeks of the disease do not indicate that the bacillus has disappeared from the blood in the negative cases but point to diminishing numbers of bacilli which imperfect methods have failed to reveal. The bacillus appears to disappear about the time when the temperature falls to normal. This constant presence of the bacillus in the blood in typhoid fever modifies our conception of the pathology of the disease. It has been shown that the bacillus may flourish in the intestines of healthy persons who show no signs of the disease. Therefore, to produce typhoid fever the bacillus must grow in a situation whence it has free access to the blood. As the lymphatic glands and spleen contain enormous numbers of bacilli Dr. Coleman and Dr. Buxton suggest that the bacillus first finds its way from the alimentary canal to the lymphopoietic system where it develops chiefly and that thence it invades the blood stream. They think it doubtful whether it multiplies in the blood. According to this view its presence does not indicate a true septicæmia.

## THE UNITED SERVICES MEDICAL SOCIETY.

THE first meeting of the council of the newly formed United Services Medical Society was held on May 30th. It was decided that meetings should be held at the Royal Army Medical College at 8.30 P.M. on the second Thursday in each month commencing on Oct. 10th next; that the annual subscription should be 5*s.* payable in advance; and that a notification of the formation of the society, accompanied by an invitation to join, should be sent to all medical officers on the active lists and to those on the retired lists whose addresses could be discovered. Should any medical officer on the active or retired lists of the navy, the British and Indian armies, or the auxiliary and colonial forces not receive an invitation the council hopes that, if desirous of joining the society, he will communicate with one of the honorary secretaries, Fleet-Surgeon W. W. Pryn, R.N., "Tredown," 25, Idmiston-road, West Norwood, London, S.E., or Lieutenant-Colonel C. H. Melville, R.A.M.C., Royal United Service Institution, Whitehall, London, S.W.

## "SALTED PLAGUE VACCINE."

AT a summer meeting of the Bombay Medical and Physical Society Dr. R. Row described some peculiar physical and chemical characters presented by bacillus pestis when grown at a temperature of 40° or 41° C. or in symbiosis with staphylococci. A plague culture grown under these conditions is sticky and glutinous, so that it is with difficulty scraped off the agar surface on which it is grown; but when it has been dislodged from its bed the whole culture can be easily gathered up on the platinum loop in the form of a bead owing to the gummy and cohesive nature of the mass. This sticky character of bacillus pestis grown at 40° or 41° C. contrasts strongly with that of a bacillus grown at the room temperature of 25° or 28° C. The cause of the difference in the two classes of cultures is that the growth at low temperatures is rich in chromatophile endoplasm with hardly any ectoplasm or "capsule," while that grown at higher temperatures is rich in the ectoplasm or capsule, the chromatophile granules being found only in small traces. This character of stickiness is also an index of the virulence of the culture, being present only in those of high virulence and absent in those of low virulence. A sticky plague culture when taken up in sterile water and allowed to stand for several days yields a uniformly opalescent fluid consisting of a sort of suspension or emulsion of the glutinous material entangling a few bodies of the plague bacilli. On addition of chloride of sodium even in excess to an emulsion of a sticky culture no precipitate is obtained until after several weeks' standing. This salted emulsion, therefore, not only gives a fluid rich in protein material but the presence of sodium chloride in excess renders the fluid sterile after a few days, so that a potent and at the same time a sterile toxin may be obtained by this method. Dr. Row concluded with an elaborate comparison between the properties of this salted toxin and those of Haffkine's plague prophylactic.

## APEPSIA.

SINCE the late Dr. S. Fenwick in 1870[1] described the condition of atrophy of the stomach, a large number of observations have clearly demonstrated that in certain cases the chemical processes which normally occur in the stomach may be entirely abolished. Pathological observation has confirmed the view of Dr. Fenwick that this condition is the result of a more or less complete atrophy of the glands of the mucous membrane of the stomach. In addition to the name of "apepsie" which has been applied to the condition by French authors, it has been called "anadenia ventriculi" by Ewald, "phthisis ventriculi" by Georges Meyer, and "achylia gastrica" by Einhorn. An interesting and exhaustive monograph has been published on the subject by Dr. H. Français.[2] In his historical account he states that the term "apepsia" was introduced by Galen and used by Molière in his "Malade Imaginaire"; Rokitansky in 1843 refers to a stomach showing a marked condition of atrophy, but undoubtedly the credit of first recognising and describing the condition belongs to Dr. Fenwick. Ponfick, in 1873, and Quincke in 1876 described examples of gastric atrophy in association with pernicious anæmia. Apart from records of cases little advance was made from the publication of Dr. Fenwick's second paper in 1877[3] until Ewald in 1886 proved that hydrochloric acid was absent from the stomach in these cases. From that time onwards a large amount of work has been devoted to the chemistry of the gastric contents, among the most important being that of M. Hayem and his collaborators who have shown the importance of the organically combined chlorides in regard to gastric digestion and have investigated their quantity in this condition. Dr. Français comes to the conclusion that apepsia is not a pathological entity but a syndrome occurring in association with various morbid states, and characterised by the abolition of the digestive functions of the stomach. In the most advanced type examination of the gastric contents shows an entire absence of free hydrochloric acid and of organic combinations of that acid; in others there may be an absence of free acid but a certain amount of organically combined chlorine. In both groups the digestive power of the juice is found to be wanting as tested by its action on proteins. Dr. Français describes the condition of chronic apeptic gastritis as that with which apepsia is most frequently associated. This disease is much more common in women and may be a sequel of any chronic inflammatory process affecting the gastric mucous membrane. Alcoholism, lead poisoning, and excessive tobacco smoking are all regarded as possible causes, the last condition accounting for a considerable proportion of the cases in men. The pathological anatomy comprises various forms of inflammatory and degenerative changes in the mucous membrane, especially parenchymatous or glandular gastritis, interstitial or mixed forms of gastritis, mucous transformation, and complete atrophy. In the last condition, which is that which most forms tend to reach, the mucous membrane may have a thickness not greater than half a millimetre and may consist of little more than a low cylindrical epithelium on a foundation of connective tissue with a few short glandular tubes. Clinically there may be recognised a latent form in which the symptoms may be very slightly marked, a form associated with great pain either shortly after food or from an hour to two hours later, and a form associated with severe diarrhœa. A similar condition of apepsia is not infrequently seen in association with cancer, either of the stomach or other organs, with pernicious anæmia, and with certain infections and intoxications—such as typhoid fever, uræmia, and diabetes. Dr. Français, in collaboration with M. Lion, was able to produce experimentally a condition of apepsia in dogs by means of the injection of a gastro-cytolysine prepared from the rabbit, an observation throwing considerable light upon the production of the condition through infective fevers and intoxications. It is also maintained by some observers that apepsia may occur in association with chronic nerve diseases, such as tabes dorsalis, and with neuroses and neurasthenia. The diagnosis of the condition of apepsia is usually easy and depends upon the results of the examination of a test meal, but the differentiation of the condition giving rise to the apepsia, whether gastritis, cancer, pernicious anæmia, or other chronic disease, is often a matter of great difficulty necessitating a careful consideration of the history, symptoms, physical signs, and of the blood count. For treatment Dr. Français recommends a careful regulation of the diet, avoiding fatty foods, and giving lightly boiled eggs and meat in small quantity. He finds that kephir is most valuable in these cases, especially in those with diarrhœa, commencing with a diet of kephir only and gradually introducing other food substances. In cases of gastric cancer with pyloric obstruction kephir is, however, contra-indicated. M. Soupault has obtained good results in the cases with diarrhœa from the administration of dilute hydrochloric acid given with lemon juice in the form of lemonade during the meal.

## THE HYGIENIC EFFICIENCY OF GAS FIRES.

AN elaborate series of practical observations on the use of gas fires for the warming of apartments will be found in a paper read by Mr. John H. Brearley of Longwood before the Institution of Gas Engineers and published in the *Engineer* of July 12th. Mr. Brearley considered that the best gas fire for warming a room was the one which gave the greatest proportion of radiation and the products from which were not allowed to enter the room. As sources of radiation he found that iron frets were superior to fire-clay "fuel" in the proportion of 136 to 125. Air-heating tubes or chambers at the back of a fire reduced the radiation. A thin body of "fuel" was essential to a high radiative efficiency. With regard to the loss of heat carried away with waste products (flue heat) Mr. Brearley said that it varied a great deal according to the method in which the fire was connected. The chimney should be allowed to draw a large portion of the air from the room without an excessive "vacuum" in the stove flue-pipe, as was the case when the whole of the air which left the room was drawn through the stove itself. For this reason those stoves which were provided with ventilating outlets, in addition to the flue-pipe, were to be commended. Where such devices were not used the whole of the chimney opening should never be blocked up. It was often assumed that the heating efficiency of a gas-fire stove was increased by doing this, whereas the reverse was the case. Tests that were made for carbon monoxide showed that this substance was either completely absent or else present in such small traces as to warrant the inference that gas fires did not produce carbon monoxide when properly constructed and kept clean. It was known that when a gas flame came into contact with a cold surface carbon monoxide was produced, but so far as gas fires were concerned this was almost entirely avoidable, and in cases of neglect it could only continue during the first few seconds after the fire was lighted. Flueless stoves should not be fixed in rooms which were habitually occupied as much carbonic gas escaped from them. These stoves were not so economical of heat as was often supposed because they imparted heat to the air which immediately ascended to the ceiling, objects in the room remaining comparatively cold. This was a process of heating by convection, whereas the action of gas fires depended on the much better system of heating by radiation which warmed the objects in the room rather than the air.

---

[1] THE LANCET, July 16th, 1870, p. 78.

[2] De l'Apepsie, par le Docteur Henri Français. Paris: G. Steinheil. 1906.

[3] THE LANCET, July 7th (p. 1), 14th (p. 39), and 21st (p. 77), 1877.

## THE STUDY OF SPIROCHÆTÆ.

Schaudinn's observations upon the micro-organisms associated with the primary and secondary lesions of syphilis have acted as a powerful stimulus to the investigation of the genus spirochæta, alike by the student of pathology and by the protozoologist. But progress in this field of inquiry is still far from rapid, chiefly by reason of the small size and active movement of the majority of spirochætæ, for so great are the difficulties in the way of demonstrating details of structure, and so great are the difficulties of interpreting beyond possibility of question the appearances observed, that the data now at our disposal are still inadequate to dispose satisfactorily of even fundamental points. For example, the question of the position in nature occupied by spirochætæ is still a subject for discussion. Reproduction by longitudinal fission and the possession of a centrosome and of an undulating membrane are considered sufficient evidence by some observers of their title to rank in the animal kingdom, whilst others, relying on reproduction by transverse fission and the possession of diffuse nuclei and of flagella, would place them in the vegetable world, although a consensus of scientific opinion would at the present moment probably place the genus among protozoons rather than among bacteria. Again, the true relationship, if any, existing between spirochætæ on the one hand and trypanosomes on the other affords ample scope for speculative inquiry. In the meantime many of the facts that are accumulating so slowly are, as so often happens, derived from observations upon species which have no obvious and direct importance in medicine; nevertheless, the deductions drawn therefrom are of too great interest to be neglected. As a case in point we may mention some observations on spirochætæ derived from the oyster and from a British freshwater mussel, Anodonta cygnea (in which latter, by the way, they have not previously been noted as occurring), recently recorded by Fantham in the *Annals and Magazine of Natural History*. Dealing in the first place with the movements of these two species of spirochætæ—viz., spirochæta balbianii and spirochæta anodontæ, Fantham considers that the motion is resolvable into at least two components, the first a vibratory flexion of the body, mainly subserving the purpose of locomotion, and the second a spiral or corkscrew movement of the body as a whole, due to the winding of the membrane; this corkscrew motion is especially well seen in the case of spirochæta anodontæ, which has pointed ends. Compared with trypanosomes the spirochætæ seem to move more quickly and with an added corkscrew motion. Both the spirochætæ studied possess a spirally wound membrane, which is a lateral extension of the ectoplasmic periplast, a contradiction of the statements of Laveran and Mesnil who regard this structure as a loose investing membrane. The writer describes the undulating membrane as composed of longitudinally arranged "myoneme" fibrillæ, and it is these myonemes which set up the *transverse movements* in the surface of the body, manifested as waves passing down the body in a direction opposite to that in which the organism moves. The so-called "ciliate" (flagellate) stages in spirochætæ described by some writers Fantham regards as post-mortem products, for they are never seen during life, the apparent flagella or cilia being probably merely "myoneme" fibrils split off from the membrane during its rupture, which sometimes occurs during the violent contortions in the death struggles of the organism. Longitudinal fission is undoubtedly the more common form of reproduction, although observations are instanced which support the contention that transverse fission does actually take place; Fantham, however, apparently does not accept, at any rate in its entirety, Perrin's suggestion as to the presence of male and female forms. These observations are of very great interest and it remains to be seen how far the results obtained hold good for allied species and particularly for spirochæta pallida.

## MODERN ALCHEMY: TRANSMUTATION REALISED.

Sir William Ramsay has promised to communicate to the Chemical Society shortly a full account of his researches on the radium emanation. The occasion will mark a great epoch in the history of chemical science since his investigations have shown that a given element under the powerful action of the radium emanation undergoes "degradation" into another. In short, the transmutation of elements is actually *un fait accompli*. We already know that helion appears as the radium emanation disappears, while when the emanation is in contact with, and dissolved in, water neon is produced but when in contact with a solution of copper salts the chief product is argon. More marvellous still is the fact that when copper salts are used lithium appears where before was no lithium. Copper is thus "degraded" to the first member of its family—i.e., lithium. For aught we know to the contrary, the time may ultimately come—over, of course, ages and ages—when the metallurgy of the world will be "degraded" to the alkaline metals. It would appear, therefore, that the noble metals are slowly breaking down and that gold, platinum, uranium, and other elements of high atomic weight will disappear and that their descendants will be the commonplace elements. This would seem to teach that gold and the other metals exhibiting high atomic weights have, after all, a complex and unstable constitution, the tendency of which is to resolve into simpler substances. These remarkable discoveries remind us again of the extraordinary prescience of the ancients, of the presentiments of the alchemists who evidently had some sort of a conviction that, after all, there is a primary matter from which all other elements are formed by various condensations. He is a bold man who nowadays confesses scepticism about anything. The world has seen men who have said "it is impossible." Generations have succeeded them who have seen the "impossible" come to pass.

## THE RECOVERY OF RESIDUES FROM BRINE AND THEIR UTILISATION IN THE ROUTINE TREATMENT AT SPAS.

IN THE LANCET of July 28th, 1906, we referred in an annotation (p. 242) to an interesting communication which we received from Mr. F. Bale of Droitwich who drew attention to the fact that the ordinary scale which is produced in the brine evaporating pans contains certain mineral constituents which can be utilised with advantage in the routine treatment at spas. He stated that, amongst other things, the mother liquor contained the sulphates of calcium, magnesium, and sodium. If this liquor is diluted with water and salt scale added a mineral water is obtained effervescing, he says, with oxygen. We remarked that the disengagement of oxygen seemed to be singular and apparently proceeded from the dissolution of the hydrated sulphate of calcium, which is the chief constituent of the salt scale, although no chemical explanation of this production of oxygen gas was forthcoming. Mr. Bale now writes that there is no doubt that the gas evolved from the scale in water is oxygen or a gas rich in oxygen, as it gives all the reactions for oxygen. The reaction, he remarks, by which the oxygen is evolved is no ordinary one, for the evolution is not constant or continuous. It is greatest in the sunlight and ceases often on a dark day, to commence again on a bright one, and the reaction goes on slowly in this way for months when it apparently ceases. If the water is renewed, however, the reaction starts again; in other words, a small amount of the scale would seem to be capable of oxygenating a large amount of water. When the receptacle contains a large amount of mineral water in contact with a layer of pan scale oxygen gas appears to be given off indefinitely. On examining the water and the scale under the microscope the presence of infusoria was revealed. Scale that had been ignited no longer gave oxygen in contact with water. The conclusion seems to be that the evolution of oxygen is due to the presence of infusoria in the scale, but it is difficult to understand how living infusoria can survive the evaporating process in the pan. The infusoria, if present, must have attached themselves to the scale after it had been removed from the evaporating pans. The evolution of oxygen in this way is, at all events, a very interesting phenomenon, whatever the correct explanation of its formation may be.

## CHLORIDE OF SODIUM AND HEART DISEASE.

ACCORDING to an editorial article in the *Indian Medical Record* for May 28th the conclusions of R. Massalonga and G. Zambeli are that the chloride of sodium is a regulator of the humours, of osmotic pressure, of arterial pressure, and of the dehydration of the tissues, but is at the same time a factor in asystolic phenomena and the dropsy of cardiac disease; they have therefore practised the limitation of chlorides in the dietary of all cardiac cases for several years, and they find that this limitation of chlorides soon restores the equilibrium and arrests all unfavourable symptoms. They, however, insist upon the supplemental use of diuretics or heart tonics which accelerate the cure of such cases. The chloride-free diet itself acts as a diuretic as it helps the removal of the œdema which remains as an obstacle to the heart's action, which once thus freed increases its own energy and tends to re-regulate its own function. Widal is another fervent supporter of this chloride-free dietary. It has been noted with reference to the elimination of the chlorides, continues the writer, that it varies in direct proportion to the amount of physical signs and symptoms present, for when the cardiac lesion is not productive of distress its elimination is normal, whereas when dyspnœa or evening œdema supervenes the elimination of chlorides is found to be deficient. The good results obtained in cardiac cases with an exclusively milk diet will now find an explanation in the comparative poorness of milk in salt (1·50 to 1·80 grains (*sic*) per litre). According to the writer in the *Record* the average individual consumes by far too much salt but as long as his kidneys do not refuse to carry off the excess all goes well. As soon, however, as inadequacy in these organs takes place from any cause and the chloride of sodium is retained an excess of water is absorbed to hold it in solution. Then the trouble begins, for the salt does not remain in the blood; it must pass into the tissues and in its passage it carries the water into them and in this way a condition of œdema has to be dealt with. A dechloridated diet means that a food is supplied devoid of one of the necessary elements required in tissue metabolism, and as this demand must be supplied the surplus in the tissues is called upon to do the needful, and so in its repassage back into the blood for its redistribution it carries with it the water which it had attracted, and so comes the reduction or disappearance of the œdema. We have thought it worth while to produce the foregoing abstract from the columns of our contemporary, merely making a few verbal alterations for the sake of clearness as the English of the article savours of the East. The subject is certainly one that calls for attention. Many people imagine that salt is a prophylactic against ill-health and that they cannot well consume too much of it. No doubt the value of common or table salt as an aliment is considerable, and the robust who make blood easily and rapidly can afford to take it in large quantities without injury. With delicate people, however, especially those whose thoracic organs are easily deranged, the habitual ingestion of more salt than is required by the system is sure to produce an ill-effect. The amount of salt that can be consumed daily with safety depends upon the constitution of the individual; it cannot be set down in precise terms like the dose of a quack nostrum.

## EPIDEMIC CEREBRO-SPINAL FEVER.

WE have already referred to the continued presence of the meningococcus in persons who had recovered from the clinical symptoms as observed by Dr. R. M. Buchanan of Glasgow and the same peculiarity has been noticed by others. At a recent meeting of a medical society in Heidelberg Dr. Krayer said that he had been able to cultivate the meningococcus from cerebro-spinal fluid in which it was not discoverable with the microscope; in one case the organism continued visible for 170 days. In Scotland during the week ended July 20th there were 7 deaths from this cause registered in Glasgow, 3 in Edinburgh, and 1 in Leith. In Glasgow the weekly report issued on July 19th showed that there were at that time 56 cases under treatment.

## RATS AND PLAGUE IN INDIA.

THE Trustees of the Indian Museum in Calcutta have published in pamphlet form at the price of 8 annas (about 7*d.*) a number of interesting particulars bearing on the identification of rats connected with plague in India. The pamphlet has been written by Dr. W. C. Hossack of the Plague Department, Calcutta, and in an introductory note Mr. N. Annandale, superintendent of the museum, states that a more detailed account by the same writer of the species occurring in Calcutta will be issued shortly by the Trustees in the first volume of the "Memoirs of the Indian Museum." Dr. Hossack says that the external differences between the various kinds of rats' are so slight that, to one who is not an expert, specimens belonging to entirely different genera may present an apparently identical appearance. The most important body measurements are the lengths of the head and body, the tail, the hind feet, and the ears. These lengths are most accurately taken by sliding callipers, but a pair of compasses and a measuring rule or tape may also be used. The length of the head and body is taken from the tip of the nose, excluding hairs, to the centre of the vent. The length of the tail is taken from the centre of the vent to the tip of the tail, excluding hair. Minute directions are given for the preparation of skins and skulls, for the labelling of specimens, and for describing the colour of the animals according to Ridgway's scale of colours for the use of naturalists. Spirit is recommended as the most trustworthy medium in which to preserve specimens if skins cannot for any reason be prepared, but no time must be lost after the animal has been killed, or putrefaction may proceed even in the spirit. Carbolic acid may be added to the spirit in the strength of one ounce to the pint. Formalin may be used, but in India weak solutions are useless; the solution should never be under 15 per cent. strength of formalin—i.e., 6 per cent. strength of formic aldehyde, as formalin is a 40 per cent. solution of the latter. Dr. Hossack describes seven kinds of rat which are of importance in connexion with plague, two of them being mus rattus (the

English black rat) and mus decumanus (the English brown rat). Sketches of the heads and soles of the hind feet of several rats are shown for the purpose of better identification.

# THE PLAGUE IN INDIA:

## REPORTS ISSUED BY THE ADVISORY COMMITTEE APPOINTED BY THE SECRETARY OF STATE FOR INDIA, THE ROYAL SOCIETY, AND THE LISTER INSTITUTE OF PREVENTIVE MEDICINE.

THE Secretary of State for India early in 1905 placed the direction of an inquiry concerning some of the unsettled problems of plague with an Advisory Committee appointed by the India Office, the Royal Society, and the Lister Institute, acting in conjunction. The administration of an annual grant of money was also placed at the disposal of the Advisory Committee, which consisted of Surgeon-General A. M. Branfoot, C.I.E., as chairman and representing the Secretary of State for India; the late Sir Michael Foster, F.R.S., and Dr. J. Rose Bradford, F.R.S., representing the Royal Society; and Colonel David Bruce, C.B., F.R.S., and Dr. C. J. Martin, F.R.S., representing the Lister Institute.

The Advisory Committee proceeded to elect a working commission consisting of the following: Major George Lamb, I.M.S., Captain William Glen Liston, I.M.S., Dr. G. F. Petrie, Mr. Sydney Rowland, Captain T. H. Gloster, I.M.S., Dr. M. Kasava Pai, Mr. V. L. Manker, Mr. P. S. Ramachandrier, and Mr. C. R. Avari. At the end of March, 1905, Dr. Martin started for India to organise the labours of the Commission, leaving six months later, when Major Lamb became the director of the work. In 1906[1] the first report of the work of the Commission was issued and the historical introduction was published in our columns. This was followed by sections dealing with the transference of plague by fleas, bugs, and other insects and, further, extremely interesting sections have now been issued dealing in the main with the connexion of rats with the spread of plague. We proceed to give a digest of these valuable reports:—

### I.[2]—EXPERIMENTS UPON THE TRANSMISSION OF PLAGUE BY FLEAS.

I. (ii.). *Section A.—Transference from rat to rat by proximity without contact in the presence of fleas.*—This group of experiments were in repetition of those of Gauthier and Raybaud (1902–03) and showed that in the common Indian rat flea (Pulex cheopis, Rothschild) plague may be spread from an infected rat to a healthy rat confined in close proximity, but in such a way as to prevent contact with the body or excreta of the infected rat. This condition was obtained by a suitable arrangement of twin wire cages standing in a glass box which was covered with fine muslin; each cage stood in a separate tray, so that there could be no mixing of excreta from the two animals. Into one cage (X) was placed a rat inoculated with a plague culture obtained from the spleen of an infected guinea-pig, along with some 20 fleas obtained from Bombay rats. As soon as this rat was found dead a healthy rat was placed in the other cage (Y). The dead rat was left in the X cage until from 8 to 12 hours later, when it was removed and examined for septicæmia. If no plague bacilli were found in the blood microscopically the experiment was abandoned. If the healthy rat died a careful post-mortem examination was made, the position of the buboes was noted, and smears from the buboes, spleen, and heart's blood were examined. Cultures were made from the liver and heart's blood and tested on rats. All rats which had not died within three weeks of being placed in the Y cages were killed with chloroform and examined to make certain that they were not suffering from a subacute or chronic form of plague.

In Series 1 wild Bombay rats were used in both cages. The experiments were made in October and November—i.e., before the commencement of the epizootic or epidemic plague in Bombay. In all the 11 tests the healthy rat did not contract plague. It is noted that many Bombay rats are immune to small doses of bacillus pestis, and further that the tins under the cages did not in this series contain sand and that the consequent wetting of them with urine caused the fleas to die out quickly. It is considered that these factors vitiated the results of this series. In Series 2 of 16 experiments the inoculated rat was a Bombay rat, while the healthy rat was in all cases a white rat imported from England and kept isolated. No case of plague had occurred in these rats. In 11 out of 16 experiments (69 per cent.) the healthy rat contracted plague. The full details of these experiments are given. No explanation of the negative experiments is suggested. In Series 3 Bombay rats were used in both cages and some of these rats may be considered to have been immune. They were caught in the houses and gullies of the city and isolated before use to prove their freedom from infection. In 50 complete experiments dealing with 35 house rats (Mus rattus) and 15 gully rats (Mus decumanus), 13 of the former (i.e., 37 per cent.) and six of the latter (i.e., 40 per cent.) developed plague. The report, assuming that 40 per cent. of Bombay rats are immune to the cutaneous injection of small doses of bacillus pestis, makes the percentage of positive results with susceptible animals to be 61 per cent., which approaches that of Series 2. "On 30 occasions, therefore, has a healthy rat experimentally contracted plague in sequence to living in the neighbourhood of a plague-infected rat under circumstances which prevented the healthy rat coming in contact with either the body or excreta of the plague-infected rat. In all cases a fairly abundant supply of fleas was present; these could pass freely between the two rats and, except for 'aerial contagia,' formed the only apparent means of communication between the animals. The presumption is that the plague was transferred from the sick to the healthy rat by the agency of the fleas." It was found impossible to perform control experiments in order to exclude aerial infection in the absence of fleas as this latter condition could not be certainly obtained.

*Section B.*—The next experiments dealt with the *transference of plague from rat to rat by the transference of fleas.* In these, Bombay rats were inoculated with a virulent culture of bacillus pestis, placed separately in flea-proof cages and supplied with rat fleas. In the event of any of these rats dying from plague and of their blood containing any bacillus on microscopical examination, the fleas were caught and transferred to a fresh flea-proof cage in which was placed a healthy rat. The flea-supply for each healthy rat was always obtained from two or more septicæmic rats. The same observations were made upon all the uninoculated rats that died as in the first series described above. All rats that had not died within three weeks were killed and examined. In Series 4 fleas collected from rats dead from the plague were transferred to healthy English white rats. In 8 out of 13 (61 per cent.) completed experiments the rats which received the fleas died from plague, while in five they remained healthy. The experiments are described in detail in the report. In Series 5 fleas were transferred from Bombay rats dead from septicæmic plague to healthy Bombay rats. Out of 25 completed experiments, 19 with Mus rattus and six with Mus decumanus, nine of the former species (i.e., 47 per cent.) and four of the latter (i.e., 66 per cent.) contracted plague. Allowing again 40 per cent. of Bombay rats to be immune to such a method of infection the percentage of positive results is raised to 87 per cent. In this section, accordingly, we read that "in 21 experiments out of 38 healthy rats living in flea-proof cages have contracted plague in sequence to receiving fleas collected from rats dead or dying of septicæmic plague in another cage. The possibility of the rat flea (P. cheopis) carrying plague from one rat to another is therefore demonstrated clearly."

I. (iii.). This deals with the experimental production of epidemics amongst guinea-pigs. In this research a highly ingenious series of small "go-downs" or cabins was designed by Lieutenant-Colonel W. B. Bannerman and Captain Liston and built under their supervision. They were of brick and mortar, with concrete floors on the top of a high plinth which were impervious to rats, and in each cabin was an inspection chamber separated by a screen of wire netting from an inner chamber for the animals under experiment, which chamber was separated from the roof by one or two layers of wire netting in the several huts. These also varied in the amount of light that was admitted to them, but the chief point of difference was in the construction of the roofs. In two these were made of ordinary country tiles, which were readily pervious to wild rats, two were made of Mangalore tiles, which were less pervious, and two of corrugated iron, which were entirely impervious to rats.

---

[1] Journal of Hygiene, vol. vi., No. 4, September, 1906.

[2] The historical introduction (Part I.) has already been published in our columns, *vide* THE LANCET, Nov. 3rd, 1906, p. 1233.

In the first four huts it was intended, and it happened, that wild rats should enter through, and build nests in, the roof, but they had no direct contact with the experimental animals, being separated from them by the wire ceiling built in under the roof of the hut. These differences had only one effect. The supply of fleas reaching the animals in the huts varied in accordance with the number of wild rats above them and the amount of light admitted to the huts, darkness being the more favourable condition for fleas. It was attempted to keep the two huts with impervious roofs absolutely free from fleas, but this was not found possible. The experiments were elaborate and ingeniously devised, and their course was constantly controlled by "flea-censuses" repeatedly held on animals taken from the various huts; these were accomplished by chloroforming the animals, and incidentally the fleas they harboured, combing out the latter and counting them. Unexceptionable bacteriological evidence was obtained of the cause of death of every animal that died. The animals employed in the observations were chiefly guinea-pigs and the experiments were divided into six series. The method adopted was to place together in the same hut healthy and inoculated guinea-pigs, the variable quantity in the experiments being the flea-supply from the roof, as we have already indicated. The experiments in some cases lasted nearly two months and the results of the various series are thus summarised in the report after a description of the experiments in detail.

*Series A* (six experiments) showed that epidemic plague did not occur when healthy guinea-pigs lived in close contact with plague-infected guinea-pigs under conditions where access of fleas was prevented, but that under otherwise similar conditions plague spread among the healthy animals in places where fleas were abundantly present. It is noteworthy that the huts were not cleaned out during the whole time (one or two months) occupied by these experiments and the animals took their food from the floor which was contaminated by the excreta of their sick companions. In these circumstances, although an occasional guinea-pig succumbed to plague, the disease did not spread epidemically in the absence of a flea-supply.

*Series B* consisted in one experiment in which the transference of fleas from guinea-pigs dying from plague started an epidemic in an uninfected hut which, by the introduction of fresh fleas, was maintained.

*Series C* (three experiments) showed that when an epidemic has occurred among a number of guinea-pigs the contagion still remains in the place and is effective in proportion as the animals are accessible to, and found to be infested with, fleas.

*Series D* was a single experiment and showed that fleas removed from infected guinea-pigs and isolated in test-tubes can convey plague to healthy animals on which they are allowed to feed.

*Series E and F* were also single experiments. *E* showed that plague is not conveyed from mother to offspring in the absence of fleas. In *F* two monkeys were used and one was exposed without harm in a plague-infected cage in which it was protected from fleas by a layer of "tangle-foot" (i.e., a sort of sticky fly-paper) which surrounded it. Another monkey, not protected from fleas, succumbed to plague.

Other general conclusions of these experiments are thus summarised: 1. If fleas are present then the epizootic once started spreads from animal to animal, the rate of progress being in proportion to the number of fleas present. 2. An epizootic of plague may start without direct contact of healthy animal and infected animal. 3. The conclusions of Part II. that the rat flea can convey plague from rat to rat are confirmed. 4. Infection can occur without any contact with contaminated soil, as in certain of the experiments the animals were raised in cages from the ground. 5. Aerial infection is excluded, as guinea-pigs suspended in a cage two feet above the floor did not contract the disease, whilst in the same hut the animals running about became infected.

In these experiments the buboes developed in the infected animals in the following situations.

Bubo in one situation, 162 (90·5 per cent.): neck, 144 (88·9 per cent.); groin, 15 (9·3 per cent.); and axilla, 3 (1·8 per cent.).

Buboes in two situations, 13 (7·2 per cent.): neck and groin, 10 (77 per cent.); and neck and axilla, 3 (23 per cent.).

Buboes in three situations, 2 (1·1 per cent.)—i.e., axilla, neck, and groin, 2 (100 per cent.).

No bubo, 2 (1·1 per cent.).

I. (iv.). *Experiments in Plague Houses in Bombay.*—The next series of experiments was carried out in houses infected with plague in Bombay. They were made in rooms in which two or more people were suffering from the disease or in which rats suffering from plague or dead had been discovered. The report points out that these conditions did not render it absolutely certain that the rooms were infected, as the patients might have contracted the infection elsewhere and some of the rats might have died from poison and not plague. The method adopted was the letting loose of guinea-pigs under varying conditions in the rooms, followed by an unexceptionably complete bacteriological investigation into the cause of death of all those that succumbed. The experiments are described in three groups of two series each.

In *Group 1* guinea-pigs were allowed to run free from about 18 to 40 hours in the selected houses, a technique that was devised by Captain Liston. Following the results obtained in the other series of experiments special attention was paid to the number of fleas found on the animals, which were, moreover, carefully differentiated as human, cat, or rat fleas. In this group Series 1 dealt with guinea-pigs running free in plague houses that had not been disinfected; these animals were found to act as good traps for fleas, on an average 20 per room being obtained, most of them rat fleas. 42 experiments were done and in 12—i.e., 29 per cent.—those left in from 18 to 40 hours contracted plague, the bubo being situated generally in the cervical region. Of the 18 experiments in which more than 20 fleas were obtained 50 per cent. gave similar positive results. In Series 2, 31 observations were made in a similar manner in houses that had been previously disinfected, chiefly by washing the floors and walls with an acid solution of perchloride of mercury of strength 1 in 750; in a few burning sulphur was employed. The points observed were again the number of fleas caught on the guinea-pigs and the number that contracted plague. The former numbers were very large, the average being 40 per house. In nine houses the animals died from plague—i.e., in 29 per cent. of the experiments, this being the same number as was obtained in the non-disinfected houses. Of 13 cases in which more than 20 fleas were caught 38 per cent. gave positive results. The buboes were chiefly cervical. It has been abundantly proved that the disinfection processes kill all plague bacilli on the floors and walls, but they do not affect the flea inhabitants of the house; these observations afford strong support to the contention that fleas are the agents in spreading the disease.

In *Group 2* fleas obtained in plague houses were fed upon rats or guinea-pigs in flea-proof cages in the laboratory. In Series 3 the fleas were caught on plague-infected rats caught in the houses; three experiments were done, and in each case plague was transmitted to the animals in the laboratory. In Series 4 the fleas were caught on guinea-pigs and other animals which had been left for some hours in the plague houses; in 8 out of 40 experiments the laboratory animals which were supplied with these fleas contracted the disease.

In *Group 3* the experiments were contrived so that whilst all the experimental animals were protected from both floor and wild-rat infection half were protected from fleas whilst the other half were not. For each experiment a pair of animals was thus used. In Series 5, 42 experiments were made in which pairs of caged guinea-pigs, one protected from fleas by means of a fine wire gauze curtain, and the other not so protected, were placed side by side in a plague house. Both were equally subject to aerial infection. No protected animal caught plague, whilst four of the unprotected animals died from it, developing cervical buboes; many fleas were caught on them and none on the protected animals. Series 6 was performed with pairs of animals in suitable cages, one of which was surrounded with "tangle-foot" in order to prevent fleas from gaining access to it, and the other with sand which gave no such protection. It was found that no animal protected by a sufficiently broad layer of "tangle-foot" contracted plague, but 24 per cent. of the control animals did so. Out of 247 fleas caught on the "tangle-foot" 60 per cent. were human, 34 per cent. were rat, and 6 per cent. were cat fleas. Bacilli resembling bacillus pestis were demonstrated in the stomach contents of one out of 85 human fleas dissected, and of 23 out of 77 rat fleas. Tables are given in the report with full details of all the experiments done in this part of the investigation.

II.—The second paper in the report is a Note on the Species of Fleas found upon Rats, Mus rattus and Mus decumanus, in different parts of the world, and upon some variations in the proportion of each species in different localities, by the Hon. N. Charles Rothschild, M.A., F.L.S.

III.—This paper is a careful and excellently illustrated description of the Physiological Anatomy of the Mouth Parts and Alimentary Canal of the Indian Rat Flea (Pulex cheopis, Rothschild).

IV.—This paper describes an experiment made to discover the Effect upon Virulence of the Passage of Bacillus Pestis through Rats, by subcutaneous inoculation of infected spleen pulp from one to another, without intermediate culture; this was done to test a statement that such a passage of infection was a matter of great difficulty, and that the organism loses virulence in the bodies of rats, an intermediate host being necessary for the maintenance of an epizootic. This statement is opposed by the result of the experiment, which gave no evidence that the passage of plague from rat to rat is accompanied by any decrease of virulence. 26 such passages were effected without recourse to artificial media. Evidence was, however, obtained of the varying susceptibility of the Bombay rat.

V.—This deals with a variation of the preceding experiment, the infected spleen pulp being inoculated cutaneously, after scarification of the abdominal skin (in a manner similar to ordinary "vaccination"). It was found that a large percentage of Bombay rats are immune to this method of inoculation. Out of 580 rats 239 died from plague, whilst 341 were alive and well after 14 days—that is, 50 per cent. were immune to this method. No alteration in virulence was noted.

VI.—A Note on the Immunity of Bombay Rats to the Subcutaneous Injection of Plague Cultures, dealing with two series of experiments made during 1904 and 1906 respectively. They prove that at the latter period the Bombay rat was no more susceptible to plague than at the former.

VII.—This paper is on the Infectivity of Floors grossly Contaminated with Cultures of Bacillus Pestis. The floors used in the experiments were of two sorts: *(a)* of ordinary cow-dung plastered, when moist, on the top of earth which had previously been beaten down; and *(b)* of "chunam," which is a mixture of sand and lime, put down moist and allowed to set. The report thus summarises the results: (1) Floors of cow-dung grossly contaminated with bacillus pestis remain infective for 48 hours, the infectivity being tested by rubbing scrapings into susceptible animals; (2) floors of "chunam" similarly contaminated do not remain infective even for 24 hours; (3) floors of cow-dung similarly contaminated remained infective for 12 hours but not for 24 hours to susceptible animals which were allowed to run about freely on them; and (4) under similar conditions floors of "chunam" remained infective for six but not for 12 hours.

VIII.—This section is on the Number of Plague Bacilli in the Blood, Urine, and Fæces respectively of Rats which had Died from Plague. It is thus summarised. "The blood of plague-infected rats may contain an enormous number of plague bacilli, even as many as 100,000,000 per cubic centimetre having been found before death. On the other hand, rats occasionally die from plague with little or no septicæmia. An insect sucking the blood of most rats shortly before death would imbibe a large number of bacilli. While the blood of a rat may have so many bacilli the urine may have none at all, or at least less than 10 per cubic centimetre. Plague bacilli were discovered in the urine in 29 per cent. of the cases. When the urine does contain plague bacilli they are always present in much fewer numbers than in the blood. The fæces of rats dead of plague, the blood of which contained abundant bacteria, are not highly infective and would appear to play little part in spreading the epizootic."

IX.—This paper deals with the Quantitative Estimation of the Septicæmia in Human Plague. The results of the investigation on which it was founded are as follows. 74 examinations of specimens of the blood from 28 patients were made. Bacillus pest's was found in 16 fatal cases. It was not found in seven fatal cases nor in five cases that ended in recovery. It is further noted that microscopic examination of the blood cannot be regarded as a trustworthy criterion of the degree of septicæmia. This may be present, however, at a comparatively early stage of the disease and for a considerable number of hours before death, and the septicæmia may be of an irregular or fluctuating type.

X.—The last investigation with which this report deals is on the important epidemiological point of the Existence of Chronic Plague in Rats in Localities where Plague is Endemic. During one month 1800 rats were caught alive in two villages where plague has recurred annually for three years without discoverable reinfection, but at the time the rats were caught, with one exception, there was no active plague in the villages. In seven of the rats, although they all seemed healthy when alive, chronic abscesses were found in the abdomen from which bacillus pestis was in each case cultivated. The situation of the lesions seems to point to an intestinal infection. The organs were apparently normal and there was no emaciation. Of the animals inoculated directly from, and with subcultures of, the abscesses only one survived.

The next series of reports are in continuation of those just summarised and previously published in the *Journal of Hygiene.* They are published in the same journal[3] and they contain the results of observations and experiments made in the laboratory. The following papers are now issued:—

XI. *On the diagnosis of natural rat plague.*—During 16 months' work the Commission examined about 150,000 rats, of which 19,000 proved to be plague-infected. The post-mortem records of 4000 of these plague rats have been carefully analysed. The writers consider that the most important naked-eye signs by which plague may be identified are: the presence of a bubo (present in 85 per cent.); the presence of general subcutaneous congestion, with hæmorrhages both under the skin and in the organs; a "granular" liver in which the surface of the organ is dotted over with minute white or grey specks; and an abundant clear pleural effusion. The size and appearance of the spleen were found to be variable and of subsidiary diagnostic import. In the earlier part of the work great importance was attached to microscopical examination of smears of the blood and organs. Subsequent experience, however, coupled with experiments with inoculated and normal rats carefully devised to test the skill of the examiners, convinced the writers that naked-eye examination by an experienced observer is more satisfactory for purposes of diagnosis than microscopical examination alone. Naturally in isolated cases both methods must be employed, but the results clearly show that the omission of the routine microscopical examination of every rat in an investigation conducted on a large scale does not necessarily impair the accuracy of the work, while the saving of labour is, of course, very great. The bubo is shown to be the most important structure to examine microscopically. Thus out of 1000 plague-infected rats with buboes plague bacilli were by microscopical examination found in the bubo of 991, in the spleen of 901, and in the heart-blood in only 375. The inoculation of suspected material upon the shaven abdomen of the guinea-pig has proved of the greatest value for diagnosis; the method appears to fail only in about 2 per cent. of fresh, and about 10 per cent. of putrid, rats. In this connexion the writers point out that the bacilli found in naturally infected rats are fully virulent, 62 per cent. of the inoculated animals dying from acute plague in five days or less. No disease of the rat was met which caused any material difficulty in diagnosis.

XII. *The pathological histology of the spleen and liver in spontaneous rat plague* has been examined by Dr. J. C. G. Ledingham of the Lister Institute in material collected by the Commission in Bombay. In the spleen the incursion of bacillary swarms produces in the early stages extensive hæmorrhages, congestion of the pulp sinuses, and perinodal areas of necrosis. In later cases definite abscess formation occurs and is accompanied by extensive reaction on the part of the plasma cells which form a barricade separating the lymphoid tissue of the node from the necrotic zone. The bacilli are very rarely found in the interior of the nodes, yet karyorrhexis of the nodal cells is frequently far advanced through a toxic action. In the liver focal necroses may be so numerous that little healthy liver tissue remains. Bacilli are nearly always found in the central capillaries of these foci and actual bacillary embolism was frequently noticed. In some cases no free bacilli were demonstrable, all the organisms having been taken up by endothelial cells which appear to be largely responsible for the removal of the bacilli. The writer also notes the occurrence of giant cells of Langhans' type in the neighbourhood of necrotic foci.

XIII. *Transmission of plague by feeding rats with infected material.*—During the last ten years in which plague has been experimentally investigated much work has been done with the view of settling the questions : (1) as to whether it was possible to produce the disease in animals by feeding, and (2) as to whether this method of transmission played an important part in the epizootic or epidemic spread of the disease. The Indian Plague Commission (1901) pointed out that while three workers in India—namely, Gibson, Hankin, and Simond—had failed to infect rats by means of feeding, both the German and Austrian Plague Commissions had been able to give the disease to animals by this method. Kolle (1901), Kister and Schumacher (1905), Berestneff (1906), and Klein (1906) also successfully conveyed plague to rats by feeding them with infective material.

---

[3] Journal of Hygiene vol. vii., No. 3, 1907, pp. 324–476.

The experiments carried out by the present Commission may be briefly summarised as follows : 415 wild Bombay rats (Mus rattus and Mus decumanus) were given one meal consisting of about one-eighth of the viscera of a rat or guinea-pig dead from acute plague ; 16 per cent. died within five days from acute plague, and in all 21 per cent. were infected. In comparison with these animals a series of rats (Mus rattus) caught on ships in Bombay, and which presumably had not experienced any epidemic of plague, were fed in the same way and 44 per cent. were infected. A further series of wild Bombay rats were fed on the whole carcasses of dead plague rats—i.e., including bone and other hard material—and 38 per cent. were infected. Similar experiments were also made in the Punjab with Mus rattus : of 28 animals which each received one half of the liver and spleen of a plague rat, 19 (68 per cent.) died all from acute plague in five days.

The writers direct especial attention to the post-mortem appearances of the rats thus infected by feeding. These differed markedly from those seen in naturally infected rats in that subcutaneous hæmorrhages were uncommon, the intestines were congested with hæmorrhages and ulceration of Peyer's patches, and three-quarters of the animals with buboes had mesenteric buboes which do not occur in naturally infected rats. These observations afford very strong evidence that rats in nature are not infected by feeding as has been often surmised. The paper concludes with a record of experiments, in which 194 rats were fed with urine from 35 cases of acute human plague ; none of the animals became infected.

XIV. *On the significance of the localisation of the primary bubo in animals infected with plague in nature.*—Almost all observers are agreed in the opinion that the primary bubo develops in the glands in connexion with those lymphatics by way of which the plague bacillus has entered the body. Hunter (1904–06), on the other hand, holds that the primary bubo is merely an enlargement of a group of glands in the course of an acute septicæmic disease and is no indication of the path by which infection has taken place. In the present report experiments are detailed showing that the primary bubo develops in those groups of glands which are in direct lymphatic connexion with the skin area through which the plague bacillus gains an entrance into the body. Analysis of the records of a large number of animals infected naturally and in the laboratory gave the following results as to the localisation of buboes. Of rats found infected with plague in nature in the plague season in Bombay, in the off-plague season in Bombay, and in the Punjab villages, 72, 73, and 57 per cent. had cervical buboes and none had mesenteric buboes ; three series of rats infected in the laboratory by the transmission of infected fleas showed cervical buboes in 67, 50, and 61 per cent. and no mesenteric buboes ; while of rats infected by feeding only 36 per cent. showed cervical buboes and 72 per cent. had mesenteric buboes. The following table summarises these observations as shortly as possible :—

*Table showing the Percentage Frequency of Buboes in Different Parts.*

| — | Naturally infected. | Infected by fleas. | Infected by feeding. |
|---|---|---|---|
| Rats examined ... | 5188 | 117 | 119 |
| Rats without buboes | 16 per cent. | 18 per cent. | 8 per cent. |
| Cervical bubo ... ... | 72 ,, | 61 ,, | 36 ,, |
| Axillary ,, ... ... | 23 ,, | 22 ,, | 1 ,, |
| Inguinal ,, ... ... | 18 ,, | 35 ,, | 1 ,, |
| Mesenteric ,, ... ... | 0 ,, | 0 ,, | 72·5 ,, |

The writers conclude, therefore, that *naturally infected rats are not infected by feeding* and that these results afford additional evidence that they are infected by the agency of fleas. A similar series of analyses shows that the distribution of buboes in guinea-pigs artificially infected by fleas is identical with the distribution in those animals which become infected in sequence to being placed for a few hours in plague-infected houses in Bombay.

XV. *Further observations on the transmission of plague by fleas, with especial reference to the fate of the plague bacillus in the body of the rat flea (Pulex cheopis).*—It was previously shown by the writers[4] that plague may be transferred from rat to rat by the transference of fleas from a septicæmic to a healthy animal. In the present communication the following questions are dealt with :—

1. The fate of the plague bacillus in the body of the rat flea.
2. Whether a single rat flea can transmit the infection.
3. Whether both male and female rat fleas can transmit the infection.
4. Whether other species of fleas can transmit the infection.
5. The mechanism by which the flea infects a healthy animal.

The results of the investigation of these points may be summarised thus :—

1. The average capacity of a rat flea's stomach is approximately 0·5 cubic millimetre. On this basis a flea imbibing the blood of a plague rat showing a good septicæmia might take as many as 5000 germs into its stomach.
2. Multiplication of the plague bacillus takes place in the stomach of the rat flea.
3. The approximate proportion of fleas in the stomach of which multiplication of plague bacilli takes place has been determined and it has been shown that this proportion varies with the season of the year, being six times greater in the epidemic season than in the non-epidemic season.
4. Plague bacilli are present in the rectum and fæces of fleas taken from plague rats and such fæces are infective to guinea-pigs both by cutaneous and by subcutaneous inoculation.
5. On rare occasions plague bacilli have been found in the œsophagus, but never in any other region of the body, such as the body cavity or salivary glands.
6. During the plague season fleas might remain infective for 15 days after imbibing infective blood, but during the non-epidemic season no animal was infective after the seventh day.
7. A single rat flea may transmit the disease.
8. Both male and female rat fleas can transmit the infection.
9. Experimenting with cat fleas (Pulex felis) and human fleas (Pulex irritans) 27 experiments with the former were unsuccessful, and out of 37 experiments with the latter three successes were obtained. Two experiments were made with Ceratophyllus fasciatus ; both were successful. Multiplication of the plague bacillus takes place in the stomach of the human flea.
10. The plague bacillus has never been seen in the body cavity or in the salivary glands of infected fleas.

Evidence has been obtained to show that the bite of a healthy flea affords a sufficient avenue for infection by septicæmic blood if it is spread upon the bitten part. No evidence has been obtained in favour of infection by contaminated mouth parts or regurgitation from the stomach, but the possibility of infection by such means cannot be excluded.

XVI. *Experimental production of plague epidemics among animals.*—We have summarised above several series of experiments which had as their object the determination of the relative importance of the Indian rat flea, Pulex cheopis, and of actual close contact in the absence of fleas in the dissemination of plague from animal to animal. These observations were carried out in a series of small go-downs or cabins which were built especially for the purpose. The experiments recorded in the second report are a continuation of those already published. They were carried out during the off-plague season of 1906 and the plague season of 1907. In the first paper the structure of the go-downs was described in detail, but it may be repeated that the essential difference between them lies in the structure of the roofs. The roofs of four of the go-downs are tiled with material which offers protection and shelter to the wild rat of Bombay ; the flea supply in the interior is therefore more or less abundant. The roofs of the two remaining go-downs are constructed of

---

[4] Ibid., vol. vi., p. 446.

"reinforced concrete"; in consequence of this these go-downs remained absolutely free from fleas, so that a number of clean contact experiments were obtained.

Five guinea-pigs inoculated with plague were confined in one of the go-downs with 25 healthy animals. It is shown that the healthy animals never contract plague in the absence of fleas, though living, in some instances for several weeks, in close contact with plague-infected animals. In the huts which were not flea-proof the epidemics of plague were shown to progress differently at different seasons of the year. In the height of the prevalence of epidemic plague the progress was very rapid, while in the off-plague season the infection travelled more slowly through the healthy guinea-pigs and in some cases killed only a portion of them. It is shown that the progress of the epidemic among the guinea-pigs is proportional to the abundance of fleas and that the explanation of its seasonal variation is probably to be found in the effect of seasonal influences on the prevalence of these insects. Another series of experiments shows that in go-downs containing plenty of fleas animals do not contract plague if they are protected by being suspended in mid-air or by a cage of wire gauze impervious to fleas.

XVII. *Experiments in plague houses in Bombay.*—In a paper published in the first report and summarised above there were detailed a number of observations which were carried out in plague houses. During the epidemic of 1907 these observations have been confirmed and amplified. Guinea-pigs were allowed to run about in plague-infected houses overnight; in 18 out of 100 experiments the animals subsequently died from plague. Fleas caught on guinea-pigs or rats in plague-infected houses were transferred to healthy guinea-pigs in flea-proof cages in the laboratory; in 34 experiments these animals died from plague in 14 instances (41 per cent.). By using guinea-pigs as flea-traps an estimate was made of the abundance of fleas in different houses. Houses proved to be plague-infected were found to yield 12 times as many fleas as houses which were not plague-infected and three times as many as those which were only suspected of being plague-infected. Of 130 fleas dissected 32 per cent. were found to contain abundant plague-like bacilli in their stomachs.

XVIII. *On the external anatomy of the Indian rat flea (Pulex cheopis) and its differentiation from some other common fleas.*—This paper gives a detailed account of the external anatomy of the rat flea, with two illustrative plates. A third plate shows the cat, human, and other fleas, and the points by which Pulex cheopis may be distinguished are dealt with. The writers consider that Pulex cheopis is identical with Pulex pallidus, Pulex murinus, Pulex philippinensis, and several other species which have been described.

XIX. *On the natural occurrence of chronic plague in rats.*—In continuation of a previous note the writers describe 45 cases of localised encapsuled abscesses containing virulent plague bacilli which they have met with in Mus rattus in the Punjab villages. In 27 instances these abscesses were in the situation of peripheral lymphatic glands and may probably be taken to represent the remains of buboes; these cases occurred chiefly during the period of the decline of the epizootic of acute plague. In the remainder, however, they were situated in the spleen (12), the mesentery (5), or the liver; and these animals were found in the interval between the epizootics. The rats were in all cases trapped alive and appeared to be healthy. In Bombay only one such case has been met with in 19,000 plague-infected rats, while in the Punjab these examples of chronic plague account for more than 10 per cent. of all rats found infected. While pointing out that these localised abscesses are the only place where plague bacilli are known to occur during the off-plague season in the Punjab, the writers can find no direct evidence that such a condition ever lights up into an acute septicæmia and, chiefly on anatomical grounds, express their doubts as to whether it can be a source of origin for the acute epizootic.

XX. *A note on man as a host of the Indian rat flea.*—The experiments described above, and since repeated with similar results, afford ample confirmation of the observation of Simond (1898) and of Gauthier and Raybaud (1902, 1903) that plague may be transmitted from rat to rat by the agency of rat fleas. The direct experiment to show that plague can be conveyed in the same way from rat to man can never be made, and the inferential transference of the results of the experiments on rats to the spread of human plague has been not a little opposed, notably by Galli-Valerio (1900, 1903), on the ground that rat fleas do not bite men. This may be true of the fleas (Ceratophyllus fasciatus and Ctenopsylla musculi) commonly found on rats in Western Europe, but Gauthier and Raybaud (1902, 1903) in Marseilles and Tidswell (1903) in Sydney obtained direct evidence to the contrary with regard to Pulex pallidus (= Pulex cheopis), and Liston (1905) found that Pulex cheopis in Bombay readily attacks man during the plague season. The present Commission has made many observations which show that Pulex cheopis will make use of man as a host and may be captured in large numbers on men in plague-infected houses.

One of the methods employed was the following. About 40 fleas, caught on wild Bombay rats, were placed in a wide-mouthed jar which had a little sand at the bottom. Twice daily a man's hand and forearm were introduced into the jar and left in for 15 minutes each time. Fleas which crawled up the forearm were gently pushed back before they could escape. It was observed that the fleas bit readily and the man himself was soon cognisant of the fact. About every ten days the sand was removed and fresh sand substituted, so that multiplication of the original fleas by breeding was excluded. Five experiments in all were done after this method with the following result.

*Experiment 1.*—One flea was found alive on the twenty-fourth day.

*Experiment 2.*—One flea was found alive on the ninth day. In this experiment the sand had not been washed and there was present a fine dust, which by blocking the tracheal openings was probably prejudicial to the lives of the fleas. They were often observed to be dusted over with this material.

*Experiment 3.*—One flea was found alive on the twenty-fifth day.

*Experiment 4.*—One flea was found alive on the twenty-fifth day.

*Experiment 5.*—One flea was found alive on the twenty-seventh day.

From the above experiments it is seen that it was possible to keep rat fleas alive for nearly four weeks by feeding them on human blood. There was a considerable mortality during this time, but the main facts stand out (*a*) that they fed readily on man and (*b*) that some of them were still alive after 25 days.

It may be mentioned that rat fleas kept in similar circumstances, but without food, never survived longer than one week.

The following observations, which were carried out in a building which was unusually severely stricken with plague, are also of interest in this connexion:—

1. April 17th.—40 fleas were caught on a man who went into one of the rooms for a short time. They were all Pulex irritans.
2. April 18th.—113 fleas were caught on a man who entered one of the rooms. The species were as follows: Pulex irritans, 55; Pulex cheopis, 51; and Pulex felis, 7.
3. April 19th.—76 fleas were caught on a man who entered one of the rooms for a short time. The species were as follows: Pulex irritans, 40; Pulex cheopis, 34; and Pulex felis, 2.
4. April 20th.—80 fleas were caught on a man who entered one of the rooms. The species were as follows: Pulex irritans, 18; Pulex cheopis, 60; and Pulex felis, 2.

Thus, in three out of four rooms of this chawl, which was badly infected, abundant rat fleas were taken on the legs of men who entered the rooms only for a short time.

The results of the analysis of the extensive epidemiological observations of the Commission in the villages of Bombay and the Punjab have still to appear.

---

PUBLIC HEALTH AND BACTERIOLOGICAL RESEARCH LABORATORY FOR WOMEN MEDICAL PRACTITIONERS.—The governing board of the Middlesex Hospital has added to the medical school a laboratory which will be devoted entirely to the use of women medical practitioners for obtaining instruction for the examinations for the diploma in public health and of women students generally for the purposes of research work in bacteriology and general pathology. The new laboratory, which is on premises in Mortimer-street adjoining the Middlesex Hospital, is fully equipped for 12 workers and will be under the charge of Mr. A. G. R. Foulerton, director of the bacteriological and public health department of the Middlesex Hospital Medical School, with Miss Hilda K. Whittingham, M.B. Lond., as demonstrator.

# DECENNIAL SUPPLEMENT FOR 1891-1900 TO THE SIXTY-FIFTH ANNUAL REPORT OF THE REGISTRAR-GENERAL.

## PART III.[1]

IN dealing with that portion of his report which treats of the causes chiefly responsible for English mortality in the decennium last ended Dr. Tatham has prepared an interesting table showing the balance of loss and gain in the fatality of certain diseases. From this we learn that, as compared with the preceding decennium, an average annual life saving of 540 persons has been achieved in each million of the population during the period referred to.

Among the causes of death specified in the table an increased mortality was shown in nine—viz., measles, influenza, diphtheria, diarrhœa, pneumonia, tuberculosis (other than tuberculous phthisis, peritonitis, and meningitis), cancer, diabetes mellitus, and Bright's disease. The remaining diseases, 15 in number, showed in each case a reduced mortality. The mortality from small-pox in 1891-1900 was lower than that of the 10 years immediately preceding by 80 per cent. But a mere statement of the recorded death-rate gives an imperfect idea of the extent to which a community has suffered from small-pox. Unfortunately, the returns under the Infectious Diseases Notification Acts of 1889 and 1899 are not yet sufficiently complete to measure the incidence of sickness from this disease throughout the country generally. They are, however, complete for the administrative county of London, where the Act for the compulsory notification of infectious diseases has been strictly enforced since 1890. The actual number of cases notified from time to time appears in Sir Shirley F. Murphy's returns which are published weekly by the Registrar-General. Our readers will remember that in the years 1893-95 London experienced a serious outburst of small-pox. In the then existing vaccinal condition of the community terrible suffering and loss of life would have followed had it not been for the prompt removal of first cases; but this removal, thanks to the coöperation of the Metropolitan Asylums Board, was secured in practically every case. Nevertheless, the recorded mortality, which in no single year exceeded 5 in 100,000, conveyed no adequate warning of the danger. In the metropolis the information concerning the vaccinal condition of the small-pox cases contrasts favourably with that in other parts of England; for whilst in London the proportion of cases reported without statement as to vaccinal protection amounted to not more than 30 per cent., it exceeded 70 per cent. in the provinces. In the ten years ended 1900 there were registered in London 432 deaths, against 3626, or about eight times that number, in extra-metropolitan England. In London the proportion of cases stated to have been vaccinated was 30 per cent.; in the provinces it was only 12 per cent. In the former area the unvaccinated cases are stated to have constituted 40 per cent. of the whole; in the latter area, 18 per cent. only.

In the present report an interesting account is given of the behaviour of fatal influenza in this country from the time of its first appearance in epidemic form some 18 years ago down to the present time. Until the year 1890 England had been practically free from influenza mortality for more than 30 years. The mortality directly attributed to this cause in the quinquennium ended 1889 averaged no more than 3 per 1,000,000 of the population. Towards the close of 1889, however, influenza invaded our ports from the continent and thenceforward it appears to have established a foothold in this country. In 1890, the first complete year of the epidemic, influenza was returned as the cause of death in 4523 instances; in the following year the deaths rose to 16,686, and in the next the number was 15,737. The mortality due to this cause averaged 361 per 1,000,000 in the ten-year period ended 1900. In no single year of the ten did the rate fall below 122 per 1,000,000, which was the proportion recorded in 1896. At all ages of both sexes the mortality from influenza in the recently ended decennium does not greatly differ from that of the epidemic years 1847 and 1848, but at ages from 15 to 65 years the disease seems to have been more fatal in the later than in the earlier period, whilst at ages below 15 and above 65 years the reverse appears to have been the case.

Among the diseases that showed increased prevalence in the decennial period under notice the most important from a public health point of view is diphtheria, the mortality from which affection showed an increase on the rate of the preceding decennium of not less than 72 cent. The actual incidence of this disease is now more accurately expressed by the mortality returned under the head of diphtheria than was formerly the case. Nevertheless, the mortality is still probably understated in the tables, for it is known that a considerable portion of the deaths ascribed to such conditions as "tonsillitis," "quinsy," "ulcerated throat," "catarrhal laryngitis," &c., are really diphtheritic in character. With the more general adoption of bacteriological methods of diagnosis it is probable that a still larger proportion of these deaths will be returned as diphtheritic. At any rate, it is satisfactory to learn that the mortality under every one of the indefinite headings just mentioned has steadily fallen in recent years. It is important to remember that the Royal College of Physicians of London has recently decided that the terms "membranous laryngitis" and "membranous croup" are not henceforth to be used as synonyms for diphtheria. Until the year 1855 diphtheria was not distinguished from scarlet fever in the returns of the Registrar-General. In 1861-70 there were registered in this country no fewer than 52,545 fatal cases of "croup," but only 39,454 of "diphtheria." If it be assumed that what is commonly called "croup" is a definite disease distinct alike from diphtheria and from spasm of the glottis, it is remarkable that, in spite of the enormous increase of the population, the deaths from "croup" should have fallen from an average of more than 5000 annually in 1851-60 to an annual average of fewer than 600 in the five-year period last ended. When the recorded mortality from diphtheria is combined with that from croup the age-incidence of that mortality in the earlier decennia tallies more nearly with the known incidence of diphtheria at the present day than would have been the case had the formerly predominant factor of croup been left out of account. At the present time the combined mortality from diphtheria and croup is lower than it was 40 years ago.

Enteric fever is one of the diseases the fatality of which has decreased in this country almost *pari passu* with the improvement of local sanitary conditions. Until the year 1868 this disease was grouped with typhus fever and with so-called simple continued fever under the heading "Fever." But in the latest edition of its nomenclature the Royal College of Physicians directs that the names "simple continued fever" and "febricula" should no longer be used. In order to afford graphic illustration of the incidence of enteric fever mortality since 1868 a chart has been prepared for this report showing the corrected death-rates in each of the 37 years elapsed since this disease was first differentiated from other continued fevers. From this chart we learn that the rate of mortality has fallen from 384 per 1,000,000 in the year 1869 to 89 per 1,000,000 in 1905. But although the chart shows a great reduction in the loss of life from this disease it is doubtful whether it fully expresses the amount of that reduction. For whereas in the first quinquennium after 1868 an annual average of 4250 deaths were attributed to simple continued fever, the deaths thus returned in the quinquennium ended 1900 were fewer than 130 annually. There is little doubt, says Dr. Tatham, that many of the deaths referred in 1869-73 to continued fever were really due to enteric fever and the age distribution of these cases tends to support this contention. If this be correct, it follows that in recent years the reduction in enteric fever mortality has been greater than that indicated by the chart.

Pneumonia is one of the important diseases the fatality of which has recently increased considerably. Far greater importance now attaches to the incidence of this disease from the circumstance of its known relation to insanitary surroundings. In the latest edition of its nomenclature the Royal College of Physicians classes lobar pneumonia as a definitely infectious disease and pathologists now generally regard all forms of pneumonia as infective, although the infecting organism is not always the same. In the course of the first three decennia of the past 40 years there appears to have been little change in the mortality ascribed to pneumonia, but in the decennium last ended the rates show a decided increase. Locality appears to influence very seriously the prevalence of fatal pneumonia, for whilst the mortality from this disease in the urban districts of England averages 1483 per 1,000,000 it does not exceed 849 per 1,000,000 in the rural districts. The disease is everywhere more fatal to the male sex than to the female. As a means of tracing the relation of season to pneumonia fatality the official records for extra-metropolitan England afford no assistance, but the method adopted by the Registrar-General of publishing weekly returns for London offers exceptional facilities for this purpose. Taking the average of the last five years, it appears that in the metropolis 62 per cent. of the deaths from this disease occur in the first and last quarters of the year, taken together, whilst in the remaining half of the year the proportion does not exceed 38 per cent. Another condition of great importance from a public health point of view is that which is known as "puerperal fever," a name disapproved by the Royal College of Physicians—the proper designation being "puerperal septicæmia" or "puerperal pyæmia." The mortality from puerperal fever and other accidents of childbirth has not varied greatly in the course of the last 40 years. In the decennium recently closed the rate was equal to 295 per 1,000,000 of the female population at all ages, married and unmarried together. Expressed in terms of registered births, the ratios in the last four decennia have been 4·69, 4·75, 4·73, and 5·09 per 1000 severally. The mortality was therefore somewhat higher in the recent ten-year period than in any of its three predecessors. This increase, however, is almost certainly due partly to improved certification and partly to the system of inquiry before referred to.

---

[1] Previous notices of this report appeared in THE LANCET of June 29th (p. 1798) and July 13th, 1907 (p. 105), respectively.

The report before us contains highly interesting references to the behaviour in recent years of certain other prevalent and very destructive diseases; more especially to the several forms of tuberculosis, to cancer, and to the vastly important subject of infantile mortality. In the present article no space remains for adequate notice of these subjects, but we hope to return to their consideration on a future occasion.

## THE NEW BUILDINGS OF ST. BARTHOLOMEW'S HOSPITAL.

ON July 23rd His Royal Highness the Prince of Wales opened the new departments for out-patients at St. Bartholomew's Hospital. The Prince, who is President of the hospital, was accompanied by the Princess and on arrival at the hospital at about 3.30 P.M. was received in the Great Hall by Lord Ludlow (the treasurer), the almoners, Dr. Norman Moore as senior physician, Mr. Harrison Cripps as senior surgeon, the matron, and the clerk. Their Royal Highnesses were conducted to the waiting hall of the new building where the band of the Honourable Artillery Company, which corps also furnished the guard of honour, was in attendance. Here, among others, were assembled the Lord Mayor of London and the Sheriffs, Sir R. Douglas Powell (President of the Royal College of Physicians of London), Sir J. C. Dimsdale, Alderman Sir Thomas Boor Crosby, the members of the medical and surgical staff, and Dr. T. W. Shore, dean of the Medical School.

Lord LUDLOW then addressed the Prince, pointing out how in 1324 Edward II., who before ascending the throne had been the first Prince of Wales, had confirmed the hospital in its property and privileges. The foundation-stone of the present buildings had been laid by His Majesty the King on July 6th, 1904. By the provision of these buildings not only would the out-patients be able to be treated more satisfactorily but also the junior officers of the hospital, the house physicians and surgeons who were in daily and nightly attendance on the patients, would be housed in a satisfactory manner. The treasurer concluded by asking his Royal Highness to declare the building open.

The PRINCE OF WALES, in reply, said: "As President of this ancient and celebrated hospital I have much pleasure in taking part in the ceremony of opening these new buildings, the foundation-stone of which was laid three years ago by the King, and I am glad that the Princess of Wales has accompanied me on what is an important occasion in the history of this institution. It is interesting to note how from the earliest days the British Sovereigns or their families have been personally associated with St. Bartholomew's, and I am proud to think that the presidency so long held by my father should have been continued in me after his accession to the Throne. We have good reason to congratulate ourselves upon the achievement which, thanks to the generous support of the public, we are able to inaugurate to-day, for the building will add greatly to the efficiency of the hospital and will afford the most perfect methods of observation and treatment for out-patients, and will at the same time provide suitable accommodation for those members of the medical staff who by day and night are in attendance on the patients. Better accommodation for the nurses still remains to be provided, and I wish all success to the fund for the erection of a nurses' home which has been started by Lady Ludlow, the wife of our treasurer. I trust that at no distant date this important addition may be carried out. The Princess and I sincerely thank you and all those who work for the well-being of the patients of this ancient and charitable foundation for the kindly sentiments to which your address gives expression, and I have now much pleasure in declaring this building open."

Mr. E. B. I'Anson, F.R.I.B.A., the architect of the new buildings, was presented to their Royal Highnesses and the ceremony of opening terminated.

The Princess of Wales had been elected as a governor of the hospital on June 27th, and the treasurer now asked Her Royal Highness if it were her pleasure to receive her charge. Her Royal Highness having expressed her willingness, the Clerk read the charge as follows:—

> May it please your Royal Highness.—Your Royal Highness having been elected and chosen a governor of St. Bartholomew's Hospital, it is your duty and charge to acquit yourself in that office with all faithfulness and sincerity, endeavouring that the affairs and business of the said hospital may be well ordered and managed, and promoting the weal and advantage of the poor wounded, sick, maimed, diseased persons harboured in the said hospital. To this end your Royal Highness is now admitted a governor of St. Bartholomew's Hospital.

The Prince and Princess of Wales inspected the new buildings, a short description of which was given in THE LANCET of July 9th, 1904, on the occasion of the laying of the foundation-stone, and after visiting Mark and President wards in the old buildings they left the hospital.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, July 25th, 1829.

### PATENT MEDICINE DUTIES AND INFORMERS.

*To the Editor of* THE LANCET.

SIR,—In accordance with the promise I gave you in my last, I now proceed to make a few observations on the "Medicine Stamp Act."

When an informer lays an information, the worthy clerks of the Stamp Office question him as to his name and address, but in a manner which, it is at once convincing enough to the hearer, there is little occasion for. When they make out a "good case," the plan pursued is, to summon the offender to the Court of Exchequer, on such a day, where he is to attend with his solicitor to defend the action, viz., "the Attorney General *versus* Yourself, under a fine of £100." This, Sir, is the puffing summons sent by the Solicitor of Stamps; puffing it may well be called, for it is never put into effect; it acts merely as an organ of terror to the affrighted defendant. Thus do these precious worthies bully and bluster. The defendant, thinking it would be madness to defend an action where the Attorney General is plaintiff, petitions the Commissioners of Stamps for a mitigation of the penalty, (£10), which he almost invariably obtains, to £4.

The following are some of the articles which must bear a stamp:—

1. All patent medicines, numbering 553;* and the apothecary may not sell any small quantity (though not of the original article) under the patent name, without a stamp.

2. No article must be vended to which is prefixed a label describing it to be a specific for any disease, provided the person so vending pretends to any secret science of preparing the same.

3. All lozenges sold with an intent to relieve pain, or remove any malady, excepting ginger and peppermint lozenges; but not those if they are recommended as specifics. All other articles of confectionary may be sold.

4. "The water clause."—Soda, Seidlitz water, and powders,

and indeed any effervescing draught or powder, sold under whatsoever name, or mixed in whatsoever manner.—This is the quibbling clause. An informer comes into your shop, and requests you to make him a dozen soda powders; on your proceeding to stamp them, he objects to it, and begins cursing the Government and stamps altogether, and swears he will not pay threepence for a stamp. I have known an apothecary, ignorant of this quibble, request permission to add a small quantity of magnesia to each powder, supposing this to take off the liability; after a little parleying the informer submits to this, and away he goes and lays an information.

Another quibble is that of coming into the shop and requesting you to give him a quantity of carbonated soda and water; when he has stirred a portion of the soda in the water, he asks for a little tartaric acid to make it pleasant. Having drunk this, the villain runs off to the Stamp Office, and swears you have sold him soda water.

There are many other quibbles which the apothecary must be aware of. I caution every one to be extremely watchful, for informers are ever on the alert. A plan for remedying these evils I will submit for your inspection next week, and am, Sir,

Yours truly,
J. F. C.

---

* This list may be purchased at Shaw's.

---

# VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8160 births and 3814 deaths were registered during the week ending July 20th. The annual rate of mortality, which had been equal to 12·5 and 12·3 per 1000 in the two previous weeks, was 12·4 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns, therefore, averaged 12·4 per 1000, the rate in London during the same period being 12·0. The lowest rates in the 76 towns last week were 4·5 in Reading, 4·9 in Burton-on-Trent, 5·7 in East Ham, and 5·9 in Willesden; the rates ranged upwards in the other towns to 17·7 in Liverpool, 18·5 in Merthyr Tydfil, 20·1 in Walsall, and 20·1 in Middlesbrough. The 3814 deaths in the 76 towns showed an increase of 40 over the number in the preceding week, and included 397 which were referred to the principal epidemic diseases, against 366 and 341 in the two preceding weeks; of these, 142 resulted from measles, 107 from whooping-cough, 65 from diarrhœa, 33 from scarlet fever, 31 from diphtheria, and 19 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Willesden, Halifax, Northampton, Hornsey, Rochdale, York, or in nine other of the 76 towns; the annual death-rates from these diseases, however, ranged upwards to 3·1 in Blackburn, 3·3 in Cardiff, 3·9 in Stockton-on-Tees, 4·1 in Middlesbrough, 5·4 in Derby, and 6·0 in Walsall. The 142 fatal cases of measles, were 15 in excess of the number in the previous week; the highest annual death-rates therefrom were 3·1 in Cardiff, 3·9 in Stockton-on-Tees, 4·6 in Derby, and 5·4 in Walsall. The deaths from whooping-cough, which had been 136, 109, and 103 in the three preceding weeks, rose again to 107 last week; the highest rates from this disease were 1·1 in Salford and in Huddersfield, 1·2 in Wigan, and 1·6 in Brighton. The 65 fatal cases of diarrhœa exceeded by 26 the number in the previous week, the highest rates of mortality being 1·2 in Walthamstow, 1·7 in Barrow-in-Furness, and 2·0 in Middlesbrough. Scarlet fever caused a death-rate of 1·5 per 1000 in West Bromwich, and diphtheria a rate of 1·3 in Norwich. There were two deaths from "fever" in London, two in Liverpool, two in Sheffield, and one in each of 13 other towns. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals for the past ten weeks; the number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had risen from 2658 to 3276 in the ten preceding weeks, had further increased to 3387 at the end of last week; 570 new cases were admitted during the week, against 422, 504, and 493 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 156, 148, and 139 in the three preceding weeks, further declined to 126 last week, and were nine below the corrected average number in the corresponding week of the five years 1902–06. The causes of 35, or 0 9 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Manchester, Leeds, Bristol, West Ham, and in 50 other of the 76 towns; the proportion of uncertified deaths, however, showed considerable excess in Liverpool, Birmingham, Sheffield, Portsmouth, Rochdale, Grimsby, and Rotherham.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had declined from 17·3, to 13·7 per 1000 in the four preceding weeks, rose again to 14·9 in the week ending July 20th, and was 2·5 per 1000 in excess of the mean rate during the same week in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·6 in Aberdeen and 11·2 in Leith, to 17·6 in Dundee and 18·0 in Perth. The 518 deaths in the eight towns showed an increase of 43 over the number in the preceding week, and included 63 which were referred to the principal epidemic diseases, against 59 and 60 in the two previous weeks. These 63 deaths were equal to an annual rate of 1·8 per 1000, which exceeded by 0·5 per 1000 the rate from the principal epidemic diseases in the 76 English towns; they included 23 which were referred to whooping-cough, 19 to diarrhœa, 14 to "fever," and seven to measles, but not any to small-pox, scarlet fever, or diphtheria. The fatal cases of whooping-cough, which had been 18 and 22 in the two previous weeks, further rose last week to 23, of which nine occurred in Glasgow, five in Edinburgh, three in Leith, two in Dundee, and two in Paisley. The deaths referred to "fever," which had been 21, 18, and 14 in the three preceding weeks, were again 14 last week, and included seven which were attributed to cerebro-spinal meningitis in Glasgow, three in Edinburgh, and one in Leith. The fatal cases of diarrhœa, which had been 10 and 12 in the two preceding weeks, further rose last week to 19, of which seven occurred in Glasgow, four in Edinburgh, four in Dundee, two in Paisley, and two in Greenock. Of the seven deaths from measles six were returned in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 72, 80, and 88 in the three previous weeks, declined again to 72 in the week under notice, but exceeded by eight the number in the corresponding week of last year. The causes of 24, or 4·7 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 19 5, 18·3, and 21·0 per 1000 in the three preceding weeks, further rose to 21·5 per 1000 in the week ending July 20th. During the first three weeks of the current quarter the death-rate has averaged 20·3, the rates during the same period being 12·0 in London and 14·1 in Edinburgh. The 161 deaths of Dublin residents registered during the week under notice showed an increase of four over the number in the previous week, and included five which were referred to the principal epidemic diseases, against 19 and 14 in the two preceding weeks; of these, four resulted from whooping-cough and one from "fever," but not any from small-pox, measles, scarlet fever, diphtheria, or diarrhœa. These five deaths were equal to an annual rate of 0·7 per 1000, the rate during the same week from the principal epidemic diseases being 1·5 in London and 1·7 in Edinburgh. The fatal cases of whooping-cough, which had been nine and seven in the two previous weeks, showed a further decline to four last week. The 161 deaths from all causes in Dublin during the week included 32 of children under one year of age and 49 of persons aged upwards of 60 years, each of these numbers showing a further increase upon those returned in recent weeks. Eight inquest cases and seven deaths from violence were registered; and 59, or 36·6 per cent., of the deaths occurred in public institutions. The causes of seven, or 4·3 per cent., of the deaths in Dublin last week were not certified; in London the causes of all the deaths were duly certified; while in Edinburgh the percentage of uncertified deaths was 2·0.

# THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: O. W. Andrews to the *President*, additional, for Deptford Victualling Yard, temporary; J. A. Moon to the *Prince of Wales;* W. G. Axford to the *Magnificent;* H. W. A. Burke to the *Wildfire* and for Sheerness yard; and J. Menary to the *President*, additional, for three months at West London Hospital. Surgeons: S. F. Dudley to the *Queen;* O. Mills to the *Donegal;* and N. H. Harris to the *Defiance.*

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Thomas Edward Henry Williams has been placed on the Retired List at his own request, with permission to assume the rank of retired Deputy Inspector-General of Hospitals and Fleets (dated July 12th, 1907).

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Edwin O. Milward is placed on retired pay (dated July 24th, 1907).

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Henry G. Smeeth to be Surgeon-Captain (dated July 6th, 1907).

### IMPERIAL YEOMANRY.

Lancashire Hussars: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel D. Harrisson to be Surgeon-Lieutenant-Colonel (dated June 9th, 1906), and to be granted the honorary rank of Surgeon-Colonel (dated June 20th, 1907). Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel D. Harrisson resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated June 21st, 1907). Lincolnshire: Robert Black Purves (late Surgeon-Captain, 1st Edinburgh (City) Royal Garrison Artillery (Volunteers)), to be Surgeon-Lieutenant (extra) (dated May 14th, 1907),

### VOLUNTEER CORPS.

*Rifle:* 2nd Volunteer Battalion, the Manchester Regiment: Surgeon-Major George Henry Darwin, retired, to be Surgeon-Major (dated Oct. 30th, 1906).

### THE FATHER OF KAID SIR HARRY MACLEAN.

The following interesting paragraph is taken from the *Army and Navy Gazette* of July 20th: "Those who knew Deputy Inspector-General Andrew Maclean in the days when he did duty as a medical officer on the staff of the army will be glad to learn that the veteran soldier has recovered from his illness and is in as good a state of health as can be expected having regard to his advanced age—he has reached his ninety-fifth year. He is father of Kaid Sir Harry Maclean, whose captivity has naturally occasioned him anxiety. Dr. Maclean lives in the neighbourhood of Kew Gardens, and was until recently to be seen taking his daily walk with little outward evidence of age or infirmity."

# Correspondence.

"Audi alteram partem."

## EXPERIMENTS ON PROLONGED PROTEIN FEEDING.

*To the Editors of* THE LANCET.

SIRS,—In a very interesting and instructive paper on the above subject, published in THE LANCET of July 20th, Dr. David Forsyth has discussed at some length some views which I have recently advanced as to the relationship of diet to the thyroid gland, based on the results of an experimental investigation into the effects of an excessive meat diet in animals. As I think that Dr. Forsyth has unwittingly given an erroneous impression of the results recorded in my paper and of my interpretation of them, I would like with your permission to offer a few very brief comments on his paper.

Dr. Forsyth is, I think, hardly correct in stating that he has repeated my observations. His experiments differed from mine in two important particulars. My experiments were directed to ascertain the effects of an exclusive meat dietary and the food was given in an uncooked condition in order that all the nutritive juices and soluble salts of the meat should be consumed by the animals. In his experiments Dr. Forsyth supplemented the meat diet by the addition of inorganic salts and possibly other foodstuffs, and the meat was cooked, the water used in the cooking not being utilised for the feeding of his animals. At the meeting of the Physiological Society in November, 1905, at which the fowls fed by Dr. Forsyth were exhibited, I was much struck by the difference in the dietetic conditions in his observations and mine.

With regard to Dr. Forsyth's interpretation of the changes in the thyroid and parathyroid glands recorded by me, I fear that his presentation of my results and my interpretation of them has been unconsciously coloured by his desire to harmonise my results with his theories. The possible fallacies suggested by Dr. Forsyth were not unknown to me, and I am satisfied that they do not affect the results. It is true, as Dr. Forsyth points out, that the weights of the glands recorded in my paper are not as complete as they should have been. This is accounted for by the fact that my research was primarily an experimental investigation into the nature of avian gout and the changes in the thyroid and parathyroid glands were, so to speak, an accidental finding, and two out of the three greatly enlarged glands were partially utilised for sections before the probable significance of the enlargement was appreciated. Since the thyroid glands in all three fowls were at least eight times larger and heavier than the glands of a control animal of similar weight, and as this condition was associated with an equally striking enlargement of the parathyroid glands, it did not seem to be possible to arrive at any other conclusion than that arrived at, and I am still of this opinion.

In his paper Dr. Forsyth suggests that the possibility of a deficiency in inorganic material in a meat diet being an important factor in such experiments was first brought to my notice when my paper was discussed at a meeting of the Pathological Society of London. This is not the case. My original investigation was undertaken in order to confirm or otherwise the results of an interesting series of experiments by Kionka on avian gout induced by meat feeding, which were published in 1900, and are referred to in my original paper. In his writings Kionka not only makes a special reference to the deficiency of lime in a meat diet but his main paper is followed immediately in the same journal by a second communication dealing exclusively with the influence of lime in his experiments. In my later feeding experiments with rats referred to by Dr. Forsyth my object was to repeat as closely as possible the dietetic conditions obtaining in my earlier observations. I have elsewhere pointed out that the consideration of the ultimate causes of the structural changes observed—whether due to excess or deficiency of particular foodstuffs in a meat diet—was beyond the scope of my recent communications.

May I, in conclusion, offer one comment on the very interesting facts recorded by Dr. Forsyth in that section of his paper dealing with the structure of the thyroid gland in birds of prey. I was specially interested in the five different types of glands which are shown in his illustrations, as characteristic of the eagle, ostrich, falcon, &c., but I have doubts as to the validity of the conclusions he draws from them. An extensive experience of the histology of the thyroid gland of animals under different conditions leads me to think that more than one of the five appearances illustrated are pathological and are the results of the disturbed state of general nutrition which has led to the tissue being available for examination by Dr. Forsyth. I am strengthened in this view by the fact that I can show, from some unpublished data on the thyroid gland of experimentally-fed cats, appearances apparently identical with those described by Dr. Forsyth in the five different species of birds, the appearances in my sections being obtained under conditions which leave no room for doubt, in my mind at any rate, as to their having an important etiological relationship to dietetic conditions.

I am, Sirs, yours faithfully,

July 20th, 1907. CHALMERS WATSON.

## ATHLETIC CHAMPIONSHIPS AND NATIONAL PHYSICAL DEVELOPMENT.

*To the Editors of* THE LANCET.

SIRS,—In your leading article on the above subject you refer to "the winning of the Grand Challenge Cup at Henley for the second year in succession by a Belgian crew, the recent victories of colonial football players, the success of M. Massey at golf, of Mr. Gould at tennis, and of Mr. Brookes at lawn tennis"; and you express a doubt as to whether these and "other similar incidents of athletic competition" justify us in concluding that there is "a falling off in the physical energy of the nation." Why, you ask, should not others learn to play as well as, or better than, ourselves the games we have invented? Speaking generally, there is, indeed, no reason why they should not. By the law of averages we must expect to suffer our due share of defeats. If, however, these are greatly in excess of what can be accounted for by the law of averages clearly some disturbing factor or factors must be in operation.

Viewed thus, I find nothing remarkable in the recent victory of the Belgians, or of M. Massey, or Mr. Gould, or even of Mr. Brookes. Such successes are sufficiently explicable by the law of averages. The successes of the colonials in football and cricket strike me, on the other hand, as very remarkable, inasmuch as they are far in excess of what by the law of averages we should expect. The colonial record in the sphere of football and cricket is, indeed, phenomenal. Putting aside the extraordinary feats of the Australian cricketers who are drawn from a population of less than 4,000,000, let us consider the recent records of the New Zealanders and South Africans in football and cricket. Although the population of New Zealand is considerably under 1,000,000, while that of England is upwards of 32,000,000, the New Zealanders had no difficulty in defeating here in England every 15, including an all-England team, which we opposed to them. The South Africans, again, representing a population of less than 750,000, had an equally brilliant record. In each case the colonial successes were due to consistent all-round merit—to a combination of skill, dash, and endurance. Not only did the best teams we could put in the field go down before our adversaries, but the representative teams of the ancient universities, containing the flower of our English youth, were altogether outplayed by them. It has long been our proud boast that our battles have been won in the playgrounds of our public schools, the inference being that all the qualities which make for virility are cultivated there, but seeing that our ancient universities are fed mainly from the public schools it looks very much as though these latter were turning out a less virile stuff than that furnished by the colonies.

Excellence in a game such as Rugby football demands a certain toughness of fibre, and it is perhaps largely for this reason that the Welsh teams, composed as they mainly are of men who live by physical labour, were so much more successful against the colonials than the English teams, which are drawn chiefly from the upper middle class, reared under conditions which, as it seems to me, make for "softness." In this connexion the superiority of the golf and cricket professionals over the amateurs is of interest. Amateur golfers and first-rate amateur cricketers are drawn almost entirely from the upper middle class, while the professionals, both in golf and cricket, are, I understand, derived for the most part from the so-called "working" classes. Now can we wholly explain the superiority of the latter on the assumption that they devote more time and care to the game which they have made a profession than the amateurs who indulge in it as a pastime only? This is at least doubtful. As regards golf, e.g., the amateur players in England are much more numerous than the professionals. Many of them, moreover, begin to play when quite young and devote quite as much time to the game as the professionals. How comes it, then, that the latter show a consistent superiority over the former? I suggest that it is partly due to the possession of greater staying power and partly to a richer endowment of "nerve," or shall we call it imperturbability?

Both these qualities have been conspicuous in the South African cricketers, whose recent successes in this country are perhaps even more remarkable than their brilliant achievements in the football field. Think of it. A colonial community of less than 750,000 sends to us, with our population of upwards of 32,000,000, a team to compete in our national game—our most typically national game—cricket, and displays not only a decided superiority over our county teams, but bids fair to hold its own against a representative English eleven chosen from both professionals and amateurs. There is, perhaps, no game which makes greater demands on what may be termed manly excellence than cricket, requiring as it does not only muscularity, agility, and endurance, but judgment, decision, patience, good temper, unselfishness, and "nerve." No one, indeed, who does not exhibit the best qualities of manliness is likely to make a good cricketer. All these qualities our brothers from over the seas have displayed in a remarkable degree, and it seems difficult to avoid the conclusion that the conditions under which they live are more favourable for the development of some of them, especially perhaps of endurance and nerve, than the conditions obtaining in this country. They seem in Greater Britain to be breeding a hardier and more virile race than in the mother country, and it is probable that, given equal opportunity, the same superiority which the Australasians and South Africans have displayed in cricket and football would be equally manifest in tennis, polo, and other games of the kind.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 21st, 1907. HARRY CAMPBELL.

PS.—I see in this morning's paper (July 22nd) under the heading "A Trial of Nerve" that the King's Prize has been won by an Australian. This, coming on top of Mr. Brookes's successes, is noteworthy.

## THE CORNEAL REFLEX IN ANÆSTHESIA.

*To the Editors of* THE LANCET.

SIRS,—In the issue of THE LANCET of July 20th, 1907, on p. 141, occurs a sentence which involves a change of view of the most vital and lasting importance. In the course of a lecture on General Surgical Anæsthesia Dr. F. W. Hewitt thus expresses his carefully considered opinion with regard to the clinical signs when using chloroform or a chloroform mixture. "Provided that the respiration be freely proceeding and *that the corneal reflex be present* even to a slight degree, the patient's general condition at the moment of observation may be regarded as satisfactory." In the edition of his work on "Anæsthetics and their Administration," published in 1901, Dr. Hewitt said, referring to chloroform, p. 336, "The lid-reflex should, as a general rule, be absent ...... the third degree of anæsthesia cannot, generally speaking, be said to be present when this phenomenon can be elicited," and again on p. 363, "In many cases a trace of this reflex may be permitted but there are numerous subjects and numerous operations in which both corneæ must be kept absolutely insensitive throughout."

Dr. Hewitt's latest opinion coincides with the view which I ventured to record in the *British Medical Journal* on Feb. 4th, 1905, in these words, p. 245: "Never completely abolish the corneal reflex. The corneal reflex, which is produced by touching the centre of the patient's cornea and both watching and feeling the responsive closure of the upper eyelid, is one of the last primary reflex actions to become paralysed. When this has been abolished the fourth stage of dangerous anæsthesia has been entered."

I do not say that it is possible always to avoid the momentary disappearance of the corneal reflex, but that the third stage or that of surgical anæsthesia is limited, and should be taught as being limited, by the abolition of the corneal reflex in both eyes. Differences of opinion which may be expressed with regard to this conviction are more likely to depend upon imperfect methods of eliciting this reflex than upon disbelief in its truth, the accuracy of which is founded upon continual daily observation.

I am, Sirs, yours faithfully,

Harley-street, W., July 23rd, 1907. H. BELLAMY GARDNER.

## THE INTRODUCTION OF THE METRIC SYSTEM INTO PHARMACY.

*To the Editors of* THE LANCET.

SIRS,—Several circumstances indicate that the time has come for introducing metric weights and measures into the medical practice of this country. That system became legal in Great Britain a few years ago and no other is now permitted in the pharmacopœias of any civilised country except Great Britain which, however, has begun to print the new and old side by side.

The disciplinary and regulating body of the British medical profession, that is to say, the General Medical Council, has recently gone further than the Pharmacopœia by recommending, after a unanimous vote, that the metric system be made compulsory by law for everybody in all bargains and sales where weight or measure is specified. A Parliamentary majority of two to one was pledged in writing to support a Bill to this effect, but it was defeated by 150 to 118 votes, mainly through opposition from the textile trades, which erroneously imagined that the Bill applied not merely to the sale of goods but to machinery and factories. A few days before this debate Denmark adopted the metric system for all purposes, so now England and Russia alone stand aloof in Europe.

All Southern and Central America have followed the example of Europe and the United States have commenced by making this system compulsory for electric measures, also in the medical department of the army, the navy, and public health. It is also obligatory for all purposes in Porto Rico and the Philippines.

Official reports show that this change has been wholly beneficial in the United States, even where civilians experienced only in the old system were hastily brought into the army and navy medical services during the recent war with Spain. The colonies have urged Great Britain to join them in the reform and will probably act alone, if necessary, as New Zealand has already legislated on the subject. As regards the medical services of the army and navy in this country Government could take immediate action without reference to Parliament and with the same advantages which followed in the United States. The result would probably encourage concerted voluntary action among medical men in civil life who might collect and record the names of adherents through a central committee. A commencement of metric practice might be delayed till a convenient percentage of names in any district or throughout the country were recorded. I am, Sirs, yours faithfully,

July 22nd, 1907. T.

## CERTIFYING SURGEONS AND THE WORKMEN'S COMPENSATION ACT, 1906.

*To the Editors of* The Lancet.

Sirs,—Having just received from the Home Office documents respecting the duties and remuneration of certifying surgeons under the Workmen's Compensation Act, 1906, I shall be glad to know the opinion of certifying surgeons as to whether they consider the fees are such as should be accepted by self-respecting medical men and, if not, what steps can be taken in the matter. In the circular from the Home Office it points out that "the certificates are legal documents which will require great care in completion." I gather the fee for this legal document is *one shilling*, which includes a responsible and skilled examination, but the details are chiefly given in Section 8 and Sub-section 3 of the Workmen's Compensation Act, 1906.

I am, Sirs, yours faithfully,

July 16th, 1907. Certifying Surgeon.

⁂ We comment upon the matter in another column.—Ed. L.

Poplar and Stepney Sick Asylum District.—The report of the managers of the Poplar and Stepney Sick Asylum District for the year ending Lady-day, 1907, shows that the total number of patients in the various asylums of the district at the close of the period with which the report deals was 926. In the Bromley asylum the patients from Poplar suffering from cancer of various regions numbered 44, while patients from Stepney suffering from the same disease numbered 20. During the year 18 nurses presented themselves for, and successfully passed, the examination in sick cookery in connexion with the cookery classes held under the auspices of the Technical Education Board of the London County Council. The medical superintendent reports that the first year's working of the new system under which case papers were substituted for the cumbrous system of medical relief books has been a great improvement upon the old method. Under an Order issued by the Local Government Board in 1905 the medical superintendent has the option of either having the case paper, upon which appear the diet, medicine, history, and all information regarding the patient, hung by the bedside, or else of having in addition to the case paper a bed card upon which is written by the nurse the diet prescribed for the patient, together with other useful information. The latter of these alternatives was chosen in the present instance and the results have proved very satisfactory. The case papers, which are kept under lock and key, have been specially useful in cases where patients previously treated present themselves for readmission.

## THE IRISH INTERNATIONAL EXHIBITION.

(From our Special Sanitary Commissioner.)

Dublin, July 13th, 1907.

Though the Dublin exhibition is called the Irish International Exhibition the international element is very small and unimportant. On the other hand, as Ireland is not a populous or industrial or wealthy country it naturally follows that the Irish exhibits are also somewhat poor. They are, nevertheless, interesting; they testify that efforts are being made and that these might be far more successful if the Irish could only receive a more business-like education and acquire greater technical knowledge. These considerations have a considerable bearing on the health and vitality of the race, particularly as such industrial efforts as have been made relate in the main to the production of food and of clothing. However, the most notable Irish industries have a building to themselves on one side of the grounds and it is the Central Palace that seems the most important and first attracts the visitor, if for no other reason than that it has been made the principal subject of the illustrated advertisements. Yet the middle of this building is a huge sort of meeting place and lounge where there are but few exhibits. The four wings, however, of this the main structure are well filled. Penetrating first the north wing I found a considerable amount of Irish and other furniture. The idea of sanitary furniture constructed for its own sake or specially for use in the hotels of the Touring Club and which was such an interesting feature at the Milan Exhibition last year has not yet travelled so far as Dublin. Nevertheless, as we more clearly understand the causes of the spread of disease something approximating to aseptic furniture will become more and more appreciated, especially in hotels and places frequented by a great variety of people. At several exhibitions I have noticed furniture of this description, but I found none at Dublin.

In the east wing there were a great display of whiskies and notably a huge pot-still belonging to the firm of John Power and Son which was established in Dublin in 1791. The statement made is that this whisky "is distilled in a pot-still from the wash derived from the fermented worts of home-grown malted and unmalted barley, with wheat and oats in small proportion." Close by, and as if suggesting an antidote, Augustine Thwaites has a model of the quaint little old house where in 1773 soda water was first made. In the window there is the old ledger opened at the page where the account was kept of the amount of soda water supplied to His Majesty George IV. Then again, likewise surrounded by other whisky exhibits, I found Wheatley's non-intoxicants, hop-bitters, &c. These were bottled and looked very much like ordinary ales. Here, also, were numerous tobacco exhibits, and tobacco is often as injurious, when smoked in excess, as beer, but this does not prevent many total abstainers from suffering the evil effects of tobacco.

In the south wing there were more tobaccos and more mineral waters, including the French Perrier water. Then there were meat preparations, such as Bovril soup and Brand's various delicacies and invalid foods. Levers' soaps, Price's patent candles, and Fry's chocolates came next, though it is difficult to see what connexion there can be between them. In the same wing Philip Harris and Co. of Dublin exhibit their scientific instruments, scales, thermometers, and electrical and chemical appliances of all sorts. As scientific exhibitors they would be quite isolated but for the proximity of John Clark and Co. of Dublin and Belfast who display surgical instruments, orthopædic appliances, hospital furniture, &c. As special to Ireland there are Irish linen bandages, the edges of which are woven so that they are very durable. The same firm has a high-pressure steam steriliser consisting of double copper cylinders and an outside jacket of Russian steel. It condenses its own steam and a pressure of from 15 to 40 pounds can be obtained according to the manner in which the safety valve is regulated. These are the only sterilisers made in Ireland and are becoming more and more an article of general use.

The west wing is mainly devoted to clothing. There are Killarney rugs and cloth made of pure wool, doubtless very warm and healthy to wear, but there is no clothing that professes to be sanitary clothing and even the non-inflammable flannelette, seen at almost all exhibitions, is not in evidence here. There is also some display of hats, old and new, and notably the very tall silk hat worn by O'Connell in 1840; but no one has attempted to solve the problem of ventilating these very uncomfortable and heavy forms of headgear.

On the right of the Central Palace there is an oblong building called the Palace of Industries, and here, among other things, is the New Zealand section. Both here and in the very elaborate and special pavilion built for the Canadian exhibits the first impression is that these colonies are doing just what should be done with special success in Ireland itself. Both exhibits have refrigerators and through the glass panes can be seen the fresh butter, the poultry, and the frozen meat. So much butter is there from Canada that it has been moulded to represent a Canadian farm, the chickens made of butter that play about in the foreground being life size. Then there are pyramids of cheese; in fact, the very things that could be most abundantly produced in Ireland itself. There is a small working model of a section of the R.M S. *Papanui* in the New Zealand section. This shows how thousands of carcasses of sheep can be laid in the hold of the ship and how the fans propel cold air over them, so that they are preserved during the long journey to England, and the machine lifts to bring them up to the landing stage with the minimum of effort. All this is interesting as indicating the increased sources of food-supply so essential to the health of the community. There is also a considerable collection of mineral waters from New Zealand. Many of the springs known to exist have not yet been analysed. Others have been carefully examined and placed forthwith under Government control. These springs and baths are entrusted to the supervision of Dr. Arthur S. Wohlmann who represents the Government. Some of these are alkaline sulphur, bathing and drinking waters, and are credited with having effected numerous cures, not only of the inhabitants of New Zealand but of patients arriving from distant parts. There are also blankets, cloth, and rugs made in New Zealand. Some of the woollen rugs are especially fine, with beautiful colours, designs, and finish. As non-conductors of heat, cold, or electricity, such woollens are especially useful to invalids. Close by the New Zealand section is the curious exhibit of Lovibond's patent tintometer, an instrument and system of developing and noting the quality of colour. This method of analysing, accurately measuring, and recording the density, shade, and colour is applied not only to numerous industrial purposes but to the blood of man and animals and is therefore occasionally of use in the diagnosis of disease. In conversation with Mr. Lovibond I elicited a curious piece of information. In his process a great number of small glass slides are employed and these are tinted various shades of red, blue, and yellow. Seven young women are engaged at this work; and in the course of years some 30 to 40 women have been so employed. The preparation of these pieces of glass is identical whatever the colour, yet those who work with the red glass are very soon tired and exhausted. This is so well recognised a fact that no one is allowed to work with the red colour for a long time. Near at hand there is a large model of one of the Gilbey vineyards in the Bordeaux district with two fine white bullocks dragging a cart loaded with grapes. The Irish profess to be connoisseurs of claret. They say that their climate favours the maturing of such wine and maintain that Napoleon himself was supplied with claret from a Dublin cellar. In any case, Messrs. W. and A. Gilbey are making good use of the publicity which the exhibition gives to popularise in Ireland the use of wholesome cheap clarets which are certainly very preferable to the questionable spirits sold too often under the name of whisky.

There is besides a small French section where the wine-growers of France exhibit samples; there are also cognacs, liqueurs, and champagne in this section. The Vichy waters and salts have a large case and there is a collective pharmacy exhibit where some of the best known wholesale druggists have sent many of their products. Then Dr. Madeuf, who has never been known to miss an opportunity of bringing forward the claims of his League for the Prevention of Sea Sickness, is here with a big display of literature on this subject. In this section there are also catguts for ligatures, &c., produced by the very ingenious Triollet process which insures sterilisation without destroying the flexibility or suppleness of the catgut or hindering its ready absorption.

In the gardens there are several small structures, one specially devoted to Lemco and Oxo and another to Chivers's jellies and jams. Then there is a pavilion for "Working Exhibits," where men and women are at work making cloth, carpets, lace, boots, gloves, &c. Most of these are home industries, the sort of work that can be done in a cottage, and on the walls there are photographs of workers on the continent similarly employed. Thus we see shirt-makers and boot-makers in France stated to be earning from 2 to 3 francs per day, and glove-makers only 1 50 francs. They all look very tidy and evidently impressed with the fact that they were being photographed. The Belgian workers make a more general use of aprons and therefore look even more tidy. Only one of these photographs is realistic, and that is of a German corset-maker who earns one mark per day. Here, in the crowded little room, the corset trimmings are spread over slop-pails and washing-basins, and this does convey some idea of the dangers to health caused by the home work and sweating systems. Otherwise these photographs—as, indeed, the whole of this sort of exhibits—convey very false impressions and can best be compared to the happy and picturesque peasants who sing in the chorus of an operatic scene.

Next to this pavilion comes a model village hall which is perhaps more satisfactory than its neighbour the model village hospital. Not so much is needed in a hall only occasionally occupied to the full. The hall of wood and corrugated iron seems ably contrived and a fair provision is made for ventilation. But the idea of a hospital made of wood and iron is not so happy. On entering to the right there are a small nurses' sitting-room and pharmacy. Here on the walls are hung proclamations issued by the National Association for the Prevention of Tuberculosis. On the other side of the entrance is a small nurses' bedroom, with just one chair, a washstand, a chest of drawers, and a camp bed. Next to this is a small operating-room, with only one small window and wooden walls. Yet to judge by the operating table and instruments supplied by Messrs. Fannin and Co. of Dublin it seems intended that major operations should be performed here. In the back part of the cottage there is a small service bedroom giving on to a fairly large kitchen, with a scullery and pantry beyond. Finally, in a sort of passage there are two closets, a bathroom, and a nurses' sink. So much for the services. As for the patients there are only two rooms available for them and these are so small that they can only hold two patients each. To build a hospital, even be it but a cottage hospital for only four patients, is certainly a difficult matter.

Opposite there is a cottage made of hollow concrete blocks. The "Pioneer" machine produces these blocks, and they resist fire, are durable, and can easily be moulded into very artistic designs. By the side of this there is another cottage, with living-room and three small bedrooms, which can be built for £135. Such extreme cheapness should not be necessary and in any case sufficient space cannot be obtained at the price.

The largest building of the exhibition is undoubtedly the spacious gallery called the Palace of the Mechanical Arts. Here there are some large machinery and some exhibits that would interest hygienists, such as E. Green and Son's Economiser Works of Wakefield as a contribution to the problem of warming buildings; Shanks and Co.'s porcelain baths and sanitary hardware; and the immense exhibits of the Carron Company with numerous firegrates, kitcheners, baths, &c. Opposite this are the exhibits of the great liners of the Cunard, the White Star, the Booth, and other popular passenger companies. The problem of ocean travelling is a fascinating one to all who have practical experience of its intricacies and the beautiful models shown here facilitate its study. The models of the most recently constructed ships can be examined here, such as the huge 32,000 ton Cunarders and the new Booth Line ship *Lanfrang*. The latter takes health-seekers to the winter resorts which the Portuguese are endeavouring to develop.

In the machine gallery and in various parts of the exhibition there is a considerable assortment of the machinery and numerous appliances that are employed in creameries and dairy farms generally. This, it need hardly be said, is a matter of great importance to a country like Ireland which should produce an enormous amount of milk, butter, and cheese. His Majesty King Edward VII. has this week visited all these exhibits. His presence and the immense enthusiasm of the reception given should help the cause that the Dublin exhibition is meant to promote—namely, the development of industry and technical knowledge in Ireland.

# BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *The University.*

DISTINCTION has recently been conferred upon two members of the University, the Principal, Sir Oliver Lodge, having received the honorary degree of D.Sc. of the University of Liverpool, and Professor Fiedler having been elected to the recently established professorship of German language and literature in the University of Oxford. As Professor Harvey Gibson pointed out, Sir Oliver Lodge was entitled to the highest distinction which the University of Liverpool could confer upon him, not only on account of the work which he previously did for University College but also on account of the distinguished position that he has made for himself as a leader in science. Fortunately Sir Oliver Lodge remains in Birmingham but in the case of Professor Fiedler, though we are glad that he has been appointed to so distinguished a position, we cannot help regretting that his appointment will make us the poorer by the loss of the example of his unremitting energy, his genial good fellowship, and his active sympathy and help in any work which required doing. During his tenure of office in Birmingham Professor Fiedler has not only advanced and extended his department but he has acted as chairman of the library committee and for some years he has been Dean of the Faculty of Arts. Oxford gains much by his appointment and Birmingham will not find it easy to replace a professor who has gained so great a hold both on the students and on the people of the city.

### *The Society of Chemical Industry.*

The meeting of the Society of Chemical Industry recently held in Birmingham passed off very successfully. Fortunately the society came with the coming of the fine weather; consequently the excursions took place and garden parties were held under favourable conditions and the visitors saw Birmingham not quite at its best but in more favourable circumstances than had previously been experienced during this summer. At the general meeting, held in the medical theatre of the University, the Lord Mayor welcomed the visitors to Birmingham and the Principal, Sir Oliver Lodge, proffered the welcome of the University. Mr. Eustace Carey of Liverpool, the president of the society, delivered the presidential address, in the course of which he stated that the last 20 years had been a period of depression in the alkali trade and he attributed this to three causes: (1) the failure in giving and the failure in appreciating education; (2) the failure of the British patent law; and (3) the loss of markets due to the protection and tariffs adopted by old and important customers. With regard to education, however, he saw signs of improvement in this country in all grades and he had hopes with regard to the patent law which, it is hoped, will be passed in a short time. At the banquet of the society Sir Oliver Lodge pointed out that one of the things wanted in this country was an appreciation of university training by employers such as was said to exist in Germany, for without it the work of the universities in turning out well-equipped and well-trained men was comparatively useless. The last two days of the meeting were devoted partly to excursions to places of practical and scientific interest in the city and in adjacent parts of the country and partly to visits to the beauty spots of the neighbourhood. In the evening of the last day a garden party was held in the Botanical Gardens which were beautifully illuminated for the occasion. The guests were received by Professor and Mrs. Frankland, and were entertained with delightful music and by a magnificent display of fireworks.

### *Municipal Milk Depôts.*

In its quarterly report the health committee states that after carefully considering the question in all its bearings the committee is unable to recommend the council to establish milk depôts. It points out that there is no satisfactory evidence that the establishment of such depôts has any appreciable effect on the infantile mortality, for the statistics which have been prepared to show that the infant death-rate is reduced by the utilisation of milk depôts are, it considers, open to objection and the good results which have been noted are possibly due to other causes.

### *Open Spaces.*

In the first instance everything seemed to be going favourably with regard to the series of open spaces which the Birmingham Open Spaces Society desired the city to obtain and to maintain for its own general advantage. So far as the Black Patch is concerned Smethwick and Handsworth, in whose district it partly lies, are prepared to provide a considerable part of the purchase money, but they are not willing to undertake any responsibilities as to upkeep, and, of course, all the cost of the other sites at present available must fall upon the city. The whole matter was referred to the Baths and Parks Committee for a report as to cost and advisability, and the report is unfavourable. Without considering the cost of purchase, about which there would be little or no difficulty, the committee estimates that to put the Black Patch in proper order a sum of over £10,000 must be provided and the annual expenses would be about £1450. The cost of converting the other plots offered would amount to £1835 and the total capital cost including the balance of purchase money (£4000) and additional provisions which the committee suggests as desirable would be, in the committee's opinion, at least £15,950. In these circumstances the committee is of the opinion that the advantages to be gained do not justify the cost and it cannot recommend the council to accept the offers made. What the council will decide remains to be seen, but it may be pointed out that the committee's estimates of what it would be necessary to do, though perfectly justifiable and highly desirable, are possibly in excess of present requirements, and if it is a question of getting these spaces now or losing them for ever, it would surely be wise in the city's interests to secure spaces which are so necessary, to do nothing more to them than necessity compels at present, and to develop them as opportunity offers in the future. If they are secured as spaces they will be a valuable asset to the crowded areas and they can be retained as "lungs" for children, who can easily make themselves happy in the absence of all elaborate arrangements.

### *Presentation to Mr. W. F. Haslam.*

For a period of 16 years Mr. Haslam acted as secretary of the Midland Medical Benevolent Society and the members, taking advantage of his recent resignation of the post, have presented him with a silver tea- and coffee-service, kettle, and rose bowl as a token of their very high appreciation of the excellent work which he has done for the society during his long term of office. Dr. W. P. Whitcombe, in making the presentation, referred to the devotion and labour which Mr. Haslam had given to the society and ascribed a large part of its success to his efforts.

### *The Health of the City.*

The health committee reports that during the past half year the health of the city has been on the whole good and the records compare very favourably with those for the first two quarters in the preceding ten years. The birth-rate is rather lower than last year, 29·3 per 1000, as compared with 30 per 1000, and the death-rate was 17·9 per 1000, as compared with 16·9 during the same period of 1906, but had it not been for the severe and widespread attack of measles with which the city has been affected the death-rate would have been a record one for the first half of the year. There were more cases of typhoid fever than in the preceding year, but apparently they were due to the importation of contaminated shell-fish.

July 23rd.

# SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Changes in the Medical Curriculum in the University of Edinburgh.*

SOME time ago it was intimated in THE LANCET that an ordinance had been approved by the Senatus and the Court of the University of Edinburgh asking for alterations of an important nature in the medical curriculum. This ordinance, it was pointed out at the time, was opposed by some of the other Scottish Universities and was therefore likely to be blocked in its further course before the Privy Council and Parliament. The intimation which was received last week that the ordinance has been passed was a great and gratifying surprise. The new regulations will come into force in

October. The terms of the ordinance have been already given in THE LANCET, but their general tenour may be again outlined. The winter session is to be divided into two half-sessions, lasting respectively from October to Christmas and from January to March, and examinations are to be held at the end of the first half session as well as at the end of the second half and of the summer session as heretofore. Further, the examination in physiology may be taken at the end of the second winter and that in anatomy three months earlier than formerly. The subjects of the final examination may be taken separately. Thus, forensic medicine and public health may be taken at the end of the summer after the fourth winter, midwifery at the Christmas of the fifth winter, systematic medicine and surgery at the end of the fifth winter, and clinical medicine and surgery in the summer thereafter. The subjects of materia medica and pathology have changed places. The feeling that these changes were highly desirable is practically unanimous and it is felt that they will relieve students and examiners alike and will tend to raise the standard of work. It would be interesting to know what influences were at work to remove the opposition of Glasgow and Aberdeen to these alterations. It is the first step towards the autonomy which Edinburgh feels is so necessary if education is to be kept abreast of the rapid changes which are taking place in knowledge and in the methods of instruction. The University is to be congratulated warmly on the success of this forward movement.

### *The Royal Society of Edinburgh.*

At a meeting of the Royal Society of Edinburgh held last week the Keith prize was awarded to Thomas H. Bryce, M.A., M.D. Edin., for his two papers on the Histology of the Blood of the Larva of Lepidosiren Paradoxa.

### *Compliment to Sir A. R. Simpson, M.D. Edin., &c.*

It was intimated in THE LANCET some time ago that a fund was being raised to commemorate in some way the long services which Sir A. R. Simpson had rendered to medicine in Edinburgh. It was decided that the money should be applied to the endowment of a bed in the Royal Maternity and Simpson Memorial Hospital. On July 15th the sum was formally handed over to the board of directors.

### *Medical Journalism in Scotland.*

It is understood that steps are being taken with a view to see whether it would not be possible to combine into one the medical journals published in Scotland. Whether the time is ripe for such an amalgamation remains, of course, to be seen and such an amalgamation has both advantages and disadvantages.

### *The Glasgow Maternity Hospital.*

In issuing their seventy-second report the directors of this hospital have made a special appeal on behalf of the new building fund. An interesting survey is given of the history of the hospital. It was originally started in the grammar school wynd in 1834. In 1841 it was removed to a small house in St. Andrew's-square. Here for 19 years it did much to alleviate suffering among the poor and as a teaching school. In 1860 the hospital had outgrown its St. Andrew's-square premises and after careful consideration as regards the most suitable situation a house in Rotten-row was purchased and served for 20 years to carry on the work. In time, however, this house became too small for the demands made upon it, and in 1880 the directors built on the same site the present hospital. Now in turn this building is proving too small for the amount of work that has to be undertaken. A glance at the numbers of patients in the different years gives an idea of how the work has increased. In 1860 the number of women taking advantage of the hospital in its in-door and out-door departments was 944, in 1880 it was 1288, and in 1906 it was 3687. In order to meet the pressure on their present inadequate space the directors have acquired the properties on the three sides of Ure-place, and here it is intended to erect buildings with accommodation sufficient for the patients and at the same time suitable for the teaching of practical obstetrics and gynæcology. The sum which the directors require is £80,000. The price of the ground is £15,000, for the new buildings £15,000, and for furnishings, &c., £5000.

### *University of Aberdeen: Appointment of Examiners.*

At a meeting of the Aberdeen University Court held recently the following appointments to examinerships were made:—Geology: Mr. A. Morley Davies, D.Sc., lecturer on Palæontology, Birkbeck College, London. Mathematics and Natural Philosophy: Sir W. D. Niven, K.C.B., M.A., LL.D., late Director of Studies, R.N. Medicine: Mr. Robert A. Fleming, M.A., M.D. Edin., lecturer on the practice of medicine in the School of Medicine of the Royal Colleges, Edinburgh. Midwifery: Mr. Alexander W. Russell, M.A., M.D. Aberd., assistant physician to the Glasgow Maternity Hospital. Zoology: Miss Marion J. Newbigin, D.Sc., lecturer on zoology in the Medical College for Women, Edinburgh. For the Diploma in Public Health: Mr. J. Taylor Grant, B.Sc., M.D. Edin., lecturer on medical bacteriology, Medical College for Women, Edinburgh.—The summer session at the University closed on Friday, July 12th.

### *Aberdeen City Lunacy Board.*

The Aberdeen city district lunacy board has decided that the rate to be charged in the Kingseat Asylum for patients belonging to other parishes should be £35 per annum for the year ending May 15th, 1908. The asylum committee of the board reports the receipt of seven offers to cover the whole of the legal liability of the district board under the Workmen's Compensation Acts, 1897 and 1906, the Employers' Liability Act, 1880, and at common law, for the asylum officials and servants at a total premium of £21 5*s.*, subject to a discount of 15 per cent. for agent's fees; and there was also laid on the table an offer from the General Accident Insurance Company to cover the same risk at a net premium of £8 18*s.* 9*d.*, the whole of the offers being subject to wages adjustment at the end of the year. The committee unanimously recommends the acceptance of the offer by the General Accident Insurance Company.

### *The late Mr. David Johnston, L.R.C.P. Edin.*

Intimation has been received in Aberdeen of the death, at 55, Kentish Town-road, London, of Mr. David Johnston, L.F.P.S. Glasg., who at one time carried on an extensive practice in Aberdeen. Mr. Johnston was a native of Glasgow. He acted for a time as a clerk in the office of the City of Glasgow Friendly Society and later was appointed agent to the Aberdeen branch. Two years after this Mr. Johnston commenced to study medicine. After qualifying he commenced practice in Aberdeen in 1870, and soon became very popular. In 1877 he disposed of his practice and became connected with the management of the Heathcot Hydropathic Institution. He afterwards resumed medical practice in Aberdeen and followed his profession for a number of years. He entered the town council in 1871 as a representative of the first ward and served for five years. Leaving Aberdeen about 25 years ago Mr. Johnston went to England and eventually found his way to London where he died at the age of 73 years. He was twice married and leaves two sons and one daughter. While attending a patient he fainted and two days later passed away. The deceased gentleman was a keen temperance reformer.

July 23rd.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Belfast Health Commission.*

ON July 16th Mr. Cutler, the city surveyor, was examined before the Commission. He said that the Act of 1899 bound the corporation to carry out a satisfactory purification of the sewage discharged into Belfast Lough within three years and that these three years had expired before he was appointed. In about three months he proposed to bring forward a scheme and he thought that within 12 months he could put in enough sprinkling beds to treat the normal outflow. Mr. J. C. Bretland, who was city surveyor from 1884 until 1903, said with regard to the size of the sewers in Belfast that he had followed the advice of a distinguished consulting engineer. Dr. E. A. Letts, professor of chemistry, Queen's College, Belfast, gave evidence in reference to experiments carried out by him regarding the discharge of sewage into the Lough. Mr. R. Meyer, chief clerk to the corporation, said that in 1900 the corporation applied for a loan of £78,000 for the purpose of enabling it to construct purification works, but the Local Government Board would only sanction £50,000, as it was of opinion that while the general lines on which it was proposed to treat the sewage before it was discharged were satisfactory it was desirable that a greater degree of purification than had been obtained in the experimental works should be secured. Mr. R. Patterson, a Harbour Commissioner, said his experience of Belfast Lough, which he had known all his life, was that the whole of the banks opposite Holywood used to be covered by long crisp grass which was frequently washed, dried, and used for upholstering and packing purposes, being inoffensive. With the growth of Belfast and the gradual pollution of the lough with sewage this grass ceased to exist, its place being taken by the present foul-smelling ulva latissima. The latter was noticeable in 1870, in 1876 it became very objectionable, and it had gone on increasing steadily ever since. Mr. Redfern Kelly, engineer to the Harbour Commissioners, said there was a population by day of about 10,000 on the harbour estate. Of the two great shipyards the sewage from the one (Workman and Clark) was carted away and after having been dealt with was sold to farmers, while in the case of the other (Harland and Wolff) the sewage was discharged right into the tideway. The witness contended that the city corporation, being the health authority, was in a position to step in and to make the tenants of the Harbour Commissioners send their sewage out in the ordinary way. The blame, he said, was altogether with the health authority. In reply to the suggestion that if there was a nuisance on their property the Harbour Commissioners were the people to whom the health authority would naturally go in order to have it abated, Mr. Kelly said: How can we object to Harland and Wolff discharging into the tideway, seeing the corporation also discharges such immense quantities (sewage of about 370,000 people) into the tideway? Sir Otto Jaffe, in giving evidence, said that during the period typhoid fever had been prevalent in Belfast no single member of the Jewish community had been affected, and he attributed their immunity, among other reasons, to the fact that they abstained from eating shell-fish. Some further evidence having been given as to the laws regulating the use of shell-fish, Councillor James Gregg, M.R.C.V.S., gave evidence in regard to the milk-supply of the city and stated that the condition of the cowsheds and dairies, as a rule, was bad inside the city as regards the building of the cowsheds, their ventilation, the grooming of the cows, and the presence of tuberculous animals. He also thought that no pigs should be kept in the city. Mr. James Dempsey, a former member of the corporation, in his evidence advised the amalgamation of the corporation, water, harbour, and Poor-law boards, and that they should act by committees. It also came out as a result of his evidence that at the workhouse 14,000 corpses were buried in a space of three and a quarter acres. Miss Jane Agnew, sanitary sub-officer, gave evidence as regards the conditions under which outwork was carried on in the city, and said that 255 houses which she had visited required to be cleansed and repaired. Mr. H. McManus, a member of the executive committee of the Belfast Trades' Council, said that in his opinion there was insufficient inspection in sanitary matters in Belfast. He advocated the preparation and public exhibition of maps showing the localities in which infectious disease was present so that people could keep away from them, and thus those possessing property would take more care in improving the hygienic and sanitary condition of it. Dr. J. Barron, Mr. S. B. Coates, and Dr. H. R Torrens, dispensary medical men, were next examined as to the state of their districts. Mr. H. Norman Barnett gave evidence to show that in a number of cases investigated by the Society for the Prevention of Cruelty to Children the cause of the horrible filth of the houses and their necessarily insanitary condition was not poverty (the inmates having wages of from £1 to £2 weekly) but that the wages were spent on strong drink, and so the mother was unable and unwilling to keep her house fit for habitation. Mr. J. S. Oswald (chairman of the Belfast board of guardians) said that the workhouse graveyard was well sewered, and all burials were made under the Public Health Act. His experience satisfied him that at the Abbey Sanatorium for Consumptives splendid work was being done. Dr. John McLiesh (visiting medical officer of the union infirmary) said that a great many of the phthisical patients admitted into the workhouse hospital were labourers and mill operatives. Dr. A. Gardner Robb, physician to Purdysburn Fever Hospital, said that the present accommodation for infectious diseases was not sufficient. They had sufficient ground at Purdysburn Hospital to enable them so to extend it as to double the accommodation if necessary. Mr. C. J. Milligan, Dr. James Martin, and Dr. R. J. Munn, dispensary medical officers, were then examined as to the condition of their districts. Mr. James M'Kee gave evidence as to the cost of analysing food. He wanted recently to get three samples of milk analysed and was charged 5*s.* for each—that is, 15*s.* in all. He suggested that a nominal fee of 1*s.* should be the amount.

*Cerebro-spinal Fever.*

After an interval of two months since the last case of this disease was reported a young man, 16 years of age, resident at a place in the country midway between the towns of Lurgan and Portadown, was taken ill with this disease and on July 16th was removed to Lurgan Workhouse Infirmary, where he died on July 18th, the attack having been very severe. This is the fourth case in Lurgan Union which has proved fatal. During the week ended July 13th eight cases of cerebro-spinal meningitis were reported in Belfast, as compared with six in the previous week, and since the last meeting of the public health committee on July 11th up to July 18th only four cases had been notified. Although the large number of ten deaths occurred from the disease in the week ended July 13th it did not indicate any fresh increase in the epidemic. A most interesting point has been worked out at the pathological laboratory of Queen's College, Belfast, by Dr. Thomas Houston and Dr. J. C. Rankin. They have found that the cocci in the Glasgow, Edinburgh, New York, Philadelphia, and Hamburg epidemics are identical in their reactions, while, on the other hand, the cocci from the London cases do not react like those present in these epidemics. This raises the very important question as to the exact entity of the so-called posterior basic meningitis. Is it a sporadic form of the epidemic cerebro-spinal fever or is it a variety and not the same species of disease? Clinical experience in Belfast would support the view that posterior basic meningitis is not identical at all with the epidemic form and the work done in Queen's College laboratory is in the same direction. At a special meeting of the city corporation of Belfast, held on July 22nd, it was resolved that for a further period of six months, to date from July 1st, 1907, cerebro-spinal fever shall be a notifiable disease under the Infectious Diseases (Notification) Act of 1889.

July 24th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Large Doses of Cryogenine in Tuberculous Fever.*

M. Crespin, assistant professor at the School of Medicine at Algiers, read a paper before the Therapeutical Society on June 25th upon the results which he had obtained by the use of cryogenine in over 200 cases of tuberculosis. The fever of pulmonary tuberculosis is easily affected by cryogenine, whether given at the commencement of the disease or at its end. The dose to be given varies according to the case, being sometimes more than 2·50 grammes in the 24 hours. Patients suffering from pulmonary tuberculosis seem to have a singular tolerance for the drug and the best time to give it is just before the temperature may be expected to rise.

*The Paris Faculty of Medicine.*

The council of professors of the Faculty of Medicine of Paris has recommended to the Government for the chair of anatomy in the first place M. Nicolas, professor of descriptive anatomy at the faculty of Nancy, and in the second place M. Rieffel. For the chair of the history of medicine and surgery it has recommended in the first place M. Gilbert Ballet and in the second place M. Dupré.

*Military Legislation for those Wounded on Active Service.*

At the Society of French Military Medicine M. Demmler on July 4th gave examples of affections contracted on active service, the sufferers from which were unable to obtain sufficient relief owing to the state of the law bearing on the subject. At the same meeting M. Billet and M. Schuttelaer brought forward various modifications for an alteration in the law. M. Piot and M. Salle recommended an improved organisation of the military thermal hospital stations and the methodical employment of all their therapeutic resources for the treatment of the consequences of wounds. This proceeding, they argued, would largely diminish the incapacity for work from which patients of this class suffer.

*Accumulators on Tramcars.*

M. Gautier has brought before the council of public hygiene the state of things existing on tramcars furnished with accumulators; these accumulators give off penetrating acid vapours which cause the passengers to cough and to sneeze. At certain times matters become absolutely insupportable not only inside the car but also on the platform. Short-circuiting is stated to be the principal cause of the acid vapours being given off. The general secretary of the prefecture of police replied that he had decided to do away with this particular system of traction but that in the meantime the administration will endeavour to take steps to amend matters.

### *The Liability of Medical Men.*

The public are more and more taking up the objectionable position of suing the medical man in charge of a case when any untoward event happens. A case was heard on July 13th of this nature. A young girl, Mdlle. Peyronette, who was suffering from appendicitis, was successfully treated for this disease by Dr. Cormon. Part of the treatment consisted in the application of ice, with the result that the skin of the abdomen was "frost-bitten" and the patient is still suffering from the wounds not being completely healed. Her family sued Dr. Cormon on the grounds that the wounds had been brought about by his carelessness. Dr. Balthazard, the expert whose duty it was to draw up the report and who is an *agrégé* in medicine, summed up the charges made against Dr. Cormon by saying that if he considered it necessary to use ice he should not have used it for such long periods of time together but should have interrupted the application from time to time. Also, said the expert, Dr. Cormon had neglected to put a piece of flannel or linen between the ice and the abdomen. However, he felt himself compelled to add that this latter precaution was not always taken in the hospitals and that though Dr. Cormon had erred he had not been guilty of malpraxis (*faute condemnable*). On his side Dr. Cormon brought forward a number of eminent expert witnesses. Dr. Jalaguier stated in evidence that no limit could be put to the time for which the ice should be applied; it should be kept on until the local phenomena for which it had been employed had disappeared. Dr. Jalaguier, who is surgeon to the hospitals, added that he had often made applications of ice for a much longer period than Dr. Cormon did and was convinced that by them he had saved his patients' lives; some surgeons recommended the use of flannel and others said it was of no use; the appearance of sloughs did not contra-indicate the continued application of the ice, for the rule was, "of two evils choose the least." Dr. Dieulafoy declared that sloughing (*escarre*) could not be foreseen—it might happen in spite of all precautions; the application of ice was an approved method of treatment, and the formation of a slough was a frequently inevitable consequence. Dr. Cormon's treatment had been perfectly proper. Several other eminent surgeons testified to the same effect—viz., Dr. Kirmisson, Dr. Rénon, Dr. Triboulet, and Dr. Routier. Judgment will not be given for a week and the result will be announced in due course.

July 20th.

## COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

### *The Professorship of Pathology in the University of Oxford.*

THE appointment of Dr. Georges Dreyer to the chair of general pathology in the University of Oxford deprives Denmark of one of its most prominent young men of science. In the comparatively short space of nine years, during which time he has been junior bacteriologist to the University of Copenhagen, he has been able to publish an important series of elaborate original investigations, chiefly on such subjects as agglutination, bacterial toxins, the action of rays of light, the sensitiveness of tissues to certain parts of the spectrum, the action and properties of radium, and the decomposition of enzymes. His devising of a very simple and sensitive method for the carrying out of the Widal test by means of dead cultures of the typhoid bacillus procured for him the post of director of the institute for the diagnosis of typhoid fever under the board of health of Copenhagen. He will be greatly missed both by his personal friends and by those at whose disposal he was always ready to place his extensive knowledge and wide reading. Professor Dreyer is well known in Oxford, having studied there in former years. In 1904 he was one of the speakers in the discussion on immunity that took place at the Oxford meeting of the British Medical Association.

### *Death of Professor Edmund Hansen Grut.*

The Danish medical profession has sustained another heavy loss by the death of Professor Edmund Hansen Grut. The deceased, one of von Graefe's favourite pupils, was our first ophthalmologist in the modern sense of the word, and for many years he taught his specialty with exceptional success in the university at the outset as *privat-docent* and subsequently as professor of ophthalmology, after he had succeeded in overcoming the strong opposition in the faculty against the recognition of ophthalmology as a separate subject. Among the many scientific honours that fell to his lot, the one which perhaps he valued most was his being called in 1889 to deliver the Bowman lecture before the Ophthalmological Society of the United Kingdom.

### *Country Holidays for Town Children.*

Among the many charitable institutions tending to improve the sanitary conditions of the poorer classes in Copenhagen none is, perhaps, more original and effective than the way in which an outing in the country is provided for a very large number of the pale and ill-fed children always to be found in a large town teeming with a manufacturing population. In many great cities charitable societies or wealthy individuals do a very considerable amount of good by sending parties of children out for a holiday in the country or at the seaside. Here also similar measures are taken, but naturally only a limited number can be cared for in this way and, what is, perhaps, most to be regretted, the children do not find a real home in their new residence. What makes it possible in Denmark during the summer months to confer the benefit of a home in the country on many thousands of poor Copenhagen children is the unique hospitality of just as many thousands of Danish farmers. For a number of years those good people have offered to take one child or more as their own into their families during the summer holiday without any recompense whatever. The offers are sent to the municipal school board of Copenhagen, and the teachers in the municipal free schools perform the delicate work of picking out those children whose state of health makes it most desirable for them to escape from the city during the heat of summer. The State authorities have recognised the importance of the movement by granting free passes over all the railway lines to any child who has got an invitation to a stay in the country. Some few days ago not less than 18,000 children were in this way sent out of town. Adding to these the poor children cared for by other means the total number may be estimated at 25,000, certainly a very considerable proportion of the indigent school children to be found in a city like Copenhagen, with a population of less than half a million.

### *The Destruction of Rats.*

Our legislature has passed a new law directed against the rat nuisance. As the diseases the spreading of which is generally ascribed to rats, plague being a typical instance, never or hardly ever occur here it is only the destructive habits of the little rodents that have provoked the abovementioned step. But in countries where the said diseases are more often observed it might perhaps prove useful to take similar measures. The State has decided to grant a sum of about £2000 a year for the distribution of rat-killing preparations and has, moreover, directed the municipalities throughout the country to pay about 1*d.* for every dead rat delivered to the proper officials. In order to prevent enterprising individuals from making money by wholesale breeding of rats heavy fines will have to be paid by those against whom it should be proved that they had either bred or imported rats for the purpose of selling them to the authorities.

### *Medical Incomes in Sweden.*

A conspectus of the yearly income of Swedish public medical officers has been prepared by Dr. Andrew Alfvén. For 242 practitioners who had supplied the required information the average income derived from salary and practice was less than £400, varying from about £150 to about £900. The average cost of medical education was computed at £1000. The debt which their professional training has caused our colleagues to incur was on an average £750. The question at what age they had paid off, or thought they would be able to pay off, this debt was answered by 219 practitioners. Of these gentlemen 14 state that they see no way whatever out of the debt, 13 are doubtful, five name a very remote future, 20 had accidentally been freed from the debt, 99 had paid the debt (which in their case averaged less than £600) at the age of 41 years, and 69 (with a debt of £800) hope to be clear of it at the age of 51 years. Against this dark background the conspectus of the income of the Stockholm practitioners stands in a more pleasing light, for 50 per cent. of them have declared an income of more than £500, 12 per cent. an income between £400 and £500, and 28 per cent. an income below £400. It must be remembered that the cost of living is considerably less in Scandinavia and Denmark than in England.

July 22nd.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *Medical Changes at the Vatican.*

IN Dr. Lapponi died the last of the "archiatri Pontifici." The economies effected by the reigning Pontiff in the administration of the Vatican have put an end to the office as well as to the name. There is now only a "medico privato di Sua Santità" (Dr. Petacci) with a "medico consulente" (Professor Marchiafava), neither holding a special position at the Pontifical Court, not even having the special uniform, so elegant and distinctive, which the "archiatri Pontifici" wore on state occasions. Other changes are not less notable. Dr. Lapponi, whom the present Pope's predecessor, Leo XIII., so highly esteemed, was nominated by that able and enlightened Pontiff director of the "servizi sanitari" of the apostolic palaces—an office of peculiar importance at the Vatican, as under Leo's reign there were frequently lodged within its area crowds of pilgrims of every nationality and clime, necessitating the most vigilant sanitary, hygienic, and medical supervision. In this capacity Dr. Lapponi displayed equal intelligence and skill, nowhere more than in the heating apparatus which was admirably effective. Leo XIII., indeed, took a personal interest in this as in all the duties of his "archiatro," down to examining the splendid microscope and the various cultures of micro-organisms which Dr. Lapponi used to submit to him from time to time. Pius X., however, has no such curiosity—caring only less for the wonders of bacteriology than for the novelties of practical hygiene, while contenting himself in the matter of heating with a simple brazier (*caldano*) placed in the anterooms leading to his private apartment. So long as Dr. Lapponi lived Pius made no further change to speak of, except indeed to suppress the lectureship on medical jurisprudence held by his "archiatro" with such acceptance. But now, as I have said, the old directorate of the "servizi sanitari" has been abolished with the title of "archiatro" itself—offices which entitled Dr. Lapponi to be present on state occasions and to be at hand, with control of the requisite *personnel*, should anything requiring medical aid occur at the audiences or receptions. An incident which saddened one of these functions not long ago was the sudden illness and death of a lady who was present—there being no one to give immediate aid except, by mere chance, a foreign physician who happened to be one of the audience. Such of the "servizi sanitari" as have been retained are under the care of two old medical attachés of the Vatican, Dr. Battistini and Dr. Masciarelli, who have no official connexion with the Court, who hardly ever know when or whom the Pope receives, and who have no such part in the disposal of the "servizi" as that formerly exercised by the "archiatro." Something like disorganisation of the "servizi" has been the consequence, the situation being practically this: Two medical men are available for the said "servizio" by day and two by night, either half of the 24 hours being thus provided for in case of medical assistance being required. A considerable number of supernumeraries, mostly medical aspirants, are, moreover, within call in case one or other of the two above-mentioned functionaries should have need of them. Every morning one of the two enters on his duties in the Vatican, visiting all the patients requiring attendance and remaining at his post for some time, in case of further eventualities. In the afternoon the visit is repeated but, as a rule, only *pro formâ*. The two relieve each other every 15 days and each receives 150 lire (£6) a month as a honorarium. Every evening one of the other two enters on his duties, in the winter months at 9 P.M., in the summer months at 10 P.M., and sleeps in the Vatican or in a dormitory close at hand, the said duties terminating at 7 A.M. The honorarium of each is 100 lire (£4) a month. The supernumeraries above referred to may be employed during the day or during the night and are paid at the rate of 60 lire (£2 8*s.* 4*d.*) a month. No medical post at the Vatican can be called lucrative—indeed, for some time past the subalterns have been taking steps to have an increase of pay or its equivalent; but their overtures have not as yet received much attention under the *régime* of economy that has set in. Still, the Cardinal Secretary of State has no difficulty in filling up vacancies—such is the ambition among many young physicians to serve the Holy See. At present the medical staff (leaving out the private physician of the Pope and his consultant) is composed of Dr. Battistini and Dr. Masciarelli for the daily "servizi," Dr. Amici and Dr. Cagiati for the night, and Dr. Gennari, Dr. Prohi, Dr. Salvatori, Dr. Angeli, and others as supernumeraries. The corps of the "Guardie Nobili" has also its physician, Dr. Masciarelli; the Swiss Guard, Dr. Capparoni; and the "Guardia Palatina," Dr. Venturi and Dr. Calisti, all these being directly paid on a small scale by the corps to which they are attached, not by the Vatican itself.

### *The Climatic Stations of Italy, Thermal and Maritime.*

May I draw your readers' attention to an official guide to the "Stazioni Climatiche Termali e Maritime d'Italia," issued by the Association for Promoting the Influx of Visitors? It is an excellent compendium of information likely to be useful to the British, Colonial, or American consultant, and is to be had gratuitously on application to the secretary of the association, Via delle Carrozze, Rome.

July 20th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *The Toxic Effects of Tobacco, Tea, and Coffee.*

EXPERIMENTS conducted by Dr. Gross and Dr. Krämer in the Vienna physiological laboratory with a view of ascertaining the danger or otherwise connected with the use of some modern stimulants have brought out several interesting results. Both human beings and animals were examined and the number of the experiments was 250. It was found that the effects of tobacco are chiefly manifested in the circulatory and the alimentary systems. The action on the stomach is at first to stimulate secretion but this stage is of short duration, and a diminution of secretion then follows not only in the gastric mucosa but also in the salivary glands. The muscular coats of the intestines are irritated so that spasmodic contractions are brought about. Colic, painful spasms of a characteristic type and lasting from five to 17 minutes, and thin motions are recognised effects of excessive smoking. Leucoplakia of the tongue is mostly associated with syphilis and occurs almost exclusively in smokers; its relation to cancer is generally admitted. As regards the action of tobacco on the circulatory system, it was found that the blood pressure rises soon after smoking, the apex beat becomes more distinct, and the pulse increases. Chronic tobacco poisoning has an injurious influence on the arterial walls in consequence of the increased blood pressure; it promotes arterio-sclerotic changes, and the changes in the blood-supply of the nerves of the heart and the eye produce those lesions which are known under the name of tobacco poisoning and which many observers regard as nervous, whereas they are in reality organic lesions. Cigarettes are especially injurious, because the smoke of the paper is added to the action of the tobacco. Tea and coffee are relatively much weaker poisons, at least in the form of beverages, as they are generally used. A cup of weak tea or coffee acts favourably on the secretion of the stomach, so that coffee taken in moderation may be regarded as a stomachic, but excessive coffee drinking continued for a long time produces spasms of the involuntary muscles, tremor of the hands, palpitations, and atony of the stomach. It is difficult to draw a distinction between the effects of the above-mentioned substances, because in general at least two of them, if not all three, are habitually used. When total abstinence from them is not possible a very good plan for combating the ill-effects is found to be the observance of "free days," that is, of days when tobacco, coffee, and tea are either abjured by the patient or else used in very small quantity only. By allowing the organism to rid itself of the accumulated poison and so restoring the original condition of the nervous centres the latter once more become capable of working normally. Patients suffering from disorders of the alimentary or circulatory system due to other causes than the above-mentioned ones have specially to be careful.

### *The Ultra-microscope in Hæmatology.*

Dr. Neumann has communicated to the *Wiener Klinische Wochenschrift* the result of a series of interesting experiments which may prove to be useful in the diagnosis of diseases of the alimentary canal. Using the ultra-microscope, which has a magnifying power of 40,000 diameters, he examined both his own blood and that of other individuals, some of them being in good health and some of them suffering from various ailments. Among the red and white corpuscles he found a varying number of extremely small round granules which were constantly in molecular movement and have been called hæmokonia. During these investigations it was discovered that when fat, such as butter or lard, was added to the food these granules increased very greatly in number so that the whole of the visible field was covered by them. The increase began three-quarters of an hour after the ingestion of fat and reached its maximum about three-quarters to one hour later. For studying these phenomena it was best to use ordinary microscope slides about two millimetres thick. The best time for these experiments was the morning, when the stomach was empty. The patient was given a breakfast consisting of tea, white bread, and about one-third of an ounce of butter, or 13 ounces of milk without anything else. This was to be preferred because nearly all patients can take it. After three-quarters of an hour the first examination of the blood was made and subsequent examinations were made every half hour for four hours after the ingestion of the test meal. The patients on whom Dr. Neumann made his observations were 100 adults and 18 infants. He distinguishes five stages of the appearance of the minute granules. In the first stage there were no granules to be seen; the second he called "few"; the third he called "many," when the granules were to be seen in heaps between every few blood cells; then came "abundant"; and, finally, "enormous numbers." It was difficult to explain every stage but an observer soon became accustomed to the expressions. A remarkable and important difference was found in the preparations obtained from healthy and diseased persons. In all patients suffering from disorders of the stomach or other parts of the alimentary canal the "ultra corpuscles" were either absent or else they appeared at a much later stage than usual—namely, in from five to eight hours and in small quantity.

### *Vital Statistics.*

The report of the Registrar-General for the second quarter of 1907 shows that the abnormal conditions prevailing since the last half year still influenced the general health of the population. The violent changes indicated by the varying barometric and thermometric readings could be followed in the figures for diseases of the upper respiratory tract, and the theory of the intimate connexion between low barometric readings and cerebral hæmorrhage receives some countenance from the figures of the report. No case of small-pox was notified during the quarter in question, whilst infectious diseases, such as measles, scarlet fever, and whooping-cough, were abundant both in the industrial centres and in the rural districts. The average mortality in Vienna for the last half year was 18·2 per 1000, showing a slight improvement as compared with the figures for the first quarter of the year due to the better returns of the second quarter. Epidemic cerebro-spinal meningitis has been notified in 45 cases. It must be added, however, that sporadic cases of this disease are found throughout the whole year in the city. The mortality was low, especially after using the pyocyanase of Dr. Jehle. Diphtheria was decidedly prevalent, every week bringing about 35 or 40 fresh cases; the mortality from this disease was below 5 per cent. in private practice and below 3·5 per cent. in hospital practice. As a rule the virulence of the Löffler bacteria was noted to be rather less than in former years. The weather was unfavourable for patients suffering from pulmonary tuberculosis and the deaths from this cause rose to 120 per week. Typhoid fever has lately assumed a more severe type. Perforation of the intestines seems to appear oftener, whilst hæmorrhage in the mucosa is also very often associated with it, so that Professor Schlesinger in a communication to the Vienna Gesellschaft der Aerzte did not scruple to speak of the "Vienna type" of typhoid fever. The births were about 1000 per week, with 86 stillbirths, and the mortality of infants under 12 months was 107 per 1000 births.

July 22nd.

# Obituary.

## JAMES DUNSMURE, M.D. EDIN., F.R.C.S. EDIN., LL.D.

THE intimation of the death of Dr. Dunsmure was a surprise and a shock to the profession in Edinburgh. He died on July 15th, from sudden heart failure, when to all appearance he seemed to have been progressing satisfactorily after a surgical operation. Dr. Dunsmure was the son of a well-known Edinburgh surgeon who was one of a number of interesting men who flourished in the middle Victorian time. The son, who is the subject of this notice, took the degree of M.B. at Edinburgh in 1867. After completing his education on the Continent he was associated with his father in practice. In 1870 he took the degree of M.D. and a year later was elected a Fellow of the Royal College of Surgeons of Edinburgh. He held a number of appointments as physician or surgeon to various institutions; but the most important post which he held was that of physician to the Royal Hospital for Sick Children. He was an ex-President of his College and it was during his occupancy of the Presidential chair that the University of Glasgow conferred upon him the honorary degree of LL.D. At the time of his death he was a member of the Council of his College and also an examiner for that College on the Triple Qualification Board. He was a member of the various Edinburgh medical societies. His personal qualities were very attractive and endeared him to a large circle of medical and lay friends. He was kindly, genial, and hospitable, with a high sense of honour and good business faculty. He was a keen sportsman: he fished, shot, and played golf and was no mean hand at any of them. He was fond of literature and an elder in St. Andrew's Church. He was, indeed, a man of cultured tastes who enjoyed life and made life pleasant to those around him. His wife died many years ago, about a year after their marriage, and the child of that marriage, a daughter, mourns the loss of a devoted parent. The funeral service was held in St. Andrew's Church and was attended by many of the leading members of the profession in Edinburgh. He was buried in the Dean Cemetery on July 19th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Willem Koster, formerly professor of anatomy in the University of Utrecht.—Dr. Ferdinand Levison of Copenhagen, at the age of 63 years. He was the author of many important papers dealing chiefly with gouty and rheumatic conditions.

# Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly examination in Practical Pharmacy just completed the following gentlemen were successful:—

Stanley Denovan Adam, St. Mary's Hospital; Charles Vernon Anderson and Sydney Vere Appleyard, St. Thomas's Hospital; Noel William Berry, St. George's Hospital; Herbert Stuart Blackmore, University College Hospital; Tobias Rustat Hemsted Blake, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Owen Henry Bowen, St. Bartholomew's Hospital; Thomas Stratford Bradburn, Birmingham University; Gordon Normanby Brandon, St. Thomas's Hospital; Thomas Creswell Brentnall, Manchester University; Roger Orme Bridgman, St. Bartholomew's Hospital; Herbert Hayward Budd and John Head Burdett, St. Mary's Hospital; Howard James Barrell Cane, B A. Cantab., Cambridge University and Guy's Hospital; William Edgar Carter, Leeds University; Henry James Clutterbuck. Middlesex Hospital; Francis Garland Collins, London Hospital; Robert Crawford, B.A. Cantab., and Alfred Edgar Cullen, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Christopher Robson Dudgeon, Westminster Hospital; Percy Albert Stanley Dyson, Guy's Hospital; George James Frank Elphick, St. Mary's Hospital; Cecil Ledward Forde, B.A. Cantab., Cambridge and Liverpool Universities; Ashbury Joseph Stuart

Fuller, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Herbert Gall, St. Bartholomew's Hospital; Harry Leon Gauntlett, King's College; Thomas Sidney Gibson, St. Bartholomew's Hospital; Bernard Goldsmith, Middlesex Hospital; Bernard Grainger Goodwin, Birmingham University; Samuel Richard Harrison, London Hospital; John Eric Hepper, St. Bartholomew's Hospital; Harold Howard Hiley, University College, Bristol; Gordon Alexander Hodgson, Leeds University; John Bowling Holmes, Manchester University; Thomas Robert Lloyd Jones, London Hospital; Latafat Hosein Khan, St. Bartholomew's Hospital; Sohan Lall, Lahore Medical College and London Hospital; Christian Frederic Louis Leipoldt, Guy's Hospital; Mark Lindsey, St. Bartholomew's Hospital; Thomas Parry Lloyd, Walter Everard Lloyd, and Donald Macrae, London Hospital; Horace Lloyd Mann and Edward Hillis Marshall, St. Thomas's Hospital; Godfrey Kindersley Maurice, St. Mary's Hospital; Malcolm Melton Melrose, Manchester University; James Knowles Milligan, St. Thomas's Hospital; Joseph Morrey, Manchester University; Malcolmson Knox Nelson, Guy's Hospital; Burford Noel Norman, University College Hospital; Max Nurick, Liverpool University; Wilfrid George Orchard, St. Bartholomew's Hospital; Henry Locke Paddon, B.A. Oxon., Oxford University and St. Thomas's Hospital; William Robert Parkinson and Adrian Charles Paterson, St. Thomas's Hospital; Percy Vivian Giles Pedrick, L.D.S. Eng, Guy's Hospital; Alfred Spearman Pern, St. Thomas's Hospital; Allan Pimm, University College Hospital; Vivian St. Leger Pinnock, University College, Bristol; D'Arcy Power, St. Bartholomew's Hospital; John Arnoux Prendergast, University of Leeds; Maurice Dyball Price, Guy's Hospital; James Stanley Robertson, London Hospital; Lawrence Lancaster Satow, St. Bartholomew's Hospital; Henry Lionel Hughes Steele, St. Thomas's Hospital; Alan Murray Stuart, St. Mary's Hospital; William Francis Sutcliffe and Wilfrid Percy Tindal-Atkinson, St. Thomas's Hospital; Harold John Austin Tootal, St. Mary's Hospital; Charles Grimshaw Waddington, Leeds University; George Fred Walker, Liverpool University; William Watts, Manchester University; Thomas Alexander Weston, B.A. Cantab., Cambridge University and St. Thomas's Hospital; and Arthur White and Herbert White, St. Thomas's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

*Surgery.*—M. L. Ford (Section II.), London Hospital; R. J. W. McKane (Sections I. and II.), Leeds; G. B. Messenger (Section II.), Westminster Hospital; O. C. H. L. Moll (Section II.), Guy's Hospital; and C. S. Ormsby, St. George's Hospital.

*Medicine.*—E. R. Bastard and F. H. W. Brewer (Section I.), St. Bartholomew's Hospital; J. Brierley (Section I.), St. Thomas's Hospital; M. L. Ford (Section II.), London Hospital; F. B. O'Dowd (Sections I. and II.), Birmingham; H. W. Phillips (Sections . and II.), Manchester; S. K. Poole (Section II.), Guy's Hospital; G. Rollason (Sections I. and II.), Birmingham; and J. S. Ward (Sections I. and II.), Sheffield.

*Forensic Medicine.*—E. R. Bastard and F. H. W. Brewer, St. Bartholomew's Hospital; J. Brierley, St. Thomas's Hospital; L. G. H. Furber, St. Bartholomew's Hospital; A. J. Hopper, Durham; F. B. O'Dowd, Birmingham; R. Rowlands, Glasgow; E. E. C. Vollet, Paris; and C. J. Wolfe, Edinburgh.

*Midwifery.*—A. R. Hardy, Manchester; M. Rathbone, Royal Free Hospital; G. H. Rodolf, London Hospital; and E. E. C. Vollet, Paris.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: E. R. Bastard, M. L. Ford, A. J. Hopper, R. J. W. McKane, G. B. Messenger, E. E. C. Vollet, and J. S. Ward.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates satisfied the examiners:—

### M.D. EXAMINATION.

*Medicine.*—Harold Edward Dyson, B.S., University College; Harry Finzel, B.S., St. Bartholomew's Hospital; Montague Leonard Hine, B.S., Middlesex Hospital; Thomas Lewis, B.S., University College; Reginald Henry Miller, B.S., St. Mary's Hospital; Robert Milne, B.S., London Hospital; Leonard Gregory Parsons, B.S., University of Birmingham; John Robert Steinhaeuser,* B.S., Guy's Hospital; Frederick George Thomson (University medal), University of Cambridge and Middlesex Hospital; and Ralph Osmund Williams, B.S., Guy's Hospital.

*Pathology.*—Thomas Swale Vincent, University of Birmingham, University College, and University of Edinburgh.

*Mental Diseases and Psychology.*—Philip Anthony Mark Green, London Hospital.

*Midwifery and Diseases of Women.*—Vincent Z. Cope, B.A., B.S., St. Mary's Hospital; Charles Dyson Holdsworth, B.S., University College; Eardley L Holland, B.S. (University medal), King's College; Helen Nora Payne, B.S., London (Royal Free Hospital) School of Medicine for Women; and Frank Thomas H. Wood, B.S., B.Sc., Guy's Hospital.

*State Medicine.*—Alfred Henry Gerrard, M.D., University College.

*Tropical Medicine.*—Ernest Edgar Maples, B.S., St. Bartholomew's Hospital and London School of Tropical Medicine.

* Obtained the number of marks qualifying for the University medal.

### M.S. EXAMINATION.

Sidney Arthur Boyd, Charing Cross Hospital; Harold Collinson University of Leeds; Philip Maynard Heath (University medal) and Harold Turley Mant, University College; and Thomas Perrin, M.D., London and St. Thomas's Hospitals.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Paul Lazarus, Dr. Max Mosse, Dr. Leonor Michaelis, Dr. Ludwig Blumreich, and Dr. Josef Heilbron have been granted the title of Professor. Dr. Anton Steyrer, Dr. Jürgans, and Dr. Leo Mohr have been recognised as *privat-docenten* of Medicine.—*Bologna:* Dr. Gaetano Finizio of Naples has been recognised as *privat-docent* of Children's Diseases.—*Bonn:* Dr. A. Hübner and Dr. Gustav Embden have been recognised as *privat-docenten* of Internal Medicine and Dr. E. Zurhelle as *privat-docent* of Midwifery and Gynæcology.—*Breslau:* Dr. Hermann Küttner of Marburg has been appointed to the Chair of Clinical Surgery in succession to Dr. Garré. Dr. A. Neisser, Extraordinary Professor of Dermatology and Syphilis, has been promoted to an Ordinary Professorship. Dr. Hannes has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Brussels:* Dr. Heger is resigning the Chair of Physiology but retains his position as Director of the Solvay Institute.—*Budapest:* Dr. Johann Bokay, Extraordinary Professor of Children's Diseases, and Dr. Alexander Koranyi, Extraordinary Professor of Medicine, have been promoted to Ordinary Professorships.—*Copenhagen:* Dr. O. C. V. E. Petersen has been recognised as *privat-docent* of Anatomy.—*Cracow:* Dr. Roman Nitsch has been recognised as *privat-docent* of Hygiene.—*Innsbruck:* Dr. Alois Lode, Extraordinary Professor of Hygiene, has been promoted to an ordinary professorship.—*Kharkoff:* Dr. K. Elenevski has been recognised as *privat-docent* of Pathological Anatomy and Dr. Jakushevich as *privat-docent* of Medicine.—*Kiel:* Dr. Hermann Pfannenstiel of Giessen has been appointed Ordinary Professor of Midwifery and Gynæcology, in succession to Dr. M. R. Werth who retires.—*Königsberg:* Dr. Draudt has been recognised as *privat-docent* of Surgery and Dr. Hofbauer as *privat-docent* of Gynæcology.—*Lund:* Dr. Overton, Assistant in the Physiological Institute, Wurzburg, has been appointed Extraordinary Professor of Pharmacology.—*Marburg:* Dr. Paul Leopold Friedrich, Professor of Surgery in Greifswald, has been offered the chair of Surgery in succession to Dr. Küttner who goes to Breslau.—*Munich:* Dr. Albert Döderlein of Tübingen has been appointed Professor of Midwifery and Gynæcology in succession to Dr. Winckel, who retires. Dr. Wilhelm Lohmann has been recognised as *privat-docent* of Ophthalmology.—*New York (College of Physicians and Surgeons):* Dr. P. F. Chambers has been appointed Professor of Gynæcology.—*Prague (Bohemian University):* Dr. Ollokar Kutoirt has been recognised as *privat-docent* of Laryngology and Otology, and Dr. Anton Ostrcil as *privat docent* of Midfery and Gynæcology.—*Odessa:* Dr. I. Kiyanitzyn of Kharkoff has been appointed to the chair of Hygiene.—*Prague (German University):* Dr. R. Kretz of Vienna has been appointed Professor of Pathological Anatomy in succession to Dr. Chiari. Dr. Adolf Schenkel, Extraordinary Professor of Ophthalmology, has been granted the title of Professor.—*Rostock:* Dr. Riemer has been recognised as *privat docent* of Hygiene, and Dr. Reinmöller as *privat-docent* of Dental and Oral Diseases.—*Tübingen:* Dr. Menge of Erlangen has been offered the chair of Midwifery and Gynæcology in succession to Dr. Döderlein. Dr. C. Schlayen has been recognised as *privat-docent* of Internal Medicine.—*Vienna:* Dr. Rosthorn of Heidelberg has been appointed to the chair of Midwifery and Gynæcology recently held by Professor Rudolf Chrobak. Dr. Wilhelm Falta has been recognised as *privat-docent* of Medicine; Dr. Heinrich Neumann as *privat-docent* of Otology; and Dr. Paul Clairmont and Dr. Paul Albrecht as *privat-docenten* of Surgery.

THE CHARGES OF THE PUBLIC VACCINATOR.—Public vaccinators' charges have always caused some grumbling on the part of the guardians of the Wandsworth Union. They were among the first to reduce the fee from 5*s.* to 2*s.* 6*d.* A deputation of practitioners attended the meeting of the board on July 18th and Mr. E. R. Badcock, the spokesman, pointed out that each vaccination entailed considerable expense to the medical man who had to make an average of four visits to secure one fee. They left it to the board to deal justly. Mr. Badcock mentioned that the minimum fee was certainly not lucrative. It was not the intention of the Local Government Board that fees should be reduced without regard to circumstances. A lady guardian asked whether the medical men did not receive a capitation fee of 1*s.* for each child on the vaccination officers' lists. Mr. Badcock replied that that was so but pointed out that in each case a communication had to be written and an appointment made to attend. Another member of the board asked whether a well-known local medical man had not stated that he considered 2*s.* 6*d.* a very good price, and whether many persons were not privately vaccinated for that charge. He was informed by Mr. Badcock that private vaccinations at a surgery did not necessitate either correspondence or visits. Although a few members of the board who are opposed to vaccination were opposed to increasing the minimum (which they consider ought not to exceed 1*s.*) the deputation made a favourable impression on the board. It was admitted that members had previously had no idea that a public vaccinator had to do so much for his fee. One of the ladies remarked that she believed in everybody being fairly paid and therefore she proposed a return to the 5*s.* minimum. A gentleman suggested 3*s.* 6*d.*; this would probably have been agreed to had not another member discovered that proposals were out of order since the medical men had not refused to accept the fee of 2*s.* 6*d.* The question was therefore adjourned.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—A quarterly meeting of this College was held on July 16th, Dr. C. E. Underhill, the President, being in the chair. The President made feeling reference to the loss which the College had sustained by the death of Sir William Tennant Gairdner. On a ballot the following candidates were admitted to the Membership of the College: James Ritchie, M.D. Edin., Edinburgh; David Halliday Croom, M.D. Edin., Edinburgh; and Leonard Horner Bryson, M.B., C.M. Edin., St. Andrews. The registrar reported that since the last quarterly meeting of the College 18 persons had obtained the licence of the College by examination. Dr. G. Lovell Gulland, F.R.C.P. Edin., was recognised as a lecturer on medicine. The regulations regarding the single licence and Membership and Fellowship of the College for the ensuing year were approved.—By vote of the College James William Ayres, a Licentiate of the College, was expelled from the College and deprived of his licence to practise, as granted by the College, and of all his rights and privileges as Licentiate.

THE LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—On July 17th Mr. Hudson E. Kearley (Parliamentary Secretary to the Board of Trade) distributed the prizes and certificates to the successful candidates in the library of the Medical College. Mr. Douro Hoare (chairman of the College board) presided, and the Hon. Sydney Holland (chairman of the hospital), the members of the house committee and staff, and a large gathering of visitors were present. Unfortunately Mr. Munro Scott (the warden of the College) was unable to be present as he was only just recovering from an operation; needless to say he was greatly missed by all. Mr. Douro Hoare, in asking Mr. Kearley to distribute the prizes, alluded to the prosperity of the College and thanked Mr. Kearley for his munificent gift to the pathological institute which had enabled the College to develop the branch of its work which promised good results in the future. Mr. Kearley, in addressing the meeting, stated that he had been much impressed by the efficiency of the organisation of the hospital and the good spirit in which it was carried on; while the Hon. Sydney Holland, in his speech, complimented the nursing staff on its efficiency and the hospital upon its nearness to completion The following prizes were then distributed:—Price scholarship in science: £120, Mr. H. B. Walker. Price scholarship in anatomy and physiology: £60, Mr. E. J. Fearnsides. Entrance science scholarships: £60, Mr. F. Sanders; £35, Mr. R. A. Rowlands. Buxton scholarship in arts: £30, Mr. J. W. Clouston; £20, Mr. L. M. Ladell. Epsom scholarship for students of Epsom College: Mr. R. K. Mallam. Medical scholarship: £20, Mr. R. B. Lloyd; honorary certificate: Mr. A. R. Jordan. Surgical scholarship: £20, Mr. P. H. Bahr; honorary certificate: Mr. A. R. Jordan. Obstetric scholarship: £20, Mr. G. Ley; honorary certificates: Mr. G. H. Davy and Mr. D. Loughlin. Duckworth Nelson prize: £10, Mr. R. B. Lloyd; honorary certificate: Mr. A. R Jordan. Senior Letheby prizes: £10 each, Mr. R. A. Rowlands and Mr. J. A. Tsoi-A-Sue (equal) and Mr. F. Sanders; honorary certificates: Mr. W. S. Wildman, Mr. C. C. Beatty, Mr. G. F. Bradley, and Mr. H. B. Walker. Junior Letheby prize: £10, Mr. J. R. C. Stephens; honorary certificate: Mr. E. H. Heaton. Anatomy and physiology scholarship: £25, Mr. E. B. Morley; honorary certificates: Mr. G. Taylor, Mr. R. H. Candy, and Mr. H. Neame. Anatomy and biology scholarship: £20, Mr. H. B. Walker; honorary certificate: Mr. R. A. Rowlands. Minor surgery prizes: £12 10*s.* each, Mr. T. C. Reeves and Mr. E. C. Lindsay; £10 each, Mr. E. H. Rainey and Mr. Stanley Boyd; £5, Mr. H. Neame. Practical anatomy prizes: £6, Mr. E. H. Rainey; £4, Mr. J. G. Mosely and Mr. B. Bernstein (equal). Anderson prizes: Mr. C. W. Huyssen, Mr. H. G. Frean, Mr. W. H. Cam, Mr. S. Gordon, Mr. D. Davies, and Mr. R. D. Brownson; honorary certificates, Mr. E. J. Fearnsides, Mr. Stanley Boyd, and Mr. S. H. Scott. Douro Hoare prize: £5, Mr. E. H. Rainey; honorary certificate, Mr. G. Taylor. Wynne Baxter prize: £5 5*s.*, Mr. C. R. Harvey. Probationers' prizes: First, Miss Janet Scott; second, Miss Susan Mary Somerset; and third, Miss Maude Lizzie Shipman. The prizes and certificates having been distributed, Mr. C. W. Mansell Moullin (senior surgeon to the hospital) proposed a vote of thanks to Mr. Kearley, which was seconded by Dr. Francis Warner (senior physician to the hospital), and carried with much cordiality. After the distribution of the prizes the visitors spent the remainder of the afternoon in the garden of the hospital, where, amongst other attractions, were Dr. Leonard E. Hill's exhibitions of his diving gear and a life-saving apparatus for use in mines, and in the students' club room a new epidiascopic lantern, all of which proved to be very interesting to everyone.

THE VICTORIA UNIVERSITY OF MANCHESTER.—Dr. Graham Steell, who has been appointed by the Council professor of medicine in the University, has had a long and intimate connexion with the Royal Infirmary of Manchester, having acted successively as resident medical officer and physician in that institution, of which he is at present the senior physician. For many years he has been a lecturer, first in the Owens College and subsequently in the University where he has held the posts of lecturer on clinical medicine and also of lecturer on diseases of the heart.—At a meeting of the friends of the late Professor J. Dreschfeld held recently it was agreed to make arrangements for securing some permanent memorial of him in Manchester.—The following appointments have been made: Junior Demonstrator in Anatomy, Mr. A. E. Quine, M.B., Ch.B. Vict.; Demonstrators in Anatomy for the Winter Session, Mr. S. H. J. Kilroe, M.B. Lond., and Mr. T. W. Todd; and Junior Demonstrator in Physiology, Mr. Philip Ferguson, M.B., Ch.B. Vict.—The dental department forms an integral part of the faculty of medicine. Instruction adapted to the requirements of students preparing for the B.D.S. degree and the dental diplomas of the University, the Royal College of Surgeons of England, and other licensing bodies is given during the winter and summer sessions both at the University and at the Victoria Dental Hospital, and the latter is well provided with the appliances necessary for carrying on the work in a thoroughly efficient manner. Two dental surgeons are in attendance when the hospital is open, and are always ready to advise and to direct the students and the demonstrators and house surgeons are constantly present to overlook the work and to render every necessary assistance. Communications concerning classes, fees, conditions of entry, attendance of students, &c., should be addressed to the Dean of the Medical Faculty, the University, Manchester. The Dean of the Dental Hospital may be addressed at the hospital, Devonshire-street, All Saints, where he may be seen on Friday mornings from 9 to 11.30, or at other times by appointment.

THE MAITLAND COTTAGE SANATORIUM: AN INTERESTING SCHEME.—A meeting was held at Kingwood, Peppard's Common, on July 20th which had for its object the promotion of a scheme for the development of the adjoining Maitland Cottage Sanatorium, but the subjects discussed were of more than local interest. The Maitland Cottage Sanatorium has been in existence for some six years under the direction of Dr. Esther L. Carling for the benefit of the poor suffering from tuberculosis in its early stages. Fortified by the experience so gained it is proposed to enlarge the sanatorium, but it is also proposed to append a labour colony and a kindergarten school to the institution. The meeting was presided over by the Hon. F. W. D. Smith, M.P., and speeches in support of the scheme were made by Professor W. Osler, Dr. S. Davies (medical officer of health of Woolwich), and others. Professor Osler expressed a very strong opinion that tuberculosis should be added to the list of notifiable diseases. After quoting the Registrar-General's statistics of mortality from tuberculosis he divided those suffering from the disease roughly into two classes: (1) the advanced cases for which special isolation should be provided; and (2) cases in the early stages of the disease which must be dealt with in sanatoriums similar to the Maitland Cottage Sanatorium. He further dwelt on the educative value of such establishments as spreading among the poor a much needed knowledge of hygiene. Dr. Davies then spoke to the practical results already obtained in the sanatorium. The Woolwich municipality, he said, had sent patients since 1903 to Maitland Cottage, seven beds being now supported by Woolwich. The cases had been sent on his selection, and on their discharge he had observed them after their return to work. Out of 42 patients half, he said, were now at work. There had been ten deaths, and of the balance some had relapsed, some had emigrated, and some had been lost sight of. In his opinion the results of such sanatorium treatment would be even more satisfactory could the patients be hardened by a graduated system of work in a labour colony. A sudden return to ordinary conditions of life and labour was often followed by a relapse, whereas he had noticed that those cases in which it had been possible to continue treatment for over six months had apparently been cured or were continuing to improve. The sum appealed for by Dr. Carling is £10,000, to be applied as follows: £4000 to be invested as an endowment fund; £2000 to acquire a farm adjoining Maitland Cottage for the purposes of the labour colony; and £4000 for necessary extension of buildings and equipment. So far a charge of 30*s.* per week per patient has just covered working expenses. It is estimated that a charge of 15*s.* per week will be sufficient to maintain without loss to the institution those kept on as workers, owing to their labour making them partially self-supporting. This is taking into consideration that the initial expenses are met by the public. The extension proposed will provide accommodation for 50 adult patients and 10 children, for whose benefit it is hoped that a sanatorium kindergarten may be started. It will be seen that an experiment of considerable social interest is here projected and one which it seems to us the public may well be invited to support. It should be added that the site, being on a spur of the Chilterns in beautiful common land, is an admirable one for the proposed extension.

The Second International Congress of Physio-Therapy.—The English secretary, Mr. W. Deane Butcher, Holyrood, Ealing, London, W., asks us to remind our readers that this congress will be held at Rome from Oct. 13th to 16th and that the Italian Minister of Public Works has granted special travelling facilities on all lines both on the mainland and on the islands. Books of coupons will be issued to each member or associate of the congress by the organising committee. The coupons, which will be valid from Oct. 1st to Nov. 15th, will enable the holders to travel at a reduction of from 40 to 60 per cent. on ordinary fares.

A short vacation course of 24 demonstrations and lectures will commence at the Post-Graduate College, West London Hospital, on Monday, August 12th next. Practitioners wishing to join this course or desiring further information about the Post-Graduate College should apply to Mr. L. A. Bidwell, the dean, at the hospital.

An Association of Poor-law Infirmary Matrons.—A meeting was held at the Chelsea Infirmary on July 22nd to consider the advisability of forming an association of Poor-law infirmary matrons. It was agreed unanimously that such an association was urgently required. A constitution was drawn up and it was decided to hold quarterly meetings for the discussion of questions of interest.

Ennoblement of a Bavarian Physician.—Professor Friedrich Müller of Munich, who was invited to accept the vacant chair of medicine in Berlin, but preferred to remain where he was, has received the order of the Bavarian Crown, which implies a patent of nobility.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Glasgow Medical Men and the Notification of Births.*

In the Glasgow Corporation Bill, which came before the Police and Sanitary Committee of the House of Commons on July 17th, there was a clause making provision for the notification of births within 48 hours of their occurrence.—Dr. A. K. Chalmers, the medical officer of health of Glasgow, Dr. Mary T. Gallagher, and other witnesses gave evidence to the committee in strong support of the clause.—Mr. Harold Beveridge, one of the counsel for the Glasgow corporation, explained to the committee that the medical faculty had held a meeting in Glasgow and had intimated that they wished to be relieved of the duty of notification.—After some discussion the chairman of the committee, Mr. Corrie Grant, intimated that the clause must be put in agreement with the Huddersfield clause which imposed the duty of notification upon the medical man in attendance at the time of the birth and also provided for the payment of 1*s.* for each notification.—Mr. Beveridge, after consultation with the members of the corporation of Glasgow, intimated that if the committee insisted on the inclusion of the provision regarding the payment of 1*s.* the promoters would prefer to drop the clause and to wait for the passing of the public Bill which was now before Parliament.—The clause relating to the notification of births was then deleted from the Bill.

### *A Scottish Vaccination Bill.*

Lord Hamilton of Dalzell has introduced a Scottish Vaccination Bill into the House of Lords. It has been read a first time. Its object is "to amend the law with respect to vaccination in Scotland by authorising a statutory declaration of conscientious objection."—Lord Balfour of Burleigh has given notice that he intends to move the rejection of the Vaccination (Scotland) Bill when it comes up for second reading.

### *Public Health Acts (Scotland) Amendment Bill.*

The Public Health Acts (Scotland) Amendment Bill, which Lord Hamilton of Dalzell introduced in the House of Lords on Monday, it is understood, relates to the notification of tuberculosis. Local authorities have felt themselves hampered by the existing law and the Bill, it is believed, proposes certain relaxations in reference to such matters as certificates for children attending school and the carriage of infected persons in public conveyances.

### *The Dairies, Cowsheds, and Milkshops Order.*

The return which was ordered on the motion of Dr. Rutherford showing the names of the councils of boroughs and urban and rural districts which made regulations under the Dairies, Cowsheds, and Milkshops Order of 1885, and also the number of councils of each class which have not any such regulations, has now been published as a Parliamentary paper.

### *The Notification of Births Bill.*

The course of the Notification of Births Bill, which was introduced into the House of Commons by Lord Robert Cecil, is not likely to be so smooth as was hoped by its promoters. It has passed through a Standing Committee of the House, but two pages of amendments have been put down by various members for consideration when the report stage is taken.—Sir Henry Kimber has given notice that he will move the re-committal of the measure "for the purpose of amending it in several respects, particularly by striking out the provision that medical practitioners and midwives should be compelled to furnish the notification in question."

## HOUSE OF COMMONS.

### Wednesday, July 17th.

### *Fees under the Vaccination Bill.*

Mr. Dundas White asked the President of the Local Government Board whether, in view of the fact that under the present law the fees which conscientious objectors to vaccination had to pay for exemption certificates were public moneys, he would say why it was proposed that part of the fees for making the statutory declaration which it was proposed to substitute for these certificates should go to commissioners for oaths and other private persons.—Mr. John Burns replied: Justices' clerks are remunerated by salary and any fees received by them have to be paid over to the fund from which the salary is defrayed. Commissioners for oaths do not receive any salary and consequently they retain the fees paid to them.

### *A Chester Vaccination Order.*

Mr. Mond asked the Secretary of State for the Home Department whether his attention had been called to the fact that in the Chester city police court on Wednesday, July 3rd, 1907, upon the hearing of an information under the Vaccination Acts against Thomas Boden, a threat was made both by the magistrate's chief clerk and the chief constable, that in consequence thereof his licence as a lodging-house keeper might be taken from him; and whether he would take the necessary steps to prevent any such course, seeing that no provision for it was authorised by any Act of Parliament, and the prescribed penalties under the Vaccination Acts were imposed upon the defaulter.—Mr. Gladstone answered: It appears that on the 3rd inst. an order was made for a child of Thomas Boden to be vaccinated within 28 days and no further proceedings had been taken. The clerk to the justices remarked that as Boden kept a common lodging-house possibly the corporation committee might consider the question of refusing the licence if a child was not vaccinated, and the chief constable acquiesced in this remark. No threat was made and the clerk has no control over the committee who deals with the licensing of lodging-houses. I cannot take any action in this matter.

### Thursday, July 18th.

### *Fatal Accidents in the United Kingdom.*

Mr. Laidlaw asked the Secretary of State for the Home Department how many fatal accidents were reported as having occurred in the United Kingdom in the years 1904, 1905, and 1906 respectively.—Mr. Gladstone (by printed answer) replied: The number of deaths in England and Wales due to accident or negligence was 10,902 in 1904 and 10,829 in 1905. The figures for 1906 are not yet available. The number in Ireland was 1675 in 1904 and 1588 in 1905; the number in Scotland in 1904 (the last year for which figures can be given) was 2594.

### *A Vaccination Case at Croydon.*

Mr. Lupton asked the President of the Local Government Board whether his attention had been called to the case of a boy who died in Croydon on April 29th last as the result of vaccination; whether he was aware that the case was investigated by Dr. S. M. Copeman of the Local Government Board; that the child had sores on the head, face, and arms, and lingered in agony for three months; whether he would say if he was still supplying public vaccinators with the same class of lymph; and whether he would lay Dr. Copeman's report upon the table.—Mr. JOHN BURNS answered: I am aware of the case referred to, although I did not know that the child lingered in agony for three months, nor had I been informed of his death. The case was investigated by Dr. Copeman and several medical men. 20 other cases were vaccinated with the same lymph as this child and, so far as was ascertained, the case in question was the only one in which the child subsequently had sores. These sores appear to have been, in fact, "the bromide rash" and to have been due not to vaccination but to doses of bromide of potassium administered by the mother on account of the fits from which the child suffered. It is estimated that 178 grains of the drug were given to him. Dr. Copeman's report is a confidential document and I could not undertake to lay it on the table of the House.

### *Medical Officers and the Factory Act.*

Mr. RAMSAY MACDONALD asked the Secretary of State for the Home Department whether his attention had been drawn to Table 8 in the report of the Chief Inspector of Factories for 1906, wherein it was shown that the number of names of outworkers received was greatly in excess of the number of visits made by the medical officers of health in Sheffield, Belfast, Worcester, Ipswich, Gloucestershire, West Ham, Westminster, and other areas; and what steps he proposed to take to make this inspection efficient.—Mr. GLADSTONE said in answer: Yes, sir, this table was included in the chief inspector's report by my directions with a view to the improvement of the present conditions. The steps that have been taken by me to improve the administration of the home work provisions of the Factory Act by the local authorities have been to issue a circular on the subject to the authorities and the medical officers of health, calling their attention to the importance of a thorough administration of the Act and, secondly, to propose that the matter shall be discussed at a conference with medical officers of health which it is intended to hold at the Home Office in the autumn.

Mr. RAMSAY MACDONALD then asked the right honourable gentleman whether his attention had been drawn to the fact, as shown in the annual report of the Chief Inspector of Factories for 1906, that 634 medical officers of health still neglected to perform the statutory duties imposed on them by the Factory and Workshop Act to report to the Home Office regarding their administration of that Act; and how long the Home Office proposed to allow this neglect to continue.—Mr. GLADSTONE replied: The great majority of the medical officers who have failed to send in reports—namely, 477 out of 634—are in Ireland. Under the Irish Public Health law the medical officers other than the few superintending medical officers are not required to make any report to the local authority and I am advised that it is doubtful how far in consequence any obligation is placed upon them by Section 132 of the Factory Act. As I have already stated, a special circular was sent out last year by the Home Office calling the attention of the local authorities and medical officers to their duties in regard to home work, and I propose to communicate specially this autumn with those local authorities from which no reports were received in 1906. I may add that in many districts from which no report is sent the Factory Act has little or no application, and the omission is comparatively unimportant.

Mr. RAMSAY MACDONALD put a further question to the Home Secretary as to whether his attention had been drawn to the figures in the annual report of the Chief Inspector of Factories, showing that in 1905 in the borough of Stepney the medical officer reported only 32 inspections of outworkers out of 8998 persons notified to be such in the two half-yearly returns, and that the same medical officer reported no inspection in 1904; and why, in view of these facts, he had not authorised an independent inspection at the expense of this borough under Section 4 of the Factory and Workshop Act, 1901.—Mr. GLADSTONE answered: I am aware of the figures referred to and I am communicating with the borough council on the subject. I am advised that it is doubtful whether the powers under Section 4 of the Factory Act cover a case such as this. But in any event for the Factory Department to assume in this and similar cases the duties in respect of home work which the Act imposes on local authorities would be to add greatly to the work of a department already more than fully employed. The whole question of home work is now under the consideration of a Select Committee of this House, and pending its report I cannot see my way to make the considerable change in the administration of these provisions which is suggested by the honourable gentleman.

Mr. RAMSAY MACDONALD, in the last of his series of questions to the Home Secretary, asked whether his attention had been drawn to the fact, as shown in Table 8 of the annual report of the Chief Inspector of Factories for 1906, that in 2194 cases, on the showing of medical officers of health, employers were discovered to have sent in to the district council no list of outworkers as provided by Section 107 of the Act, and that of these no fewer than 753 remained unremedied, a substantial increase being thus shown in the neglect in this respect over last year; whether his attention had also been drawn to the increased number of defects remaining unremedied as regards work being given out to be done in unwholesome premises, and allowing wearing apparel to be made in premises infected by scarlet fever or small-pox; and whether he could inform the House what steps the Home Office was taking to reduce the number of these cases of negligence on the part of so many medical officers of health.—Mr. GLADSTONE replied: I am aware of the figures to which the honourable Member calls attention. Taking the figures which relate to the outworkers' lists altogether, the returns for 1905 seem to me to point to an appreciable increase of activity on the part of local authorities with regard to the collection of these lists. 2500 more lists were received and 18,000 more names of outworkers and the fact that nearly 700 more failures were discovered than during the previous year shows, I think, that the officers of the local authority are following up these cases more carefully than before and perhaps also compiling the returns for the Home Office more carefully. I may call the attention of the honourable Member to the fact that the number of prosecutions taken by the local authorities for failure to send in lists is more than double that of 1904. As regards action under Sections 108 to 110 I do not think that any trustworthy inference can be drawn from the figures referred to in the question for the reasons mentioned in the introduction to last year's return. I have already stated in answer to a previous question the action taken by me with a view to improving the administration of the home work provisions of the Act by the local authorities.

### *Factory Inspection and Industrial Diseases.*

Several interesting matters relating to such subjects as factory inspection and industrial diseases were raised when the House went into Committee of Supply on the vote of £198,735 for salaries and expenses in the Home Office.

Mr. GLADSTONE, the Home Secretary, opened the debate with a statement as to the work performed under the direction of his department. Referring to industrial diseases he said that box-wood poisoning had been added to the schedule of the Workmen's Compensation Act as an industrial disease. There had been a considerable increase in the number of cases of anthrax during the year and this had caused him a good deal of trouble. It was very difficult to find a reason for the increase of the disease. He had examined the statistics as to the amount of wool handled, and there seemed to be no relation between it and the number of cases of anthrax. However, the Home Office was doing everything in its power to investigate the subject, to stimulate inquiry, and to encourage the taking of precautions. A meeting of manufacturers and of officials of the department had been taking place to consider the whole question and had not yet terminated. He could only hope that science would suggest an absolute remedy for this terrible disease. At any rate, the department would do everything to devise methods to safeguard workmen. Then as to the question of poisoning by aniline and nitro and amido derivatives of benzene, a committee had sat to inquire into the matter; and such poisoning had been added to the schedule of the Workmen's Compensation Act. Proceeding, the right honourable gentleman said that at present the Home Office was conducting, or others were conducting on its behalf, many important inquiries. There were four Royal Commissions at work on subjects in which his department was particularly concerned—Commissions on Safety in Mines, on Vivisection, on the Metropolitan Police, and on the Care of the Feeble-minded. There were also a number of departmental committees at work. It was intended to start an inquiry into the conditions of labour in places where a high degree of humidity was combined with a high degree of heat. An inquiry which had taken place into an important accident in a match factory showed that the accident was due to causes which originated before the special regulations were brought into force. A return of accidents arising from poisoning was now available early in each year for the whole of the preceding year. The staff of factory inspectors at the Home Office consisted of 110 senior rank men, 13 lady inspectors, five inspectors for textile purposes, and 40 inspectors' assistants—a total of 168. There were 106,000 factories in the country, and it was thus clear that 168 persons, however zealous, could not possibly cover the multifarious duties cast upon them under the Factory and Workshop Act.

Sir CHARLES DILKE, in his speech, referred particularly to phosphorus poisoning in the match trade and to potter's diseases. With regard to phosphorus poisoning he said that the fact that the rules had to be revised showed that we had not reached a satisfactory position. The case as regarded lead poisoning was much stronger indeed. With regard to lead he regretted to find there had been a retrogression. He proceeded to deal with the disease known as potter's rot. After much consideration the departmental committee on compensation for industrial diseases arrived at the conclusion that it was a trade disease sufficiently distinguishable and specific to employment, but it could not recommend the immediate addition of the disease to the schedule. From the terms in which the report referred to this disease it appeared to him that there had been some change of intention at the last moment. The other potter's disease was lead poisoning, and it gave rise to horrible suffering. He was sorry to observe that the reports showed that there was now an increase of lead poisoning generally and that after there had been a considerable decrease. The cases which were the subject of reports passing through the Home Office in 1905 numbered 205, and in 1906 280. The number of cases of poisoning among women in white lead works was rising rapidly, as the statements of inspectors showed. There was a deplorable incidence of plumbism, among girls in particular, in the subsidiary processes, such as transfer making. There had been an increase in plumbism and of fatal cases in china and earthenware works and, horrible as was the suffering involved, the effect on the child population was worse, for there were an enormous infantile mortality and still-birth mortality due to the extensive employment of married women in the earthenware and china works, as the reports of the medical officers of health showed. The duty of the House was to see what could be done by administration and by law to improve this state of affairs. Certain minor defects were pointed out in the existing regulations and he imagined they had been, or would be, remedied. He alluded to such matters as the proper washing of over-alls and clothes and the removal of the moist conditions under which manufacture was sometimes carried on. The increase of lead-poisoning cases could not be explained away and the principal medical inspector dealing in his report with the preparation of hollowware used these terrible words: "All workers at this process become infected." Sir Charles Dilke went on to deal with the controversy as to the use of leadless glaze. Had not the Home Office, he asked, called for reports from Dr. Thorpe and Dr. T. Oliver, and had they not reported in favour of leadless glaze? Some of the Government departments, he regretted to say, did not now insist in their contracts that leadless glaze articles should be supplied to them.

Mr. BRACE urged that if colliery owners did not provide themselves with rescue appliances and breathing apparatus for use in mine disasters within a reasonable time compulsion should be employed to make them do so.

Mr. TENNANT pointed out that in some trades cases of poisoning had occurred from the inhalation of naphtha vapour, and he referred to a case which had been under treatment in the Glasgow Western Infirmary by Dr. Finlayson as an instance of the effect of the vapour on the internal organs. He urged that naphtha poisoning should be scheduled under the Workmen's Compensation Act as an industrial disease.

Mr. HERBERT SAMUEL (the Under-Secretary of State to the Home Department) replied to various points which had been raised in the discussion. It was no doubt lamentable that the figures in lead poisoning again showed an upward tendency. Each case meant a terrible amount of human suffering and it was but a poor consolation to say that compensation would be paid. The number of cases last year was 632, against 519 for the previous year—a considerable increase; but it should be noted that in 1899 the number was 1268 and in the year 1900 it was 1058. Therefore they had the consolation of knowing that the average number had been reduced by something like 50 per cent. since that time. Although the reduced figures might give some satisfaction they in no sense afforded any reason for the relaxation of efforts to stamp out industrial diseases. The condition of things could not be described as satisfactory until they had been reduced to an absolute minimum. During the past year the Home Office had endeavoured to cope with this question. They had made regulations for the safety of workers in the trade of grinding paints and colours. The earthenware trade regulations were about to be overhauled, and it was hoped that this would effect a large reduction in the cases of lead poisoning. He went on to say that the fish-curing industry was being made the subject of a special inquiry with a view to decide what would be the best mode of revising the regulations with regard to . The inquiry would specially include the question of sanitation which was one of great gravity. The medical inspector's reports on this industry were voluminous but such portions of them as could properly be published would be issued with the report of the inquiry. The Departmental Committee on Industrial Diseases regretted that it could not recommend the scheduling of fibrosis of the lungs, although it was a disease which could be definitely traced to certain industries. In its early stages it was indistinguishable from ordinary cough or bronchitis, and the result of scheduling it would be prejudicial to workmen who might lose their employment on mere suspicion that they were developing the disease. The view of the Committee was supported by the Grinders' Trade Union which urged the Committee not to schedule the disease. Dr. J. S. Haldane took the same view and said that to schedule the disease would be disastrous to the tin mines of Cornwall. Dr. Oliver, one of the greatest authorities on dangerous trades, took the same line and said that on the whole it was not to the advantage of the workmen that this disease should be scheduled. With regard to the suggestion that naphtha poisoning should be scheduled, the Departmental Committee had come to the conclusion after visiting a number of indiarubber factories where the naphtha poisoning was alleged to have taken place that there was no industrial disease due to naphtha. The suggestion of the medical evidence was that the poisoning attributed to the naphtha was due to carbon bisulphide.

### *Vivisection.*

Mr. **SMEATON** (who at a later stage of the proceedings moved the reduction of the vote by £100) complained that the vivisection law of 1876 was habitually disregarded and in some cases flagrantly violated. There was need for greater vigilance in this matter. For the past three years out of 89 581 operations on animals only 93 were made the subject of inspection at a cost of 2550 guineas. That was simply ridiculous—a flagrant waste of public money. There were two inspectors, one getting 500 guineas and the other 330 guineas. These gentlemen, although not at all times officers, received whole-time fees. The inspections were inefficient and far too rare. He considered that the Home Office took no steps to detect or investigate cases of unlicensed vivisection, consequently unlicensed operations would go on. Whereas great jealousy had been shown during the debate in regard to the inspection of workmen, dumb creatures were, in melancholy contrast to this. made the victims of men, who, although they ought to be restrained by the law, were convicted by the Blue-book of gross illegality and positive inhumanity and cruelty. He suggested that the inspectors should be increased in number and the Home Office should be put in a position to judge whether they had conducted their inspections efficiently

Mr. **AKERS-DOUGLAS**, as one who had held the office of Home Secretary, said that his experience of the Vivisection Act was that its administration as well as the conduct of the inspectors was most humane. He was certain that there was nothing like undue cruelty.

Mr. **SMEATON** (intervening) said that he never imputed it to the inspectors that they condoned cruelty but that they did not take the opportunity of examining the cases.

Mr. **AKERS-DOUGLAS** replied that the honourable Member had urged that sufficient care was not taken in granting licences. His experience went to show that every care was taken to see that licences were not scattered broadcast but were granted only to those who were authoritatively recommended.

Mr. **GLADSTONE**, in reply, said that the question of vivisection raised matters of extreme importance and complication. He could only, like his predecessors, exercise such common-sense as he possessed in the endeavour to secure the observance of the law with no want of humanity, but keeping sentiment with considerable strictness within the bounds of reason. It was impossible, he suggested, to carry matters in relation to this subject further pending the report of the Royal Commission. He assured Sir Charles Dilke that there was, and would be, no retrogression in the policy of the Home Office in regard to lead poisoning. They would do all in their power to stem the increase in the number of cases. With regard to life-saving apparatus in mines it was necessary at present to proceed with caution.

The debate on the Home Office Vote had not been concluded at 11 o'clock when it was automatically adjourned.

## FRIDAY, JULY 19TH.

### *Infantile Mortality in Summer.*

Mr. **SUMMERBELL** asked the President of the Local Government Board whether infantile mortality among the poorer classes usually rose greatly in the latter part of the summer and early autumn; whether the mortality would be reduced if parents who were unable to pay for a medical man for their children would apply for medical relief at an early stage of the children's illness; and whether he would advise the guardians to give all facilities to such parents to obtain medical relief for the children, and not to make it a debt or to offer it on condition that the parent went into the workhouse.—Mr. **JOHN BURNS** furnished the following written reply: I am aware that there is usually an increase in infantile mortality in the latter part of the summer and early autumn, especially in hot seasons, and it may be accepted, I think, that competent medical advice and treatment at an early stage of the illness would tend to reduce the mortality. I have, however, no reason to suppose that guardians are unwilling to afford medical relief for children whose parents are unable to provide it, or that persons properly entitled to receive medical relief are deterred from applying for it by the considerations referred to in the last part of the question. If my honourable friend is aware of any cases of failure to give relief to the infants of parents unable to provide it, and will inform me of the particulars of such cases, I will consider them.

## MONDAY, JULY 22ND.

### *Soldiers Succumb to Heat.*

Mr. **FELL** asked the Secretary of State for War whether he could give the age of the two privates, Doyle and Sproute, of the 4th Argyll and Sutherland Highlanders, who were stated to have died from the heat on July 16th after the sham fight at Irvine Moor and the average age of the other 35 men who had to go to the hospital on the same occasion.—Mr. **HALDANE** answered: Private Doyle was 47 years of age and Private Sproute 44 years. Only 11 other cases due to heat were treated and all had returned to duty by the 18th. The average age of these men was 23 years.

### *Rabies in Rhodesia.*

Mr. **RIDSDALE** asked the Under Secretary of State for the Colonies whether a consignment of dog muzzles had been recently ordered by the Rhodesian Administration for the purpose of stamping out rabies among native dogs.—Mr. **CHURCHILL** replied: It appears from the report of the Medical Director for 1906 that rabies, which first appeared in Southern Rhodesia in 1902, became more prevalent and more generally distributed in 1906 than in any previous year. Regulations were accordingly enacted with regard to the muzzling of dogs and other measures calculated to check the disease, and 20,000 muzzles have been ordered for distribution to natives. The chief native Commissioner of Matabeleland reports that the Matabele are much alarmed at the spread of the disease and are killing their own dogs in large numbers.

### *Inoculation for Plague.*

Mr. **JOHN ROBERTSON** asked the Secretary of State for India whether inoculation for the plague continued to be practised in India in general and the Punjab in particular.—Mr. **MORLEY** gave the following reply: In all provinces inoculation is offered to the people and is performed free of charge by the district medical staff. In the Punjab of late it has been accepted by increasing numbers. In April last over 21,000 persons were inoculated in that province. The extent to which the remedy is used must necessarily rest with the people themselves, as no one is inoculated against his will.

### *The Southern Hospital, Carshalton.*

Mr. **CLELAND** asked the President of the Local Government Board whether he was aware that a hospital called the Southern Hospital had been erected near Carshalton in Surrey by the Metropolitan Asylums Board; that the hospital was finished at the end of 1906 at a cost of more than £180,000 for expenses of erection, and that it was standing entirely unused at considerable expense of maintenance and danger of deterioration; whether there were any medical purposes to which it could be applied for the alleviation of infectious diseases; and, if so, whether he would direct the Metropolitan Asylums Board to find some use for this institution.—Mr. **JOHN BURNS** answered: I am aware that the managers have erected this hospital for fever cases and that it is not at present used for that purpose. The question of its use for other purposes has not been lost sight of either by the managers or by the Local Goverment Board, and will be again considered as soon as circumstances permit.

### *Mentally Deficient Prisoners.*

Mr. **ALDEN** asked the Secretary of State for the Home Department whether there were any statistics to show the number of prisoners placed under observation because of their mental condition; what was the policy of the department towards the number who might be classified as irresponsibles; and whether he would be willing to grant a return of such prisoners in all our chief prisons.—Mr. **GLADSTONE** replied: Both in local and in convict prisons those prisoners who are not certifiably insane but are unfit through mental deficiency for the ordinary penal discipline form a separate class and are specially treated. In the year 1906–07 the numbers were: in local prisons 355 and in convict prisons 107. The policy of the Prison Commissioners is to place these prisoners under the special charge of the medical officers of the prisons and to keep them continuously under the personal care of selected warders. The medical officers regulate their discipline and diet and allow them such employment as is suited to the condition of each individual. In addition to those so classified there are other prisoners temporarily under observation to ascertain their mental state.

### *Royal Commission on Sewage Disposal.*

Mr. **MITCHELL-THOMSON** asked the Secretary of State for the Home Department when the final or further report of the Royal Commission on the Treatment and Disposal of Sewage, which was appointed in 1898, was expected to be ready.—Mr. **JOHN BURNS** (who replied) said: I understand that the Royal Commission hopes to issue a further report before the end of the year. I also understand that the investigation of the disposal of trade effluents when not mixed with sewage, which will form the subject of the final report of the Commission, has been commenced.

## TUESDAY, JULY 23RD.

### *Anti-typhoid Inoculations in India and South Africa.*

Sir **WILLIAM COLLINS** asked the Secretary of State for War whether any official statistics existed in regard to anti-typhoid inoculation of British troops serving in India or in South Africa; if so, whether he would lay them upon the table; whether any order had been issued by the Commander-in-Chief in India in reference to anti-typhoid inoculation; and, if so, whether he would state its terms.—Mr. **HALDANE** replied (by printed answer): A large number of returns relating to anti-typhoid inoculation have recently been received both from India and South Africa and the work of compiling this information in statistical form is at present in progress, but some considerable time must necessarily elapse before the work is completed. Anti typhoid inoculations are being largely carried out in India under the general direction of the Commander-in-Chief, but the War Office is not aware of the terms of the specific orders issued by him.

### *The Plague in India.*

Mr. **O'GRADY** asked the Secretary of State for India whether he wa aware that the estimates given by the Indian Statistical Department of the plague victims in the year 1904 varied between highest and lowest in round figures 200,000; and whether he would look into the administration of this department with a view to the matter presented for publication being made intelligible and consistent.—Mr. MORLEY replied: The extreme variation to which my honourable friend calls attention is due to the fact that the higher figure refers to the whole of India, including Native States, and the lower one to British India only. The figure which I quoted in replying to a question on July 8th was taken from a special return recently published by the Government of India and differs from the figure given in its annual sanitary report, from which the statistics given in the Moral and Material Progress Report and the Statistical Abstract are taken. I have asked for an explanation of the discrepancy.

### *The Prevention of Cruelty to Children Bill.*

Mr. COURTHOPE asked the Prime Minister whether, in view of the death-rate amongst young children from burning and overlying, he would afford facilities for the passage into law of the Prevention of Cruelty to Children Bill during the present session.—Sir HENRY CAMPBELL-BANNERMAN answered: The time has not yet come to decide on the Bills for which facilities will be given. I believe this Bill has not yet received a second reading.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

**Bonney, Victor**, M.S., M.D. Lond., F.R.C.S., M.R.C.P., has been appointed Hunterian Professor at the Royal College of Surgeons of England.

**Boycott, A. E.**, M.D., B.S. Oxon., has been appointed Gordon Lecturer on Pathology at Guy's Hospital.

**Collie, R. J.**, M.D., C.M. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, to be attached to County Court Circuit No. 43.

**Cope, V. Zachary**, M.D., B.S. Lond., has been appointed Resident Medical Officer at the British Lying-in Hospital.

**Kerr, Harold**, M.D., Ch.B. Edin., D.P.H. Camb., has been appointed Assistant Medical Officer of Health of the City of Newcastle-upon-Tyne.

**Jones, Richard**, M.B., M.S. Edin., D.P.H. Camb., has been appointed Medical Referee under the Compensation Act for the County Court Circuit of Blaenau Festiniog and Portmadoc.

**Leslie, W. Murray**, M.D., M.S. Edin., has been appointed Medical Referee under the Workmen's Compensation Act in the City of London.

**MacMyn, J.**, M.D., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kirkcudbright District of the county of Kirkcudbright.

**Paul, V. G. J.**, M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Harwich District of the county of Essex.

**Pearse, T. F.**, M.D. Brux., F.R.C.S. Eng., M.R.C.P. Lond., D.P.H., has been appointed Health Officer to the Corporation of Calcutta.

**Steell, Graham**, M.D. Edin., F.R.C.P. Lond., has been appointed Professor of Medicine in the University of Manchester.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

**Birmingham Workhouse Infirmary.**—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

**Bradford Children's Hospital.**—House Surgeon. Salary £100.

**Bradford Poor Law Union Hospital and Workhouse.**—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

**Brighton and Hove Hospital for Women.**—House Surgeon, unmarried. Salary £80 per annum, with apartments, board, gas, coal, and attendance.

**Cairo, School of Medicine (Egyptian Government, Ministry of Education).**—Assistant to the Professor of Pathology. Salary £E. 320 per annum.

**Cambridge, Cambridgeshire Lunatic Asylum**, Fulbourn.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

**Cancer Hospital**, Fulham-road, London, S.W.—Two Assistant Anæsthetists. Honorarium of 25 guineas each.

**Cardiff Infirmary (General Hospital).**—House Physician for six months. Salary £50, with board, residence, and laundry.

**Carmarthenshire Infirmary.**—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

**City of London Hospital for Diseases of the Chest**, Victoria Park, E.—House Physician, for six months. Salary at rate of £50 per annum, with board, washing, and residence.

**Coventry and Warwickshire Hospital.**—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, washing, and attendance.

**Devon County Asylum.**—Assistant Medical Officer. Salary £140, with board, apartments, and laundry.

**Devonport, Royal Albert Hospital.**—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

**"Dreadnought" Hospital**, Greenwich.—Pathologist. Salary £100 per annum.

**Egypt, Public Health Department.**—Sub-Inspector of Ophthalmic Hospitals.

**Gloucester, General Infirmary and the Gloucestershire Eye Institution.**—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

**Hospital for Sick Children**, Great Ormond-street, London, W.C.—House Physician, House Surgeon, Assistant Casualty Officer.

**Hull, Royal Infirmary.**—Casualty House Surgeon. Salary £50, with board and lodging.

**Ipswich, East Suffolk and Ipswich Hospital.**—Third House Surgeon. Salary £50 per annum, with board, attendance, and washing.

**Kensington General Hospital**, Earl's Court, London, S.W.—Junior Resident Medical Officer for six months. Salary £40 per annum, with board, washing, and residence.

**Lancaster, Royal Lancaster Infirmary.**—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

**Lincoln County Hospital.**—Junior House Surgeon, unmarried, for six months. Salary £30, with board, residence, and washing.

**Liverpool, Royal Southern Hospital.**—Resident Pathologist and Registrar. Salary £100, with board and residence.

**London University.**—Roger's Prize, 1908.

**Loughborough and District General Hospital and Dispensary.**—Resident House Surgeon. Salary £100 a year, with rooms, attendance, board, and washing.

**Metropolitan Asylums Board Fever Hospitals Service.**—Assistant Medical Officers, unmarried. Salary £180, rising to £240 per annum, with board, lodging, and washing.

**Mickleover, Derby County Asylum.**—Junior Assistant Medical Officer. Salary £120, rising to £150 per annum, with apartments, board, washing, and attendance.

**Norfolk and Norwich Hospital.**—House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also Two Assistant House Surgeons for six months. Salary £20, with board, lodging, and washing.

**North-Eastern Hospital for Children**, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

**Norwich, Jenny Lind Infirmary for Children**, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, residence, and laundry.

**Paisley, Infectious Diseases Hospital.**—Assistant Medical Officer. Salary £100 per annum, with board, washing, and attendance.

**Perth Royal Infirmary.**—House Surgeon. Salary £60, with board.

**Plaistow Fever Hospital**, London, E.—Second Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, &c.

**Plymouth, South Devon and East Cornwall Hospital.**—House Physician for six months, renewable. Salary £50, with board, residence, and washing.

**Queen Charlotte's Lying-in Hospital**, Marylebone road, N.W.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

**Rochdale and District Deaf and Dumb Society.**—Missioner.

**Royal Dental Hospital**, Leicester-square.—Morning House Anæsthetist. Salary £50 per annum.

**Royal Eye Hospital**, St. George's-circus, S.E.—Refraction Assistant. Salary £40 per annum. Also Clinical Assistants.

**Salford Royal Hospital.**—Junior House Surgeon. Salary at rate of £50 per annum, with board and residence.

**Southport Infirmary.**—Residents' Senior House Surgeon. Also Junior House and Visiting Surgeon, unmarried, for six months. Salary of Senior at rate of £90 per annum, and of Junior £70 per annum, with residence, board, and washing.

**Stafford, Staffordshire County Asylum.**—Assistant Medical Officer, unmarried. Salary £150, rising to £200, with apartments, board, and washing.

**Stockport Infirmary.**—House Surgeon. Salary £100 per annum, with board, washing, and residence. Also Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

**Sunderland Infirmary.**—House Physician and Pathologist, also House Surgeon. Salary in each case £80 per annum, with board, residence, and washing.

**Taunton, Taunton and Somerset Hospital.**—House Surgeon. Salary £100 per annum, with board, lodging, and laundry. Also Resident House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

**Teignmouth Hospital**, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

**Western General Dispensary**, Marylebone-road, N.W.—Honorary Anæsthetist.

**Whitehaven and West Cumberland Infirmary.**—Resident House Surgeon. Salary £120 a year, with board and lodging.

**York Dispensary.**—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

**Zanzibar Government.**—Bacteriologist. Salary £300 a year, rising to £400, with free quarters, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Market Harborough, in the county of Leicester.

## Births, Marriages, and Deaths.

### BIRTHS.

**Geddes.**—On July 20th, at Redhouse, South Gillsland-road, Edinburgh, the wife of A. Campbell Geddes, M.B., of a son.

**MacDonald.**—On July 18th, at Argyll-square, Oban, the wife of Duncan MacDonald, M.D. & C.M., of a son.

### DEATHS.

**Hodge.**—On July 21st, at Kuling, China, the Rev. Sydney Rupert Hodge, M.R.C.S., L.R.C.P., aged 48.

**Stocker.**—On July 18th, at Hillingdon, John Sherwood Stocker, M.D. Lond., M.R.C.P.

# Notes, Short Comments, and Answers to Correspondents.

## THE AMERICAN QUACK.

IN our issue of Feb. 3rd, 1906, p. 347, we commented upon the doings and advertisements of the American quack who calls himself C. J. Macaura. His field of action at that time was apparently Bradford and Newcastle-upon-Tyne, but now he seems to have moved to Hull. In the *Hull Mail* of June 18th is a paragraph quoted from the *Bradford Daily Argus*. It is headed in the usual deceptive way of quacks who quote the names of electrical experts to further their own ends, "Remarkable Statement by Edison." The statement attributed to Edison is as follows: "It is my firm belief that if electricity was thoroughly understood by the medical profession and scientifically applied, humanity would be the gainer to such an extent that the old system of drugging would soon be forgotten." The rest of the article is mainly devoted to saying that "Dr. Macaura" does understand electricity and can apply it scientifically, with, of course, the usual amazing cures. Internal evidence seems to show that the paragraph was written by Macaura himself, for we read, "We have right here in Hull many striking examples ......" How any respectable newspaper can be a party to inserting such matter we cannot understand.

## A PLEA FOR VENESECTION.

*To the Editors of* THE LANCET.

SIRS,—It is always unwise to criticise the treatment of a case you have not seen, so that I will not follow "G.P.'s" example (THE LANCET, July 20th, p. 204) in referring to the recent sudden death in the House of Commons except as a peg on which to hang some remarks on venesection. A case which I saw in consultation with Dr. J. Russell Ryan and Mr. G. R. Radmore last October well illustrates the excellent result which often attends upon a timely venesection. The patient was a fat, flabby lady, aged 64 years. The history I obtained was that except for some mental excitement she was in her usual health in the morning. About noon she was seized with right-sided twitching and an hour later she became unconscious. When we met in consultation at 2.30 P.M. the patient was comatose, with conjugate lateral deviation of the eyeballs and right-sided convulsive movements. Her face was cyanosed. I at once advised venesection and she was bled to ten ounces. Even while the blood was running the movements abated and soon afterwards ceased and the cyanosis disappeared. The patient gradually regained consciousness and in the course of a week or ten days she was much in her usual condition physically, though mentally she remained rather feeble. I think that this was certainly a case in which life was saved by venesection. In these cerebral cases much depends on the promptness of the withdrawal of the blood; if there be delay irretrievable damage may be done. In a case which I saw earlier in the autumn the patient, a man, aged 65 years, after having been comatose for 48 hours regained consciousness as soon as he was bled and lived for two or three months, dying eventually from uræmia. So that though early venesection should be the rule there are cases in which it does good, even though the patient has been unconscious for many hours.

It is to be hoped that the present generation of medical men will estimate at its true value a method of treatment which was much abused at one time but which fell into undeserved neglect.

I am, Sirs, yours faithfully,

July 22nd, 1907. F. DE HAVILLAND HALL.

## NOISY STREETS AND HOUSE PROPERTY IN LONDON.

AT a meeting of the Street Noise Abatement Committee on July 20th it was stated that the motor-omnibus and traction-engine traffic had, in the course of two years, depreciated the value of house property in London to the extent of fully £6,000,000, whilst every week of the existing state of things was adding thousands of pounds to the loss that was being incurred by property owners.

## TRUE CLEANLINESS.

*To the Editors of* THE LANCET.

SIRS,—One fertile source of contempt in the Anglo-Indian for the Indian native is the absence of the pocket-handkerchief as an intermediary in the blowing of native noses. The native retorts that his practice is far cleaner than that of the northern European who puts a quantity of uncleanly stuff—most likely full of disease germs, one may conclude—to ferment in a hot, steamy breast pocket. Just the same contempt is felt for the same reason by the north Italians for the south Italians—in particular for the Neapolitans. This race, being quick and intelligent, long before official science, discovered the infectiousness of tuberculosis; in fact, *crede experto*, a person with a mere bronchial catarrh, unless he conceal it, cannot hire a room for love or money among the peasantry round about Naples. How can we fail to correlate these facts and infer, unless science disprove it by actual observation, that the wipe, now also universal among the masses who do not scent it as a rule, is a source of consumption, catarrh, &c., among them? Pocket-handkerchiefs are also not made use of by the Chinese, who, as regards personal cleanliness, from lowest to the highest—as, e.g., in brushing the teeth, using toothpicks, cleansing the mouth and hands before and after meals, and a number of other things—are much more particular than the bulk of our people. In their case the short open nose, and absence of hair upon the face, render the practice comparatively unobjectionable, but it would not be tolerated amongst a highly refined people like the English, with long noses, an intolerable amount of thick fur about the face, and a climate which develops an excessive amount of nasal mucus.

The only prophylactic that one can suggest is some good antiseptic scent, to be used on the pocket-handkerchief even more scrupulously by the plebeian of the slum than by the peer.

I am, Sirs, yours faithfully,

W. W. STRICKLAND, B.A. Trin. Coll., Cambridge.

Singapore, June 21st, 1907.

## AUGUST BANK HOLIDAY ON THE CONTINENT.

TICKETS at reduced fares available for eight days will be issued by the Great Eastern Railway to Brussels, July 31st, August 1st, 2nd, 3rd, and 5th, and to Zürich, viâ Harwich and Antwerp. For visiting the Hague, Scheveningen (the Dutch Brighton), and Amsterdam for the dead cities of the Zuyder Zee, special facilities are offered viâ the Company's British Royal Mail Harwich-Hook of Holland route. For the convenience of passengers tickets dated in advance can be obtained at the Liverpool-street Station Continental Inquiry and Booking Offices.

## A DISCLAIMER.

*To the Editors of* THE LANCET.

SIRS,—I crave the courtesy of your columns to warn medical men against one who is obtaining access to their hospitality and assistance by pretending that he is sent to them by me. The man in question (aged about 40, dressed as a ship's surgeon) does not deserve the charity he claims.

I am, Sirs, yours faithfully,

ARTHUR KEITH, M.D. Aberd.

London Hospital Medical College, July 22nd, 1907.

◆

*Alpha.*—The figures refer, no doubt, to some form used in the institution for purposes of registration. They may indicate the character of the neuritis, but that depends upon the method of registration adopted by the hospital. There is no form of registration common to all such institutions. We have not the slightest idea what the figures mean nor is the board in question intended to convey either to the patient or to his friends the nature of his disease. The board is for the use of the hospital authorities and their staff.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (29th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY (30th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY (31st).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY (1st).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (3rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &C.

**MONDAY** (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**TUESDAY** (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

**WEDNESDAY** (31st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

**THURSDAY** (1st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**FRIDAY** (2nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

**SATURDAY** (3rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 25th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| July 19 | 30·13 | N.E. | ... | 113 | 78 | 55 | 56 | 57 | Fine |
| " 20 | 30·12 | E. | ... | 113 | 75 | 57 | 58 | 62 | Fine |
| " 21 | 30·15 | E. | ... | 72 | 69 | 56 | 57 | 59 | Overcast |
| " 22 | 29·95 | S.W. | 0·07 | 105 | 71 | 57 | 59 | 59 | Raining |
| " 23 | 29 89 | N.E. | 0·66 | 87 | 62 | 52 | 52 | 53 | Cloudy |
| " 24 | 29·94 | E. | ... | 104 | 67 | 51 | 54 | 58 | Fine |
| " 25 | 29 91 | E. | ... | 105 | 64 | 52 | 53 | 58 | Fine |

**During the week marked copies of the following newspapers have been received:**—*Welsh Pioneer, Manchester Guardian, Glossopdale Chronicle, Townsville Daily Bulletin (Queensland, Australia), Belfast News Letter, Northern Whig (Ireland), Liverpool Courier, Birmingham Post, Bristol Mercury, Leeds and Yorkshire Mercury, Freeman's Journal, Dublin Times, Hull Mail, Dublin Independent, Leeds Post, Sheffield Independent, Leicester Post, Westminster Gazette, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Association for Promoting the Training and Supply of Midwives, Lond., Secretary of; Apothecaries' Society, Lond., Secretary of; Dr. S. B. Atkinson, Lond.

**B.**—Mr. E. J. Burdon, Lond.; Dr. R. A. Buchanan, Glasgow; Messrs. Burroughs, Wellcome, and Co., Lond.; Bailbrook House, Bath, Medical Superintendent of; Sir John F. H. Broadbent, Lond.; Messrs. J. H. Booty and Son, Lond.; Mrs. Bill, South Croydon; Messrs. J. Bale, Sons, and Danielsson, Lond.; Mr. T Bell, Lancaster; Buxton Mineral Water Baths, Manager of; Dr. D. T. Barry, Cork.

**C.**—Dr. Harry Campbell, Lond.; Mr. J. C. Creswell. Billericay; Chelsea Hospital for Women, Secretary of; Canterbury, His Grace the Archbishop of, Lambeth Palace; Clapton Nursing Home, Matron of; Mr. F. W. Clarke, Chorlton-cum-Hardy; Cardiff Infirmary, Secretary of; Messrs. Crossley and Co., Lond.; Clerical, Medical, and General Life Assurance Society, Lond., Secretary of.

**D.**—Mr. M. J. Dawkins, Lond.; Devon County Asylum, Exminster, Medical Superintendent of; Derby County Asylum, Clerk of; Dr. D.; Devonshire Library, Buxton, Manager of; *Deutschen Export Revue*, Berlin; Messrs. W. Dulley and Sons, Wellingborough.

**E.**—East Suffolk and Ipswich Hospital, Secretary of; E C.; Dr. J. Eyre, Lond.; Dr. F. C. Eve, Hull.

**F.**—Dr. L. Fehrsen, Somerset East, Cape Colony; Mr. G. Fock, Leipzig; Messrs. Fassett and Johnson, Lond.; Mr. A. Fraser, Dublin.

**G.**—Mr. E. S. Galbraith, Lond.; Great Eastern Railway Co., Continental Traffic Manager of; Glasgow University, Clerk to the; Dr. T. M. Guthrie, Rockferry; Mr. H. B. Gardner, Lond.

**H.**—Mr. E. Hart, Lond.; Horncastle's Advertising Offices, Lond.; Mr. P. Harper, Lond.; Messrs. F. A. Hardy and Co., Lond.; Dr. G. H. Harrison, St. Neots.

**J.**—Dr. A. H. James, Blaenavon; Mr. H. Johannes, Lond.; The Jetter and Scheerer Co., Lond.

**K.**—Messrs. R. A. Knight and Co., Lond.; Messrs. Kutnow and Co., Lond.

**L.**—Dr. A. Lewthwaite, Nordrach; Messrs. Lee and Nightingale, Liverpool; London Hospital Medical College, Lond., The Warden; Dr. H. A. Lediard, Carlisle; Surgeon L. Lindop, R.N., Portsmouth; Loughborough General Hospital, Secretary of; Dr. T. Leahy-Lynch, Lond.

**M.**—Mr. Sam Manickam, Saidapet; Mr. F. Herbert Marshall, Middlesbrough; Dr. H. D. McCulloch, Bournemouth; Dr. A. Manes, Berlin; Manchester Hospital for Consumption, Secretary of; Messrs. Maple and Co., Lond.; M.D.; Messrs. Fred Mundy, Gilbert, and Co., Birmingham; Metropolitan Ear, Nose, and Throat Hospital, Lond., Secretary of; Captain J. P. Murphy, R.A.M.C., Liverpool; Dr. W. J. Morrish, Lond.; Dr. J. D. Mortimer, Lond.

**N.**—Mr. J. O. Newman, Lond.; North-East London Post-Graduate College, Lond., Dean of; Newport and Monmouthshire Hospital, Newport. Hon. Secretary of; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.

**O.**—Dr. R. Ollerenshaw, Lond.

**P.**—Mr. Y. J. Pentland, Edinburgh; Pool's Advertising Agency, Lond.; *The Prescriber*, Edinburgh; Mr. J. Prosser-Evans, Lond.; Messrs. G. Pulman and Sons, Lond.; Plumbers, Worshipful Company of, Lond.; Paisley Corporation, Clerk to the; Poplar and Stepney Sick Asylum, Lond., Manager of; Messrs. Peacock and Hadley, Lond.; Mr. A. F. Palmer, Lond.; Mr. J. J. G. Pritchard, Dewsbury.

**R.**—Dr. V. H. Rutherford, Lond.; Mr. A. W. Mayo Robson, Lond; Royal National Orthopædic Hospital, Lond., Secretary of; Royal Victoria Infirmary, Newcastle-on-Tyne, House Governor of; Messrs. Rajkissen and Co., Ambala, India; Royal British Nurses' Association, Secretary of; Dr. C Rundle, Fazakerley; Royal Albert Hospital, Devonport, Secretary of; Messrs. E. J. Reid and Co., Lond.; Royal Society of Medicine, Lond.; Mr. J. D. Rees, M.P., Harrow; Dr. R. R. Rentoul, Liverpool; Messrs. Reynolds and Branson, Leeds; Royal Waterloo Hospital for Children and Women, Lond., Organising Secretary of.

**S.**—Dr. D. W. Samways, Topsham; Professor W. J. Simpson, Lond.; Mr. R. A. Sagoon, Bombay; Sanitary Wood Wool Co., Lond.; School of Medicine, Cairo, Director of; Smith's Advertising Agency, Lond.; Stockport Infirmary, Secretary of; Southport Infirmary, Secretary of; Mr. G. B. Stocker, Lond.; Mr. W. G. Sutcliffe, Margate; Mr. A. Sheppard, Lond.; Mr. F. Sherburn, Market Harborough; Scholastic, Clerical, &c., Association, Lond.; Mr. H. Spender, Lond.

**T.**—Taunton and Somerset Hospital, Secretary of; Messrs. Raphael Tuck and Sons, Lond.; Dr. J. B. Tombleson, Lond.; Traffic Office, Bad Nauheim, Manager of; Miss H. Todd, Lond.

**U.**—University of London, Principal of; Union des Journaux Suisses pour la Publicité, Lucerne; United Services Medical Society, Lond., Hon. Secretary of.

**V.**—Mr. A. V. Vise, Holbeach; Mrs. J. H. Verini, Beckenham.

**W.**—Mr. J. Williams, Bradford; West Bromwich District Hospital, Secretary of; Whitehaven, &c, Infirmary, Secretary of; Dr. D. Cbalmers Watson, Edinburgh; Wensleydale Sanatorium, Aysgartb, Secretary of; Messrs. F. Williams and Co., Lond.; Messrs. J. Whitaker and Son, Lond.; Dr. J. D. Williamson, Mountpottinger; Messrs. Wilson and Son, Lond.

**Z.**—Mr. Louis Zettersten, Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. R. Aubrey, Brent Knoll; Monsieur F. Alcan, Paris; Mr. Averay-Jones, Liverpool; Dr. W. D. Anderson, Oban; A. M. P.; A. D H.; A. J. D.

**B.**—Mr. E. Baker, Birmingham; Dr. A. M. Buchanau, Glasgow; Mr. A. E. Blades, Leicester; Dr. G. Bontros, Mansourab, Egypt; Mr. Bailey, Paignton; Mr. W. D. Betenson, Lond.; Buxton Urban District Council, Accountant of; Lieutenant F. E. Bissell, R.A.M C., Portsmouth; Birmingham University, Secretary of; B. T.; Mr. G. Sherman Bigg, Lond.; Mr. G. P. Butcher, Plymouth.

**C.**—Dr. W. F. Croll, Aberdeen; Messrs. E. W. Carling and Co., Lond.; Mr. W. Caw, Perth; Messrs. A. H. Cox and Co., Brighton; O. B. M.; C. R; Dr. R. D. Clarkson, Falkirk; Dr. T. Carruthers, Kilbarchan; Clapton Medical and Surgical Home, Lond., Secretary of.

**D.**—Mr. A. J. B. Duprey, Mayaro, Trinidad; Doctor, Boscombe; Mr. F. H. Dommisse, Piquetberg; Mr. H. Davies, Pretoria; Mr. E. Darke, Lond.; Dr. W. Dougal, Pittenweem; Mr. A. C. Dixon, Darlington.

**E.**—Mr. J. Evans, Maidstone; E. A.

**F.**—Dr. C. M. Flide, Lond.; Dr. A. Forsyth, Welling.

**G.**—Dr. L. S. H. Glanville, Lond.; Messrs. R. W. Greeff and Co., Lond.; Messrs. W. Green and Sons, Edinburgh; Messrs. Guyot, Guenin, and Son, Lond.; G. D.; G. J., Godalming; Dr. E. A. Gates, Lond.

**H.**—Mr. F. N. Hitchcock, Lond.; "Hill Crest," South Croydon; Mr. J. Heywood, Manchester; Messrs. R. Hogg and Son, Lond.; Messrs. Hastings Bros., Lond.; Messrs. T. Holland and Son, Lond.; Mr. R. Harrison, Lond.; H. J.; H. S.; Mr. J. Taylor Hughes, Altrincham; Mr. C. C. Haviland, Frimley Green; Mr. J. Hoole, Parwich.

**I.**—Isle of Wight Rural District Council, Newport, Clerk of.

**J.**—Dr. M. J. Johnston, Smithborough; J. C.; J. J. E. R.

**K.**—Dr. F. Kinnear, Royton; Messrs. Knight, Frank, and Rutley, Lond.

**L.**—Mr. H. K. Lewis, Lond.; Mr. T. Llewellyn, Ogmore Vale; Leicester Infirmary, Secretary of; Staff-Surgeon G. Ley, R.N., Lond.; Dr. J. Liddell, Harrogate.

**M.**—Dr. R. MacLelland, Matlock; Mr. G. Metcalfe, Skelmersdale; Mr. J. G. Milnes, Gislingham; Mr. J. Murray, Lond.; Messrs. J. Menzies and Co., Glasgow Mr. R. Mosse, Berlin; Medicus, Gravesend; Mr. H. Morris, Lond.

**N.**—Mr. G. P. Newbolt, Liverpool; Nottingbam General Hospital, Secretary of; Dr. J. Nunan, Cardiff.

**O.**—Dr. C. Oldfield, Leeds.

**P.**—Dr. T. S. Picken, Paisley; Mr. C. E. Paget, Northampton; Dr. P. Paterson, Glasgow; P. H. S.

**Q.**—Dr. M. A. de Quadros, Cheromo, Central Africa.

**R.**—Mr. C. A. Ryde, Brussels; Dr. T. H Rockwell, New York; Miss Ringwood, Haslemere; Royal Surrey County Hospital, Guildford, Secretary of; *Rochdale Observer*, Manager of; Royal Devon and Exeter Hospital, Exeter, Secretary of; Registered Nurses' Society, Lond., Secretary of; R. A.

**S.**—Dr. F. M. Sandwith, Lond.; Mr. E. Simpson, Epperstone; Seltzogene Patent Charges Co., St. Helen's; Surveyor, Shoe-lane; Messrs. W. B. Saunders Co., Lond.; Salford Royal Hospital, Secretary of; Mr. J. W. G. Smith, Colwyn Bay; St. John Ambulance Association, Lond.; Messrs. Street and Co., Lond.; Stockport Union, Clerk of; Dr. W. Stewart, Hirst.

**T.**—Miss H. W. Tweedie, Longniddry; Mr. J. Tbin, Edinburgh; Dr. H. H. Thomson, Bridge of Weir; Dr. S. Taylor, Lond.; Teignmouth Hospital, Secretary of; T. O. B.; Messrs. Toler Bros., Lond.

**V.**—Victoria Hospital, Barnsley, Secretary of.

**W.**—Mr. B. Wheeler, Manchester; Messrs. W. Wood and Co., New York; Mr. S. Willcox, Thame; Dr. O C. Withrow, Fort William, Ontario; Miss Wiggett, Petworth; Wonford House, Exeter, Secretary of.

**Y.**—York County Hospital, York, Secretary of.

---

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | |
|---|---|
| One Year ... ... ... | £1 12 6 |
| Six Months ... ... ... | 0 16 3 |
| Three Months ... ... | 0 8 2 |

| TO THE COLONIES AND ABROAD. | |
|---|---|
| One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 17 4 |
| Three Months ... ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.**

# Presidential Address

ON

# SCIENCE IN ITS APPLICATION TO NATIONAL HEALTH.

*Delivered at the Seventy-fifth Annual Meeting of the British Medical Association on Tuesday, July 30th, 1907,*

By HENRY DAVY, M.D. Lond., F.R.C.P. Lond.,

PHYSICIAN, ROYAL DEVON AND EXETER HOSPITAL.

[At the commencement of his address Dr. Davy welcomed the Association to the ancient city of Exeter, a city whose first charter dates from Henry II. Passing on to the medical history of Exeter he mentioned the founding of the hospital in 1741 by Alured Clarke, the then dean. Among prominent members of the hospital staff he referred to John Blackall, and Thomas Shapter, physicians; and John Sheldon, Samuel Barnes, John Harris, and John Haddy James, surgeons, the last-named having been President of the Association when under the title of the Provincial Medical and Surgical Association it met in Exeter 65 years ago. Continuing, Dr. Davy reminded his audience of the enormous changes which had occurred in these 65 years. The chief change was due to the growth of knowledge founded upon systematic experiment—i.e., "scientific" knowledge, and it is this knowledge which distinguishes the medicine of the day from the medicine of the early "forties." Dr. Davy went on to refer to the Darwinian theory and showed its influence upon medicine, for, as Darwin stated, "the only way to keep any organ or structure in health is by proper and adequate use thereof." He continued :—]

As I have before stated, Darwin shows "that the only way to keep any organ or structure in health is by proper and adequate use thereof," and I think that the value of this axiom has not been sufficiently recognised in considering the question of physical deterioration and its remedy, especially as it affects the muscular system ; for many changes have taken place since 1842 in the environment of the individual and of the nation, all tending to reduce the muscular work done by the people, and in advance of everything else which has effected this result I would place the extended use of machinery. In every department of work, in every trade and business, each succeeding year finds us depending more and more on "labour-saving machines," every new machine tending more and more to replace muscular work, until at last in some manufactures the operative has little or no work for his muscles to do except just attending to the machine driven by steam or electricity by which all the work that used to be the result of his muscular activity is now accomplished. But, in addition to the development of machinery, many other causes have contributed to the same end. The nation has become much more urban than it used to be. Villages and country towns, with all their facilities for healthy muscular work in the open air, have diminished; big centres of trade and manufactures have increased in population. Railroads have extended networks of lines in every direction, so that travelling is made easy without any exertion, and the inhabitants of our towns have, in addition, tramways and omnibuses to take them from their houses to their work without the necessity of even the exercise of a long walk. Then, too, our habits have changed. We have perhaps as great a love of games as ever, but much of the muscular work has been taken from them. Your rich man sits or stands whilst his grouse or his pheasants are driven towards him, instead of walking the moors or woods to find them ; the poorer man pays his entrance money to see a few experts playing cricket or football instead of exercising his muscles by playing the game himself ; whilst some of the most manly and best exercises, such as wrestling, boxing, and fencing, have almost become extinct throughout the country. As Henry Drummond so well puts it, "Vigour of limb is not to be found in common life, we look for it in the gymnasium ; agility is relegated to the hippodrome ; once all men were athletes, now you have to pay to see them."

Now this subject, relating to deficient use of the muscles, opens out a very wide question, affecting as it does the work of every other organ of the body, and it is needful that our profession should recognise its importance. For a large part of the metabolism of food takes place in the muscular system, so that the amount of food required by the body, the amount of animal heat to be produced and to be got rid of, the amount of excretory products to be eliminated by the excretory organs, should all depend upon the amount of muscular work done ; and much disease would be prevented, and in many cases much better health enjoyed, if this fact were more thoroughly understood and acted upon. It is somewhat of a reflection on our profession that we often treat our patients with drugs when all that they require is more exercise or less food. Also, that we are leaving it to various professors of Swedish exercises to teach us how much can be done to restore health, and to keep people in good health, by properly regulated muscular work. History repeats itself ; the first physicians appointed by the authorities of the ancient Greek towns were trained gymnasts from more or less celebrated gymnasia, who treated their patients with regulated diet and regular exercise ; and if the English in the twentieth century are to keep themselves free from physical deterioration, our profession must put themselves in the van of a similar movement and show how necessary physical culture and muscular activity are to a nation of "muscular degenerates." It should not be left to professors of Swedish exercises to lecture on physical culture, to advertise its sovereign virtues, and to direct the kind of exercise to be used. I will go further, and say that if it is left entirely in non-professional hands much harm will eventually result ; for no treatment requires more care and supervision than Swedish exercises when used by anæmic patients or those with weak conditions of the heart ; and although I believe that these exercises are of the very greatest value to healthy men, and can with great advantage be used by all who are compelled to lead a sedentary life, yet in a condition of ill-health they ought only to be used under the careful supervision of a qualified and experienced medical man.

Physical culture is, in my opinion, one of the most pressing questions of the day, for it is by it alone that we have a proper remedy for the state of muscular degeneration which is so prevalent. It ought to be considered by every educational authority, for by its use dwellers in city and country alike can have their muscular systems built up and developed to a healthy standard. There is no need that any collection of children who are not diseased should become a class of muscular degenerates. It is a very serious matter, when you come to think of it, that a considerable number of healthy, well-fed boys from some of our best public schools are too physically undeveloped to join the army as officers until they have undergone a course of physical culture after leaving school, and that large numbers of children in the elementary schools are diseased and physically undeveloped. For the children of to-day are the men and women who compose the nation of to-morrow, and if they are diseased and physically deteriorated the nation in the near future will be equally affected.

Is it sufficiently recognised how greatly the future of the nation is decided during the school life of its children ? It is while the children are at school that you must give them the foundations on which the whole of their future—physical, intellectual, and moral—is to be reared, and if they are not shown how to develop their bodies and keep them in health, the only chance of their learning it has been missed. It is also essential to see that during their school life they are not exposed to contamination from disease, and this can only be done by placing them under the supervision of a trained and qualified medical man, as is done in Japan and in nearly every other country in Europe except England. As the Committee on Physical Deterioration emphatically recommends, every school in the country without exception should be under the supervision of a properly trained medical officer. It should be his duty, with his assistants, to examine every pupil, to see who are healthy and who are diseased, who are fit for a course of physical culture and who are not, and generally to look after the health and development of the children. How necessary such medical supervision must be is proved by the fact that Dr. Alfred Greenwood, medical officer of health of Blackburn, in an examination of 388 school children of that town, found that no less than 54 children were affected with some form of tuberculosis, and of this number 34 had tuberculosis of one or both lungs.

I would recommend to the notice of all educational authorities the example of Rugby School and of the scheme originated there by Dr. C. Dukes, one of the best-recognised authorities on the health of public schools. There every new boy undergoes a carefully recorded and rather full physical examination and the games and exercises that he "may play" and "ought to be made to play" are also recorded. But we must go further than this system of games. I quite agree that every boy in every school ought to have a course of physical exercises prescribed for him, adapted to his particular need, and that he should not be allowed to play any game unless he has attained a certain level of muscular development; then we should have a very different condition of affairs from that just revealed. In a public school it would be a point of honour to reach the necessary degree of muscular development to play games, and in the elementary schools the physical exercise would itself develop the muscular tone which is wanted. I would urge on the educational authorities that they are responsible for the development of the pupils' bodies as well as their minds and that it is of little use to the nation to bring up men with their minds stored with facts but their bodies left ill-developed and generally degenerate. Playgrounds are as necessary for the healthy development of our children as school buildings, gymnasia as class rooms, trainers in physical exercises as school teachers, and if every board school cannot be provided with these necessary adjuncts they should, at all events, be provided in certain areas, so that physical development is provided for and insisted on for all children. Games are, of course, most valuable for those who play them, but there is no muscular activity in watching others play them; moreover, few games bring into action the whole of the muscular system with the same completeness as does a properly devised system of physical exercises. Games, too, are impossible in many cases for the pupils in the elementary schools in large cities, whereas physical exercises take up little room and there are few places in which arrangements might not be made for carrying them out in connexion with the existing schools, to the great and lasting benefit of the individual child and of the nation at large. We may see the great value of gymnastics, games, and physical exercises by following the history of Japan during her recent development. I will quote this history to you from a lecture recently delivered under the auspices of the University of London by Baron Kikuchi, one of Japan's experts in education.

[Dr. Davy next referred to the example of the Japanese who, when they emerged from feudalism, found that the physical training of the young began to be neglected and therefore established Government training in physical exercise, gymnastics now being taught in every school for from three to six hours per week. Of equal importance with physical culture (which should by no means be left in entirely unprofessional hands), continued Dr. Davy, comes the question of the feeding of the people and this question, with its bearing upon infant mortality, has a great influence upon the health of the nation. He continued :—]

I know of nothing more worthy of the attention of this great Association and of its powerful organ in the press than that duty of pressing on the statesmen of the day the need for making elementary physiology and hygiene a compulsory part of the education of all the children in this country. We shall never be able to deal satisfactorily with physical degeneracy and the prevention of disease so long as the majority of the men and women in the nation remain in absolute ignorance of the very rudiments of science and hygiene. It is not creditable to our educational systems that a so-called "well-educated" gentleman, who may one day be called on to legislate for his country in Parliament, should be able to go through one of our best public schools and take a degree at one of our oldest universities without the least knowledge of the composition of the atmosphere and without the most elementary ideas as to food and hygiene; but so it is, and I despair of improving the health of this country and of preventing a mass of preventable disease so long as this anomalous condition of education exists. For in the prevention of disease we as a profession can do little or nothing unless we have the support of public opinion behind us to assist in carrying out the precautions which science shows to be necessary. It is, I think, greatly to our credit that we have accomplished as much as we have in diminishing disease under the present condition of affairs; that we can do little or no more until public opinion is aroused in the matter I will illustrate by asking you to consider the history of pyæmia, typhoid fever, and tuberculosis. These three diseases have been proved to be caused by the development of certain micro-parasites which have all been discovered within the last 30 years. Pyæmia and typhoid fever are, as you know, in the category of diseases which come under the supervision of the Act which deals with infectious diseases, while tuberculosis is not; so that in the latter case we have no means of enforcing the precautions which we know to be necessary.

Now, in the case of pyæmia, the magnificent work done by Lord Lister has shown the world not only the cause of this disease but the actual precautions by which it may be prevented, the use of these precautions depending on the surgeon and his assistants and on no one else. And so well are these precautions carried out that pyæmia has become almost extinct within these past ten years throughout the civilised world, with a saving of life and misery which cannot be calculated. Typhoid fever is also becoming more and more infrequent, and this is generally credited entirely to the improved sanitation and better water-supply of the country. But I think these are by no means the chief factors in the case, for there are plenty of insanitary houses still remaining in England and the water-supply is too often open to the gravest suspicion. The decline of typhoid fever is largely due to the fact that medical men have done much to destroy it. Its bacilli nowadays are never allowed a chance, at any rate in this county. In every case of the slightest doubt, days before there is any possibility of making a certain diagnosis of typhoid fever, it is the invariable practice thoroughly to disinfect the patient's stools; and it is to this constant and systematic destruction of its bacteria by disinfectants that, I believe, the diminution of typhoid fever is chiefly due; and that if these measures of disinfection are continually carried out this disease will in a few years be as rare as its kindred disease, pyæmia. How greatly it has disappeared in this neighbourhood and with what loss to our profession may be gauged by the following facts. My immediate predecessor in practice told me that 50 years ago he frequently made £300 a year from patients suffering from this disease. I can tell you that for the past 15 years I have not taken £50 a year from this source and that during the past few years my income from typhoid fever has hardly averaged five guineas a year.

Far different is the history when we come to examine tuberculosis, the exact nature of which as an infectious parasitic disease was discovered by Koch 25 years ago. Now at the onset I know that there are still a few members of our profession who do not like to class it with the other infectious diseases, fearing that the effect of so describing it will bring great hardship on the consumptives in England. I admit that under ordinary conditions the consumptive is not infectious to other people coming merely in contact with him, and that if he will take the necessary precautions with his sputum he may not be infectious to anyone. We all, too, recognise that he is not infectious unless his sputum contains the tubercle bacilli, and that that is often not present, if at all, until very late in the disease. But, nevertheless, consumption is an infectious disease in precisely the same manner as is typhoid fever. In the one you have the bacilli of infection in the sputum and in the other in the motions, and unless you disinfect them both the infection becomes generally distributed.

Now compare the history of tuberculosis with those of typhoid fever and pyæmia. I am quite aware that it has decreased under the influence of improved sanitation during the past few years, but yet its prevalence is even now appalling. Approximately, its death-roll in Great Britain is 60,000 persons a year; and Dr. R. W. Philip of Edinburgh has shown that the ascertained mortality from consumption may be safely multiplied by ten in order to represent approximately the number of persons living and already seriously affected at the time, so that Great Britain at the present moment contains 600,000 poor patients with a preventable infectious disease, the large majority of whom are bound slowly to die from an illness which will linger on for from two to five years. And worse than all this during a considerable part of this long illness (in the case of the majority of poor patients at any rate) no real effort is made to prevent them from infecting their families or those with whom they come in contact while at work; so that a constant infection is going on of persons around them, and the toll of the death-roll is continuously kept up. I think it is time that we spoke out the truth about this disease with no uncertain voice; for surely it is time that something was done officially in this matter, and that the attempt to stay the ravages of this terrible disease be no longer left to voluntary associations which must of necessity be unable satisfactorily to deal with a task of such magnitude. Are we to admit that tuberculosis alone amongst the infectious diseases is to have no precautions insisted on with regard to disinfection? Are we forever to allow consumptives to disseminate their infectious sputum in the streets of our towns? or are we to allow them alone of infectious patients to stay in any hotel or lodging in England without taking any precautions? Every nation in Europe, except England, has awakened to the need of dealing with this disease on scientific lines, and it is time that we followed their example. I am quite aware of the difficulties which surround the whole question, and I do not wish to put forward my own views as to the measures which are practicable in dealing with the disease. All one-sided statements only tend to obscure the issues and increase the difficulties of the situation. Satisfactory legislation can only be obtained by its careful consideration from many points of view; but is it not the time for the Government to make a careful inquiry into the subject, and that, having obtained the best expert and other opinion available, and having considered the precautions which other countries are taking, it should bring forward legislation to deal with this disease, which yearly destroys nearly 60,000 of our people and brings misfortune and sorrow into some 600,000 homes in our country. For, gentlemen, it is only by careful inquiry and by carefully applying the science of the day, as far as is practicable, that we can hope to do away with a large mass of disease which we already know to be preventable, and it is in this direction that our Association can do much useful service. It is here at these our annual meetings and in the pages of our weekly journal that so much of the truth is arrived at about disease, its causes, and its modes of treatment. It is here that we examine the theories and opinions of individuals, and filter, as it were, the unproved residuum from the truth which is to be of use to the world. But it must remain, after all, with the Government to apply this truth to the legislation of the country and to the everyday life of the people. That it is possible for a Government to do this has been proved by the Government of Japan. You have here a nation which had its own civilisation, and whose people were well educated in Chinese classics and literature, but who were not acquainted with the science which is the distinguishing feature of Western civilisation. For 250 years this people enjoyed peace, and during this time had been able carefully to examine the work being done by other nations. They saw the value of science and scientific developments of the Western world, all of it new to their modes of thought and life; they determined to bring it into their mode of life, and they have done this in a thoroughly systematic manner.

Earlier in this address I quoted to you the systematic manner in which they introduced physical exercises, gymnastics, and games into all their schools, and we can see the value of their system yet further shown in the marvellous freedom from disease which was apparent in their armies during the late Russo-Japanese war. Through the kindness of Admiral White I have been able to make a study of the book of rules which each Japanese officer took into that campaign. They were drawn up by a body of experts, military surgeons, and they deal with almost every contingency likely to be met with in warfare. There has never before in history been so systematic an application of the science of the day to the everyday life of a soldier, nor are there many armies in the world sufficiently educated in hygiene to understand such minute details. But all the children in Japan are taught in their schools the principles of elementary hygiene, and, carrying out the directions given to them, the soldiers marched to victory with less illness from preventable disease than ever occurred in any previous campaign; and they thus gave a demonstration to all nations of the importance of the application of the science of the day in the prevention of disease. If Japan can thus bring science to assist in preserving the health and physique of their nation, England can do the same, or else she must eventually take a back seat in that concourse of nations in which only the fittest will be supreme. In one of his most striking passages Rudyard Kipling says: "We are a great people and very strong, but we build our empire in a very wasteful way—on the bones of the dead who have died from disease!" It is for our profession, gentlemen, as the advisers of the nation on all matters of health, to show how much of this terrible waste can be prevented; and just in proportion as we succeed in doing this, in that proportion shall we be carrying out the highest purpose of our profession in maintaining the health of the individual and in preventing the degeneration of the nation.

# Address in Medicine

ENTITLED

# A PLEA FOR ACCURACY OF THOUGHT IN MEDICINE.

*Delivered at the Seventy-fifth Annual Meeting of the British Medical Association on Wednesday, July 31st, 1907,*

BY W. HALE WHITE, M.D. LOND.,

SENIOR PHYSICIAN, GUY'S HOSPITAL.

[Dr. Hale White, after thanking the Association for the honour done to him in requesting him to give the Address in Medicine, begged his hearers to impress upon the members of the public the debt which they owe to medicine and how the public ought to help to endow professorships for medical research and teaching. Passing to the main subject of his address he said that "sometimes we retard the progress of our science by being afraid to say that we do not know. We are prone to find some explanation and to be content with a false explanation." As an example of this he referred to the subject of gout. All that we really know about gout is that urate of sodium is deposited in some of the tissues and that the blood contains an excess of uric acid. The cause of many cases of neuralgia, sciatica, and bronchitis is set down to gout, but where are the figures from the post-mortem room showing that sufferers from these diseases have deposits of sodium urate or an excess of uric acid in the blood? Others, not thinking that these conditions can be called gouty on such slender evidence, say, "Let us imagine that the gout is irregular ...... or suppressed and then we can ascribe them to it." Others link to this hypothesis the theory that the symptoms of irregular gout are due to excess of uric acid, and, continued Dr. Hale White:—]

Some do this without knowing the amount of uric acid present in the blood of a healthy person, without drawing any distinctions between endogenous and exogenous uric acid, without any attempt to estimate the uric acid in the patient's blood, without any experimental evidence that the injection of uric acid into the blood produces the symptoms in question, and without any thought of the fact that in some forms of leukæmia there is an excess of uric acid in the blood without the symptoms supposed to indicate suppressed gout. This doctrine has become so widespread that even the public tell us that their symptoms are caused by an excess of acid. Having assumed, not proved, that the symptoms the patient has are due to irregular gout and having assumed, not proved, that this is due to an excess of uric acid, the next assumption made is that certain foods cause an excess of uric acid; some say carbohydrates, some say fats, some say proteids, and it would be quite easy for a patient to consult three medical men in turn and if he followed all his diet would be water and nothing else. He who believes proteids harmful is the most artistic, for he has an eye to colour and may, as a concession, allow white meat, although he prohibits red. Where on earth is the justification for this? Are there any experiments showing that steaks lead to more uric acid in the blood than chicken? Have a hundred cases of so-called irregular gout been published and contrasted with another hundred similar in their treatment except that in one series red meat was replaced by an equal amount of white? Surely you will agree with me that all this is not a credit to us as members of a scientific profession. The simple fact that although gout has become much less common the consumption of meat has enormously increased ought alone to make those who forbid proteids pause. The imagination of some has carried them still further. The fact that both gout and chronic osteo-arthritis are long-standing diseases of joints has led them to think that as sufferers from one should be dieted, so those afflicted with the other, hence we find patients who have chronic osteo-arthritis forbidden various articles of food—sometimes, for example, sugar. Looked at calmly this is extraordinary, for there is not an atom of evidence that any particular article of food influences chronic osteo-arthritis. Have we in some of our statements about the harmfulness of particular foods advanced beyond Ibn Haukal, who, in about A.D. 950, describing the inhabitants of Palermo, said: "Their evil habit of eating raw onions in excess; for there is not a person among them, high or low, who does not eat them in his house daily, both in the morning and evening. This is what has ruined their intelligence, and affected their brains, and degraded their senses, and distracted their faculties, and crushed their spirits, and spoiled their complexions, and so altogether changed their temperament that everything, or almost everything, appears to them quite different from what it is." I strongly suspect that in those days onions were a cause of irregular gout.

For many years disordered action of the liver has been invoked to explain certain forms of indigestion known as hepatic dyspepsia. Here, too, medical men have sinned so often that a very favourite diagnosis with the laity is "liver out of order." This is a bad instance of our accepting an explanation which has nothing to support it instead of saying we do not know. The liver may be almost destroyed by new growth or abscess and yet none of these symptoms arise, they have never been produced experimentally as a result of interference with the liver, there is no constant appearance in the liver after death when these symptoms have been present during life, and it has been shown that the so-called cholagogue drugs which experience has taught us benefit these symptoms have no effect on the secretion of bile. In spite of these facts the diagnosis of hepatic dyspepsia has been made, I will undertake to say, many times this day. Everyone who makes it, instead of confessing that he does not know the cause of the symptoms, shuts out from his mind all thoughts as to what can be the correct interpretation of these symptoms and so perhaps retards the progress of knowledge.

A few generations ago physicians taught that blood might come from the gastric mucous membrane, although after death no source for the bleeding could be found. This they attributed to vicarious menstruation, but when it was shown that this interpretation was incorrect the medical profession was not content to say it did not know the cause of the hæmatemesis but said, "Let us suppose it is due to a gastric ulcer"; and accordingly it was stated that gastric ulcer was much commoner in women than in men, and whenever a young woman vomited blood she was, unless some other obvious cause for the hæmatemesis was apparent, said to be suffering from a gastric ulcer. I am sure it will be conceded that many young women have been said to have an ulcer of the stomach solely because they had hæmatemesis. A consideration of the experience gained in the post-mortem room would have shown that morbid anatomy reveals no such excess of gastric ulcers in women as we should have expected if all the cases of hæmatemesis in women were due to an ulcer; and now we know from knowledge derived from the deadhouse, and also from that acquired by seeing the stomach opened during life, that there is a condition, to which the term "gastrostaxis" has been applied, in which blood oozes from the gastric mucous membrane without ulceration, and that this is commoner in women than in men. So simply because instead of saying they did not know and diligently studying these cases in the post-mortem room physicians hastily concluded that they were all examples of gastric ulcer, hundreds of young women have been put through the irksome and deleterious treatment of prolonged rectal feeding for an ulcer which they have not had, and our knowledge of gastrostaxis has been kept back many years.

Sometimes, as we have already seen, when speaking of irregular gout, we attempt to pacify this dislike to acknowledge that we do not know by words which do not really help us at all; in fact, by lulling us into the belief that they explain facts when they do not they lead us to imagine that our knowledge has rock for its foundation when in truth it is built upon sand. For example, a teacher tells his students that alcohol is the cause of the peripheral neuritis from which the woman before him is suffering, but in saying this he fails to explain the remarkable facts that the disease is commoner in women than in men and picks out the anterior tibial nerves before any others. There must be something different in the nerves of women from those of men and of the nerves in women the anterior tibials must be different from the others. Now is the opportunity for the soothing influence of words; instead of being helped to face these facts as inexplicable in the present state of our knowledge we are told that alcohol has a selective action upon these nerves, especially in women, just as lead is said to have a selective influence on the musculo-spiral nerves. But does this help us? Surely not; it merely restates the fact that is evident to everybody; it is no explanation but only an attempt to befog us with words and so possibly to retard the true explanation. Then, further, when reflecting upon the way in which alcohol causes disease we must remember that no explanation is entirely satisfactory which does not explain how it is that some patients—noticeably a few children—have cirrhosis of the liver indistinguishable from that ascribed to alcohol and yet have not taken it, and how it is that, whilst over-indulgence in Munich often leads to a beer-drinker's heart, it rarely does this in London, but often leads to cirrhosis of the liver. It may be that the bodies of the inhabitants of London differ from those of the dwellers in Munich, or the different results may be owing to the different composition of the alcoholic beverages in the two places, but it certainly does not help to say that in Munich alcohol has a selective influence on the heart and in London on the liver. But these are only two or three of the many difficulties that arrest us when we attempt to understand how alcohol causes disease, and which we try to gloss over by the phrase "selective action," as though alcohol were a living being capable of exercising choice. One of the greatest discoveries ever made in medicine will come to pass on the day when the mysteries now concealed by the phrase "selective action" are made plain, and we understand why, for example, the rash of measles comes first on the forehead, that of the scarlet fever on the chest, that of typhoid fever chiefly on the abdomen, and why, of all nerves in the body, the poison of diphtheria is specially harmful to those supplying the palate and the ciliary muscle.

Want of time prevents my bringing forward other instances of the years of delay in arriving at a truthful diagnosis that follow from cowardice in acknowledging that we do not know the cause of many symptoms, but it would not be difficult to do so, especially from among chronic diseases of the joints and diseases of the heart. I notice at the present time an increasing tendency to consider the muscle of the heart to be at fault. I believe that in the past we have not considered this nearly as much as we ought, and probably we have often overlooked disease of the cardiac muscle, but unless we check our clinical work by histology we run great danger of believing disease of the cardiac muscle to be present when it does not exist. I think I could show that the heart has often been said to be feeble or dilated on insufficient grounds and the orthodiagraph will, I think, teach us that we have frequently been in error when we have thought the heart altered in size, just as the clinical use of the manometer has taught us that the estimation of the arterial tension by the finger is not so accurate as we have been inclined to believe. But I have wandered from the point I am trying to press home—namely, that although we may make a diagnosis in the case of many diseases—for example, epilepsy—of which we do not at present certainly know the cause and which we recognise as a definite assemblage of symptoms—we should not make a diagnosis which implies a cause unless we have grounds from the previous experience of ourselves and others for prophesying what will be found at a post-mortem examination made with all the modern aids of histology, bacteriology, and chemistry if the patient died there and then. I quite admit that we shall often have to say we do not know and no doubt our diagnosis will sometimes be wrong, but at any rate our reticence and our mistakes will not retard, but will rather advance, the progress of medicine.

[Inability to confess ignorance is not, however, confined to the medical profession and Dr. Hale White quoted from the writings of Sir Alfred Wills and Mr. Baron Alderson passages showing that witnesses were much inclined to the same vice. He continued:]

Talking of unwillingness to confess our ignorance leads me to think of instances in which, while trying to treat medicine scientifically, we are wofully inaccurate, because we make excursions into sciences in which our training is inadequate. For example, the light and airy way in which some of us play with figures, as though there were no science of statistics, is astounding. Professor Karl Pearson truly says: "Approaching pathological inheritance from the modern statistical standpoint it is almost heartrending to notice the great amount of effort and energy wasted in the collection of data bearing on the inheritance of disease"; but, unfortunately, much effort and energy have been thrown away upon other medical statistics besides those connected with inheritance. Sometimes the very words are used wrongly. I often read at the end of an insurance report a prophecy that the proposer will live to the average age; but this is almost certain, that whatever his age at death may be it will not be the average age. It must be left to expert statisticians to reform technical errors, but it is easy to indicate a few that are obvious. Frequently the mistake is made of dealing with far too few figures; often the very data are wrong, as I have just shown in connexion with hæmatemesis; allowance is rarely made for the number of persons alive at different ages; it is very common to see figures published believed to prove the effect of this or that treatment without any allusion to the rapidity of recovery if no treatment had been adopted, and often the figures do not tell us what we desire to know. For example, statistics are published showing the frequency of recovery after some difficult operation. In the first place, for these to be of any practical use we want to be able to contrast them with figures showing the mortality among those not submitted to operation. Next, we ought to compare the expectancy of life among those who are not operated upon with that of those who submit to operation, for it is clear that if the operation considerably shortens the life of many the total harm done by the operation may be more than the total good. Then, again, although it is interesting to know the degree of perfection to which any particular surgeon can carry the difficult art of operating, and so lower the mortality, yet, as all the patients cannot possibly go to the one skilful man, it is far more important to know the usual mortality among operating surgeons. These are only some of the points we have to consider; but let us take as an illustration the operation for a gall-stone impacted in the common duct. When trying to estimate the propriety of this we must bear in mind that when impacted in the common duct a gall-stone rarely causes death. From the years 1854 to 1894 only one patient not operated upon died in Guy's Hospital from an impacted gall-stone, the total number of deaths from all causes having been over 20,000. Naunyn has only once known the condition fatal. Some distinguished surgeons have operated upon several cases with complete success, but, on the other hand, Mr. J. Bland-Sutton, doing the right thing, and taking the figures not only of an individual surgeon, but from the chief London hospitals, and the Leeds and Newcastle infirmaries, finds that out of 35 cases operated upon ten died, or nearly 30 per cent. But it might be urged that, bearing in mind the risk of fatal cholangitis and the tediousness and discomfort of passing an impacted gall-stone naturally, it is worth while to submit to operation, but before coming to this conclusion we must proceed very carefully, considering the high mortality following operation. Further, it is notoriously difficult to distinguish between an impacted gall-stone and malignant disease, so that in estimating the benefit that follows operation we must take into account the shortening of life owing to operation among those who are operated upon in the belief that they have a gall-stone, although they really have malignant disease. Again, figures have been published showing that after excision of a cancer from the stomach a few patients were alive at the end of four or five years, and it is assumed that their life has been prolonged; this may be so, but we ought, before concluding that it is wise to excise cancers from the stomach, to know how many people have had their life shortened and, as nearly as possible, how much it has been shortened by the operation. To take another example. A variety of operations have been performed for the relief of those who suffer from exophthalmic goitre, but before we can decide whether this should be done we ought to know the subsequent health and duration of life of all those operated upon and contrast it with the subsequent health and expectancy of an equal number of patients who, having the disease equally severely, have not submitted to operation. Please let it be understood that I am not in any old-fashioned way objecting to the advances of surgery. Far from it, the debt that physicians owe to modern surgery is very great; every year hundreds of people whom we physicians are powerless to help have their health restored to them by surgeons and my surgical friends know well that not a week goes by but that I seek their aid. Nor am I here attempting to decide whether gall-stones should be excised from the common duct, or cancer from the stomach, or whether operations should be performed for exophthalmic goitre. The sole reason why I have taken examples of operations upon medical cases to illustrate the care which must be exercised before arriving at a conclusion derived from figures is that it is easier to see the result of a surgical operation than that of other modes of treatment, but I can readily take an instance from medicine—namely, the treatment of typhoid fever by bathing. Many large collections of cases have been published, showing that if all the patients whose temperature exceeds a certain point are bathed the mortality is lowered, and from that fact it is argued that all patients whose temperature exceeds that point should be bathed. But this does not follow, for, supposing the bathing killed some who would otherwise not have died, but saved more who would have died if they had not been bathed, the mortality would be lowered, although the treatment would have killed some. Surely the right thing to do is not to bathe all, but to select to the best of our judgment those who should be bathed.

But when we have got our figures the problem is often much more obscure than any of those just quoted and demands a special training in the use of statistics that few medical men possess. A good illustration of the extreme difficulty of dealing with medical statistical problems is the question whether tuberculous disease is hereditary or, as we should now say, whether the children of tuberculous parents inherit any special liability to infection by the tubercle bacillus. Many papers have been written on this subject, but hardly any are free from fallacy; some are so full of errors that they are quite valueless. Often the evidence is fallacious, as, for example, when the writer forgets that all experience gained in the post-mortem room shows that many have tuberculous disease who, so far as we know, gave no evidence of it during their life. Even figures from life insurance societies dealt with by actuaries are not free from fallacies of evidence, for they can take no account of those who are born of tuberculous parents and die from tuberculous disease before they come up for examination for life insurance. Often the reasoning is fallacious also, as, for instance, it is stated that such and such a proportion of sufferers from pulmonary tuberculosis have consumptive parents, forgetful of the fact that this is worth little unless we know what proportion of people who have not got pulmonary tuberculosis have consumptive parents; and, beyond obvious pitfalls such as these, there are others that only expert statisticians can avoid. A few years ago when it was discovered that there could be no pulmonary tuberculosis without infection by tubercle bacilli many of the medical profession, without any careful consideration, threw overboard the belief that inheritance played any part, and it was maintained that the children of tuberculous parents were not more liable than others to pulmonary tuberculosis; but Professor Karl Pearson has recently published a paper in which he states that the inheritance of a special liability to infection by tubercle bacilli plays a very important part. Much has been made of cases in which it appeared that pulmonary tuberculosis has been transmitted from husband to wife, or *vice versâ;* but, as a rule, no attempt is made to calculate the probability that both might have such a common disease quite apart from infection from one to the other, and therefore it is interesting to read that Professor Karl Pearson says: "There is clearly no need in such cases to appeal to infection from husband or wife to account for the small number of cases in which both parents suffered." I am afraid that frequently we describe conditions as having a special association without any endeavour to determine whether they are more frequently associated than might be expected as a matter of chance. The statistics about insanity and cancer also show the extreme difficulty of a proper use of medical figures. I have often urged what I am glad to see he urges, that to deal with figures requires a special training which is enjoyed by but few of us; we should not draw conclusions from statistics unless we obtain the help of those specially educated to their use. But statistics are only part of a larger matter—namely, the extraordinary width of knowledge required for our science of medicine. Properly to appreciate the differences between the vitalists and their opponents a training in metaphysics is desirable. A medical man ought to know his physiology and pathology well, but much of these is founded on chemistry and physics; indeed, physiological chemistry is already a department of physiology, and bacteriology and protozoology are linked to pathology. It is, in truth, quite impossible for a medical man to keep abreast of the many sciences which bear upon his own; all that he can hope is that by the width of his own education he may be prevented from rushing in where angels fear to tread. Further, it is clear that many medical problems can be best solved by our working in conjunction with those versed in other sciences, from whom such of us as have the opportunity of studying medical problems should constantly seek help.

Yet another hindrance to the advance of medical knowledge is the acceptance of facts upon authority. In bygone days, in spite of Roger Bacon's teaching, this was commoner than it is now; indeed, through the dark centuries of medicine that preceded the discovery of the circulation of the blood everything was accepted on authoritative teaching, most of which was entirely wrong. Even in recent times there have been some remarkable examples. Thus the hæmoptysis of pulmonary tuberculosis was often ascribed to vicarious menstruation; although it occurs equally in men and women, it may be met with in females who are of such an age that menstruation does not take place and it has no monthly periodicity. But perhaps the most striking instance of subservience to authority was the almost universal habit of bleeding solely because the teaching of the day said that people should be bled. Often patients were actually bled to death, yet those who did it were so blinded that they ascribed the death to the illness and not to the bleeding. If he had done nothing else Marshall Hall would have proved his genius by pointing this out, as he did in his "Researches Principally Relative to the Morbid and Curative Effects of Loss of Blood." To take one case among many that he gives: a man fell from a scaffold and fractured his ribs; he was taken to the hospital and bled to 18 ounces. 24 hours later 18 ounces more were taken from him and about seven hours afterwards 18 ounces more, and 15 hours later a further 20 ounces. "The pulse after this time became a mere flutter and the man survived only a few hours." Could anything illustrate subservience to authority more strongly?

Not so very long ago that extremely powerful poison, antimony, was given for many diseases because it was stated by authorities to do good. No one would now contend that any considerable proportion of the thousands of patients who took antimony were one whit the better for it. When a student begins his work he must for a little while accept some statements upon the authority of his teacher; but with every day of his career the necessity for this becomes less and less, for medicine is a science in which nature performs experiments on every patient that those who have eyes to see can watch and so observe for themselves if the statements commonly made are correct. I would say to all but the youngest students: accept nothing on authority but look for yourselves and see if the usual teaching is true; believe nothing you do not see, be sceptical about everything you are told. Do not think I mean that no respect should be paid to the experience of skilled clinical or pathological observers or experimental pathologists, but all of us should be always on the alert to see if they are correct, and we should respect those who are.

Speaking of the use of antimony and venesection as illustrating the harmful effect of authority reminds us that no department of medicine shows this better than that which deals with treatment. Sometimes authority in one country advises different treatment from that employed in another. Thus, whilst in England we often give strychnine when the pulse is feeble, in Germany camphor is used for the same condition. This seems absurd; one or the other must be the better. Often little attention is paid to the natural course of the disease towards recovery; for example, many methods of treatment by drugs, electricity, serums, or operation are said to benefit exophthalmic goitre, regardless of the fact that if the patient is put to bed and kept quiet she will usually recover without any other treatment. With many diseases the natural tendency to get well is so great that unless there is a strong consensus of opinion as to the efficacy of one particular mode of treatment—for example, iron for chlorosis, mercury for syphilis, and thyroid gland for myxœdema—probably no special treatment by drugs does any good. It may be laid down that when more than two drugs are praised as benefiting any disease probably no one that we know does so.

Unreflecting adhesion to authority has a particularly serious effect in keeping back the advent of correct knowledge, for in the first place, when the authority is found to be wrong, much energy that might be utilised in the search for truth is expended in demolishing that which is false, and in the second place it seems almost a law that we should rush to extremes of thought, so that having been for years wrong in one direction we travel for years wrongly in another course before attaining the true position. For example, for many years after it was shown that bleeding had been frequently practised for diseases in which it did harm it was very rarely done and many patients were therefore deprived of the relief it would have given them, and it is only now that we have learnt to know correctly when to employ it. The history of our views upon the relationship of the different varieties of Bright's disease shows the same thing. At one period it was taught that many of the acute cases passed into interstitial nephritis, then it was believed that none did. "It is almost always the unhappiness of a victorious disputant to destroy his own authority by claiming too many consequences or diffusing his proposition to an indefensible extent." Much of the excessive zeal for treatment by drugs arises not only from an unwise adhesion to so-called authority, but from a lack of appreciation that pathology is the basis of all medicine. The primary duty of a physician is to find out what is the matter with his patient; proper treatment can only be secondary to that. All treatment apart from a correct diagnosis, which in most cases should include a correct visual impression of the way in which the body is disordered, is bad, and may well lead to more harm than good. Another reason for incorrect treatment is that many say, "You must do something." I can never see the reasonableness of this. The very fact that the medical man does not know what to do is actually used as a reason why he should do something; surely it is the very reason why he should do nothing, for he may well do more harm than good. To know when to interfere and when not to interfere with nature is a fine test of the sagacity of a clinical physician. Think of the harm that was done not many years ago by the wholesale administration of antipyretic drugs. Do not, however, imagine I am urging that treatment is rarely of use. Far from it. Never at any period in the history of medicine has treatment been more skilful than now, and never did our art save more lives than now. We have only to look back a little to see that we have improved. A hundred and fifty years is a short time in history, yet we find such a distinguished physician as William Saunders in the year 1767 recommending that a sufferer from the "iliac passion" should have crude mercury given him by the mouth, tobacco fumes by the anus, and that cold water should be thrown on his body. I am only pleading that we should try to observe and think clearly and accurately each for himself; if we do this the gibe that medical men treat diseases of which they know little by drugs of which they know less will pass away.

The last point to which I have time to draw your attention is that it usually requires considerable trouble to train ourselves to receive new ideas properly and by failing in this respect we retard the progress of medical thought. In this matter there are two chief kinds of mind. Those having the one usually claim that they are critical, but they are obstructive rather than fair critics. For the most part they are extremely slow to assimilate anything new; strange to say, they frequently pride themselves on this and take great comfort from the sad fact that many suggestions which when first promulgated appeared fruitful have turned out to be barren. Such as these are satirised in Mr. Thomas Diafoirus whose father said of him with pride "that he is blindly attached to the opinions of the ancients and that he would never understand nor listen to the reasons and experiences of the pretended discoveries of our century concerning the circulation of the blood and other opinions of the same stamp." Those having the other are easily enticed away by new notions just because they are new; they absorb new ideas too rapidly without digesting them; in popular language they are ready to swallow anything. Fortunately our profession contains many who fall into neither of these classes, because they have an evenly balanced mind trained to estimate the value of novel suggestions.

Pardon me for having in these fragmentary remarks only stated what you all know and what many have taught at various times during many centuries. My excuse for urging a plea for accurate thinking is that the more accurately we think the more rapidly will medicine progress. Perhaps, having listened to me so far, you may despair of advance; but a moment's glance at medicine of, say, a few years ago will show that we have gone forward notwithstanding our many mistakes. For, happily, "Time effaces the fictions of opinion and confirms the determinations of nature."

# Address in Surgery

ON

# THE CONTAGION OF CANCER IN HUMAN BEINGS: AUTO-INOCULATION.

*Delivered at the Seventy-fifth Annual Meeting of the British Medical Association on Thursday, August 1st, 1907,*

By HENRY TRENTHAM BUTLIN, F.R.C.S. Eng., D.C.L.,

CONSULTING SURGEON, ST. BARTHOLOMEW'S HOSPITAL.

Mr. President, Ladies, and Gentlemen,—The question of the contagion of cancer in human beings has been often raised and as frequently decided—sometimes in favour of contagion, sometimes against it, according as the evidence is accepted or rejected. For there are two kinds of evidence—that which satisfies the inquirer who wishes to believe, and that which is required by the sceptic, just as there are two kinds of evidence regarding most theories and events. If the occurrence of cancer in a man and his wife who live in the same rooms be accepted as evidence of the contagion of cancer, whether the two were affected at the same time or years apart, whether the cancer of the one was of the same kind as the cancer of the other, whether the cancer was exposed or covered, then the case of contagion is not difficult to prove. And if the occurrence of cancer in the attendant on a cancer patient be accepted as evidence of the contagion of cancer, whether the cancer be of the same variety in both the patient and the attendant, whether it be internal or external, and whether it occur immediately in the attendant or only after the lapse of years, then surely there is ample evidence that cancer is contagious in the human subject. And of such a kind, for the most part, is the evidence which is adduced to prove the case.

But, if the philosophical mind is to be persuaded that cancer is contagious in human beings, it can never be by means of such flimsy evidence as this. Certain conditions must be laid down for the evidence, and those conditions must be adhered to with the strictest impartiality. I will presently state them. But, in order to do so with the greatest effect, it is first necessary to lay as it were a foundation for the discussion of the question, and even to define some of the terms which will be employed.

Let me say that when I speak of cancer as contagious I mean only that it is *communicable*, and I use the former term because it is more convenient and not so ponderous as the latter, but when I use it I do not do so with the intention of expressing a peculiar or special mode of communicability. Next, I would draw attention to certain conditions of cancer which are quite well known but which should be actively before the mind of him who investigates this subject. Thus two or more cancers may occur in the same individual. It is a matter of common observation that several rodent ulcers may attack the face, but no direct relation can be traced between them. In like manner the surface of the tongue may present two or more squamous carcinomata. Or an individual may suffer from squamous carcinoma of the larynx and from cylindrical carcinoma of the rectum. We speak of all these as cases of *multiple carcinoma*, and for the present we accept the theory that they have no direct relation to one another in the sense that no one of them depends for its occurrence on any other of them.

Next, carcinoma occurs in parts of the body which are in direct relation with one another through the medium of the lymph or blood. Thus, the breast is the seat of carcinoma and the axillary glands become affected. Or, carcinoma attacks the rectum and growths of carcinoma are discovered in the liver. In these cases the carcinoma of the glands or liver is of the same variety as the carcinoma of the breast or rectum and the theory is universally accepted that the one disease depends for its existence on the other, and that some part of the carcinoma, or something derived from the carcinoma, is conveyed from the breast into the glands through the medium of the lymph, or from the rectum into the liver through the medium of the blood. We call the carcinoma of the breast and rectum the primary disease and the carcinoma of the glands and liver the secondary disease; and we speak of this transference of the carcinoma as a *metastasis*, not a very good term perhaps —for it is defined to mean "the removal of the seat of a disease from one place to another"—but good enough, for every person who uses it in the pathology of malignant disease uses it in the same sense and each one knows what the other means by it.

Again, carcinoma is conveyed experimentally from one part of the same body to another or from one animal to another of the same species. A fragment or broken-up portion of the carcinoma is inserted, for the most part beneath the skin, where it takes root and grows and conducts itself with regard to its new surroundings precisely as the carcinoma from which it was derived does with regard to its surroundings. The fragment or portion thus planted is spoken of as a graft (*greffe*, *Impfung*) and the process is termed grafting, or inoculation, or transplantation, but the term *implantation* is more generally used in place of these terms, and I shall speak of this process throughout as implantation, that there may be no doubt of my meaning.

It is sometimes said that every successful implantation is neither more nor less than a metastasis and this, to a certain extent, is true but only within limits, for the conditions which surround the material which is implanted differ in some important respects from those which occur in metastasis. Nevertheless, so frequent and successful is natural metastasis that it might reasonably be expected that carcinoma would be most easily and readily conveyed from one animal to another by introducing some of the carcinomatous material into the blood, which presumably would convey it to various organs of the body, in one or other of which it would be likely to find a suitable soil and nourishment for its maintenance and development. Experiment has, however, taught us that this method is very unsuccessful and it has almost ceased to be employed by those who experiment with cancer. Injection experiments might, perhaps, be more successful if they were practised in the lymph vessels; but this procedure is well-nigh impossible in the small animals with which experimenters have to do. We have further learned by experiment that the carcinoma which is successfully implanted invariably presents the characters of the carcinoma from which it was implanted, and that its metastases, like the metastases of the original carcinoma, are always of the same variety and that no transformation has yet been observed of one variety of carcinoma into another variety. It is conceivable that future experiments may yield a different result, but for the present we have no right to assume that the implantation of one variety of carcinoma can produce any other variety of carcinoma. We have learned that successful implantation is not easy, even in animals, and with tumours which have been most successfully dealt with, and that success depends largely on experience and practice and on the most minute observance of detail. We have learned that sepsis, whether of the implanted material or of the part in which the material is implanted, is an almost insuperable obstacle to success. We have learned that animals in which experimental implantation is most easy may be fed during long periods of time on food mixed with carcinoma without contracting the disease. And, finally, we have learned that healthy animals, which can be easily treated by implantation, do not contract the disease merely by being kept in the same dwellings (cages) with animals which are suffering from the disease.

This accumulation of knowledge of the last few years enables us to formulate, much more definitely than we could before, the conditions under which carcinoma is likely or unlikely to be accidentally communicated from one human being to another. Thus it will be at once apparent that all cases of reputed contagion of cancer in which the disease is not of the same variety must be unhesitatingly rejected; that cases must not be accepted where there is no evidence that the affected parts of the two individuals were from time to time in contact; that it is extremely improbable that contagion should take place from a covered cancer, such, for instance, as a cancer buried in the breast; or that the disease could be implanted in a part the covering of which has not been broken. These exclusions largely limit the number of possible cases of contagion and the limitation is still greater when it is taken into account that sepsis of the tumour or of the broken part which comes in contact with it is an almost absolute obstacle to the success of accidental implantation. For it is notorious that cancers which are exposed for the most part rapidly become septic and ulcerate and suppurate. Indeed, the conditions which generally prevail are so unfavourable to accidental implantation in human beings that the event might be regarded as well-nigh impossible and scarcely worth the trouble of investigation, were it not for the occasional occurrence of what appear to be examples of successful implantation in different parts of the body of the same individual. Such cases have long been known under the name of *auto-inoculation*, and it is to them that I shall devote this address. For the key to the problem of the communicability of cancer in human beings must surely lie in the study of auto-inoculation. If auto-inoculation can be proved on such evidence as would be admitted in a court of law, there is a *primâ facie* case for contagion. And, if the proof of auto-inoculation falls through from lack of sufficient evidence, whether in quality or quantity, it is no longer worth while to pursue the study of contagion from individual to individual. Seeing the many papers and theses which have been written and the number of cases which have been brought forward to prove auto-inoculation, the case in favour of it, if there be a case, ought to have been proved conclusively long years ago.

But for the same reason as for the case of contagion—the imperfection or flimsy character of the evidence, the possibility of explaining many of the cases on some other theory, and the absence of auto-inoculation under conditions in which it might be expected to take place—there is as yet no agreement on the question. The only cases which should be accepted are those which fulfil the following conditions: The disease must be of the same variety in the primary carcinoma and in the reputed contact-cancer. The identity of the disease must be proved by microscopical examination. The primary disease must have been exposed at the time at which contact is known to have taken place, and there should be such evidence of contact of the primary carcinoma with the seat of the reputed contact-cancer as would satisfy a jury.

The necessity of proof by microscopical examination is exhibited in the following case. I was informed that a certain museum in London contained a specimen which would interest me. It was a case of primary epithelioma of the gum, with a small, isolated epithelioma of the cheek exactly opposite to it. My informant offered to bring the microscope slides to my house for examination, but the promise was so long of fulfilment that I drove one day to the museum in which the specimen lay. The curator of the museum met me with an expression of disappointment and told me he was ashamed to confess that, although this specimen had been exhibited to various persons as an example of the contagion of cancer, it had never been examined microscopically until my friend had informed him that I wished to see the sections, when he had at once proceeded to cut them, with the result that while the primary disease was typical epithelioma the ulcer of the cheek only exhibited the ordinary characters of inflammatory ulceration. Yet both he and the surgeon who had operated had been previously convinced that the disease was of the same nature in both the sores.

Although a large number of cases of reputed auto-inoculation may be found in surgical literature, it is remarkable how few of them fulfil the conditions which I have laid down as essential to their acceptance. There are two of them which merit the gravest attention, for they are cases in which a portion of a tumour was deliberately implanted in another part of the body of the patient who had grown the tumour. Professor Cornil brought one of them before the French Academy of Medicine in 1891, but the tumour was a fibro-sarcoma, and as my inquiry is limited to carcinoma I cannot use it. The other case was thought by Professor Hahn, who related it at the Berlin Medical Society in 1887, to be an absolute proof of the possibility of auto-inoculation and would undoubtedly have come down to us as such had not Professor Virchow happened to occupy the chair that day. Hahn cut out three nodules of a disseminated carcinoma and planted them apart and in quite distant parts of the body of the patient. All three nodules took root and grew, and were examined microscopically and were found to present the characters of the primary disease. Professor Virchow asked if the skin in which the nodules were growing had been transplanted with them, and receiving an answer in the affirmative objected to the conclusive nature of the experiment on the ground that the surgeon had transplanted the soil in which the nodules grew and without which they might have failed to grow. And the objection of that most sagacious of pathologists and philosophers must be admitted, so the case falls through. I am not aware that any direct experiments, which are so strongly condemned by our profession throughout the world, have since been practised.

In order to supplement the very barren material supplied by surgical literature with new and original material, I published a short letter in our journal last November asking for cases of reputed contagion of cancer, whether in the same individual or from one individual to another. In reply I received some very kind letters, some of which contained cases which were incomplete in one respect or another, with one exception to which I shall presently refer. On the other hand, there was one letter which contained no actual case in point but which interested me very much. It was from Dr. J. H. Dauber, physician to the Hospital for Women in Soho, and was to this effect: "Replying to your letter in the *British Medical Journal* of this week, I need hardly remind you how very common it is for a squamous-celled carcinoma on one labium of the female to affect the opposite one, whether it be the labium minus or majus. It infects the opposite side of the vulva by direct contiguity as surely as a condyloma. Time only is necessary and a certain amount of moisture to make it invariably the rule in my opinion ......" Now I had no idea that this was so, for cancer of the vulva has comparatively rarely come under my notice, either in hospital or private practice. I lost no time in asking two or three of my obstetric friends their experience, and I consulted two or three books in which I thought some reference might be made to it. Neither my friends nor the books confirmed Dr. Dauber's statement, and I was disposed to believe either that he had exaggerated the frequency of the occurrence or that his experience had been very exceptional. I even wrote to suggest this to him. And I might have set the matter on one side as little worthy of credence had it not happened that my assistant in this investigation wrote shortly afterwards to tell me that he had looked out all the cases of cancer of the vulva which had been in the wards of St. Bartholomew's Hospital in the past ten years, that they were 23 in number, and that in five of the 23 cases the disease was on the two sides. His words were: "In five out of the 23 cases of epithelioma of the vulva I find that one labium was first affected and subsequently the other labium. This is not including those cases in which the disease seems to have spread by direct extension ...... ." Thus Dr. Dauber's statement, though not confirmed to the full, was powerfully supported; and I began to suspect that this was one of those curious instances in which facts lie at our very feet and are either overlooked or only casually noticed until our attention is forcibly directed to them and to their import. I instantly issued a circular letter to a large number of specialists or persons interested in gynæcology, begging of them cases of contact-cancer of the vulva; and as about the same time I discovered an excellent case of reputed contact-cancer of the larynx by Dr. D. Newman of Glasgow in the Transactions of the Clinical Society I issued a similar letter to those persons who are interested in laryngology. I received, through the kindness of my friends, quite a large number of replies. Those of the gynæcologists exhibited a singular divergence of experience; for, while some of the writers had not, so far as they could recollect, seen a single case in point, several of them had seen at least one case, and two or three of them had seen a number of such cases. I do not attempt to explain this divergence of experience, but of course the positive experience is much more valuable than the experience which is negative. Unfortunately, very few of the cases which were reported to me were complete in all respects.

[Mr. Butlin here proceeded to give details of 15 cases of auto-inoculation of cancer, undoubted or apparent. Exigencies of space forbid our quoting all the cases and we have therefore made a selection. So far as possible we have not limited the selection to those which were apparently undoubted cases of auto-inoculation, but, as will be seen, we have given one apparently certain case and one doubtful case, in those sections, that is to say, where there were more than one case. We have kept Mr. Butlin's original numbering, therefore the numbers are not consecutive. Of carcinoma of the vulva Mr. Butlin gave five cases; of the larynx, three; of the lips, one; of the jaws, one; of the uterus and vagina, one; of widely separated parts of the body, two; and of cases of auto-inoculation on unbroken surfaces, two.]

## CASES.

### *Vulva.*

CASE 1 (under the care of Dr. W. S. A. Griffith).—A female, aged 67 years, was admitted to Martha Ward in St. Bartholomew's Hospital in July, 1897, suffering from a raw, moist growth on the inner aspect of the right labium majus, of the size of a five-shilling piece and half an inch in thickness, of a year's duration. It was freely cut out on August 6th. Shortly after the operation she began to suffer from irritation of the left labium majus, and in October she noticed a lump there. She was seen by Dr. Griffith in November and advised to have the lump removed, but she would not enter the hospital until January, 1898. There was then an ulcer of the size of a shilling. The scar on the right labium was quite sound. The disease was cut out on Jan. 7th. Both the growths showed the typical characters of squamous carcinoma. Owing to the many years which have elapsed since this patient was under care I have found it impossible to obtain such information as I could have desired regarding the exact seat of the second growth, whether it was just opposite the seat of the primary disease; so the case is not wholly complete.

CASE 3.—In December, 1905, Miss L. B. Aldrich-Blake removed an epithelioma of the left labium of a woman who was 53 years old. It was of several months' duration and was situated a quarter of an inch below, and one and a quarter inches to the left of, the orifice of the urethra. It proved to be a squamous carcinoma. During the time the patient was in the nursing home she complained of soreness of the other labium, opposite the seat of the ulcer, but no lesion was discovered. In October, 1906, she again came under the care of Miss Aldrich-Blake for a circular, flat, hard patch on the right labium, exactly opposite the spot where the ulcerated cancer had been removed from the left labium. She said that she had never lost the sensation of discomfort of which she had complained when she was in the home and that she had noticed that the place was growing hard for the last four months. The plaque was removed and was found to be a squamous carcinoma. I have here photographs of the microscopical characters of the disease on both sides, which were admirably taken by Miss Debenham. They are the more valuable because they show the exact limit of each growth and the healthy tissues beyond its margin.

### *Larynx.*

From my laryngological friends I received many letters, the very large majority of which were to the effect that the writers had never seen a case of auto-inoculation. On the other hand, I can report three cases in point.

CASE 6.—In the Transactions of the Clinical Society for 1889[1] Dr. David Newman of Glasgow described the case of a man, aged 49 years, who suffered from an elevated ulcer of the left false cord midway between the anterior and posterior attachments. Dr. Newman watched the case at the Glasgow Infirmary. In the month of June, 1887, he observed a localised redness of the right false cord, limited to a point where the free surface of the tumour impinged upon it. In spite of careful treatment an ulcer formed at this spot in the month of December of the same year and soon attained a larger size than the ulcer on the left false cord. The tissues in front of, and behind, the ulcers were free from disease, so that there was no continuity between the growths. The patient died in April, 1888, when two ulcerated tumours were found, one on each false cord, extending forwards towards the commissure so as almost to meet in the middle line in front, but there the continuity was broken. Microscopic examination of the tumours showed them to be epitheliomata.

CASE 8.—In February of this year (1907) I went to see an old man with Dr. Boyd of Victoria Park in consequence of a communication which was made to me by Dr. Hunter F. Tod. The patient was suffering from extensive disease of the larynx, the right half of which was swollen almost throughout, but chiefly at the posterior end of the true cord, where there was prominent ulceration. The left true cord was diseased from end to end, but the growth was most prominent and ulcerated immediately opposite to the most prominent ulcerated disease of the right cord. There was undoubted continuity of the disease in front. Dr. H. Lambert Lack had examined the patient three months previously and he told me that the left cord was free from disease at that time. Two months later, when the patient was first seen by Dr. Tod, there was a growth on the left cord, at the point where the disease was most developed when I saw him, and the forepart of the cord was free from the disease. After the patient's death the growths on both cords were examined by Dr. F. W. Andrewes who found that both of them presented the typical characters of epithelioma. If this patient had come under observation for the first time in the month of February probably there would have been no suspicion of auto-inoculation and the occurrence of the disease on both sides would have been attributed to continuity of growth. This case suggests that some of the cases in which there is advanced disease on both sides of the larynx, with continuity in front particularly, may really have been cases of auto-inoculation, the first stages of which had not been observed for want of opportunity.

In this relation I would mention a case of which Dr. H. Tilley told me of a patient whom he exhibited seven years ago at the Laryngological Society. Dr. Tilley removed an epithelioma of the anterior third of the right vocal cord. The left vocal cord, immediately opposite to the epithelioma, was raw, as if it had been "chafed" by the growth, but it bore so suspicious an aspect that the anterior third of the cord was also removed. The sore place was examined microscopically, but showed only "heaped-up epithelium and signs of inflammation in the deeper tissues." Had the disease been allowed to continue unoperated for a little longer epithelioma might have developed, as in the case related by Dr. Newman. Once more the necessity of microscopical examination is demonstrated, for the naked eye took a more serious view of the nature of the sore than was warranted by the histological examination.

### *Lips.*

In the course of an important discussion on cancer which took place in Glasgow just over 20 years ago[2] Sir Hector C. Cameron expressed an opinion unfavourable to auto-inoculation. As a part of his argument he said: "The upper lip in every case of epithelioma of the lower lip is in close contact with the disease by night and day. Moreover, the prolabium is even a more favourable surface for contamination than the skin. But has anyone ever seen the upper lip become affected by direct contamination under such circumstances? That it is capable of becoming affected is shown by the fact that an epithelioma of the lower lip not infrequently extends to the upper, round one or other commissure." Since that discussion took place two or three cases have been reported but not one of them was confirmed by microscopical examination until recently. I am now, however, able to furnish one complete example.

CASE 9.—In November, 1887, Professor von Bergmann showed to the Berlin Medical Society a man, 66 years of age, with a cancer of the middle of the lower lip. It was ulcerated. In the upper lip, exactly opposite to it, was a similar disease. Each was of about half the size of a hazel nut. The tumour of the lower lip had been noticed for three months and the tumour of the upper lip began to form six weeks later, soon after the first tumour became ulcerated. That case has been quoted on many occasions, and Kirmisson a year later said that he had had a similar case in his own practice. But neither of these cases appeared to have been examined microscopically, so that the just objection might have been raised against them that there was no proof of the precise nature of the ulcer of the upper lip. I sought in vain for a further report of von Bergmann's case but did not succeed in finding it. In January of this year, therefore, I wrote to him and received the following reply: "I removed both epitheliomata and examined them microscopically. They were unmistakeable epitheliomata" ("Beide Epitheliome habe ich excidirt und microscopisch untersucht. Sie waren deutliche Epitheliome").

There is thus one undoubted case of contact epithelioma of the lips. I also communicated with Professor Kirmisson but received no reply from him, so that I must conclude that his case was not microscopically investigated.

If it be wondered why auto-inoculation of cancer of the lip is so very infrequent I would point out that there are several reasons why this should be so. The upper lip is notoriously unfavourable to the development of primary carcinoma. It has probably a considerable power of resistance. And it does not in the least affect the argument that cancer may extend to it by direct continuity, for there is scarcely a tissue of the body which is not liable to the continuous extension of cancer. The discharges from the ulcer do not lie on the upper lip as they would do on the lower lip if the primary disease were situated on the upper lip. The upper lip is not frequently excoriated or cracked as is the lower lip in many persons; and the lips are so frequently wiped or even washed in the course of every day that the cancer cells have very little chance of remaining sufficiently long upon it to effect a permanent hold.

---

[1] Vol. xxii., p. 101.

[2] Glasgow Medical Journal, 1886.

*Upper and Lower Jaw.*

CASE 10.—(I am indebted for this case to Mr. C. Stonham, and for the notes to Mr. J. M. G. Swainson, the surgical registrar to the Westminster Hospital.) A man, 60 years of age, was admitted into Westminster Hospital with a large cancerous ulcer of the alveolar portion of the back part of the right side of the lower jaw, which extended down the side into the floor of the mouth. Immediately opposite to the growth there was, on the alveolar process of the upper jaw, an ulcer of the size of a sixpence. The history was very defective, but it appeared that the patient had pulled out a loose tooth from the lower jaw about three months previously and had noticed that a piece of the gum came away with it. A fortnight later the same occurrence had been noticed in regard to another tooth; but he was not even aware that there was anything the matter with his upper jaw. Mr. Stonham removed the disease of both jaws and the adjoining parts, together with a number of affected glands, and I went down to the Westminster museum to see them. They were most kindly examined for me by Mr. Swainson who reported that the disease of both jaws was carcinomatous. The only doubt in this case was whether the upper and lower alveoli came in contact at the back, but Mr. Stonham was convinced that this was so.

*Uterus and Vagina.*

CASE 11.—In the *Annales de Gynécologie et d'Obstétrique*[3] Hartmann and Lecène describe the case of a woman, aged 49 years, who had an ulcerated tumour of the neck of the uterus. She had had pain for eight years and discharges of blood for four years. On the right posterior lateral wall of the vagina, three centimetres from the neck of the uterus, was an uneven ulcerated surface, with hard edges, but moving freely on the subjacent tissues. The diseased uterus and the ulcer of the vagina were removed by Hartmann. Microscopical examination showed that the disease in both places was of the same variety—cylindrical carcinoma. The carcinoma of the vagina stood in the midst of squamous epithelium and was quite circumscribed. The surrounding tissues were examined and were found to be free from carcinoma and the lymphatic vessels did not contain carcinoma cells.

This case is the more convincing because the vagina is lined with squamous epithelium and is, therefore, subject to squamous, not to cylindrical, carcinoma.

*Distant Parts of the Body.*

CASE 12.—Sir William Macewen of Glasgow was so good as to supply me with the following interesting case. A patient with an ulcerated epithelioma of the lower lip consulted him, and during the consultation pressed his forefinger against the ulcer and then quickly rubbed the tip of his nose with the same finger. The nurses at the home to which he was sent for operation independently noticed this curious habit, and when the gentleman was asked why he did it he replied that gentle pressure on the ulcer relieved a tingling sensation in it, but that he was not even conscious of his trick of rubbing his nose after he had pressed his finger on the ulcer. The growth of the lip was removed and was found to be an epithelioma. 20 months later he returned to Sir William Macewen with a large ulcerated patch on the tip of his nose which extended from one ala to another. He had first noticed it about three months after the operation on the lip. It was removed and presented the same histological characters as the cancer of the lip.

I have thus brought together a certain number of cases which fulfil the conditions which were laid down in the early part of this address. They are not so numerous but I would fain have more of them, and I hope to do so by the kindness of some of those who are present here to-day and of those who may chance to read the address. But I think they are too many and too constant in the circumstances of their occurrence to be explained on the theory of coincidence. If two persons meet on a certain day at a certain place the meeting may be regarded by those who witness it as a chance, curious or not, according to the conditions which are associated with it. But if the meeting is frequently repeated under similar conditions the witnesses begin to suspect that there is something more than mere chance, especially if one of the persons is male, the other female, and a cause is sought for. So the repetition of such occurrences as I have described appears to be too frequent to permit them to be regarded as coincidences. But there is much more in the evidence than the mere repetition. It will be observed that I have brought forward only two cases in which the reputed contact-cancer was on the skin and that all the other cases were on surfaces which are covered with mucous membrane, that they were most frequent on mucous surfaces which are usually moist, that they were most frequent on mucous surfaces which are generally not kept scrupulously clean, that they occurred most often on surfaces which were constantly or frequently in contact, such as the opposite sides of the vulva, and less often on surfaces which only come in contact from time to time, with the exception of the upper and lower lips. All these are circumstances which tend to confirm the theory of contact-cancer. They are such as might be expected from *a priori* reasoning. And there is yet one more important point. The reputed contact-cancer in one of them was of a variety which does not naturally grow as a primary disease in the part where it occurred.

I do not know whether I shall be deemed to have proved the case of auto-inoculation. For myself, I think the evidence is conclusive. But then I must confess that my belief that carcinoma is a parasitic disease and that the carcinoma cell is the parasite strongly disposes me to believe that the disease should be capable of auto-inoculation.

Is a broken surface essential to successful auto-inoculation? Had I been asked that question a few months ago I should have probably replied, I think it is. But the following case, for which I am indebted to Dr. E. Michels, suggests that auto-inoculation may occur on a plain, unbroken surface. So that I should now be disposed to say that it probably almost always precedes and is helpful rather than essential to auto-inoculation.

CASE 14.—A woman, aged 40 years, was admitted into the German Hospital with a large tumour in the situation of the left kidney and a history of hæmaturia of about four years' duration. Cystoscopic examination discovered a papillary growth at the orifice of the left ureter. This was removed through a suprapubic incision and it was hoped that the swelling of the kidney would subside, but as it did not do so and the hæmaturia continued the kidney was removed a few weeks later. It was found to contain a large papillary tumour like that which had been removed from the ureter. The microscope showed that the disease was malignant and of the same variety in both tumours. At the time of the first operation a considerable portion of the ureter above the growth was removed and found to be perfectly healthy. By the kindness of Dr. Michels I am able to exhibit drawings of the microscopical structure of both tumours. The last account of this patient was that she was suffering from a large mass in the abdomen, presumably due to disease of the lymphatic glands.

A corresponding case is described by Hartmann and Lecène.[4]

These cases and those in which the material is conveyed into the end bronchi of the lung, and there takes root and grows, of which a good example is recorded in the Transactions of the Pathological Society by Moxon, may be placed in a special class, as it were, between metastasis and auto-inoculation. The cancerous material does not lie surrounded by what we term nutrient fluids, such as the lymph and blood, nor is it constantly or frequently in contact with, or rubbed into, the part in which it succeeds in gaining a foothold.

I cannot deal with other side issues which naturally present themselves in connexion with the question of auto-inoculation, for time will not permit it. Such, for instance, as the length of time which may elapse before the appearance of the reputed contact-cancer. But I must not pass without notice one point of practical importance, the possibility of wound infection in operations for cancer. For some years past surgeons have been more cautious than they used to be in dealing with cancerous growths, and many cases have been recorded in which there was reason to believe that recurrence was due to implantation during the operation rather than to imperfect removal of the disease. Ten years ago Dr. Lambert Lack wrote on this subject a paper which was published in THE LANCET[5] and described cases, of which he had made the microscopical examination, which threw the gravest suspicion on instruments and the tearing of breaking-down cancers as the cause of immediate recurrence of the disease. I think his cases are some of the most conclusive I have read in this regard and the possibility of the occurrence must never be lost sight of. Cancers should not be cut into unless for diagnosis and the wound should be tightly closed before the actual operation is commenced. The instruments which were used for the purpose of diagnosis must not be used again until they have been boiled. Exposed or ulcerated cancers should not be pressed against or dragged across raw surfaces made in the course of the operation. And care should be taken that breaking-down cancers are not opened during operation. If they are opened by mischance means should be taken to cleanse the surface of the wound and to destroy the exuded contents of the cancer cavity.

---

[3] Tome iv., p. 65, February, 1907.

[4] Loc. cit.

In the early part of this address I stated that the study of auto-inoculation is, for me, only preparatory to the study of the communicability of cancer from one human being to another. And I have set myself the task of investigating this question. That it is an exceedingly difficult investigation there can be little doubt. And from what has transpired in the course of this address there can be even less doubt that such cases must be very rare. The small number, if there are any such cases, must be compensated by the quality of those which are discovered. I have thought out the conditions in which contagion is most likely to take place and have come to the conclusion that coition is the most likely of all conditions to place either the male or the female in danger of contracting cancer. The organ of the male and the os uteri of the female are frequently the seat of cancer. These parts are subject to the same variety of cancer, squamous carcinoma, although the uterus is also liable to cylindrical carcinoma. Cases of coition-cancer have been from time to time reported. But they are very few in number and I have not yet discovered one of them in which the essential conditions are fulfilled. The remark has frequently been made that, if cancer is contagious in the human subject, cases of coition-cancer ought to occur with some degree of frequency. I do not think so, for the following reasons: The presence of an ulcerated cancer in the male would render him disinclined to coition, so that the female would be but rarely exposed to contagion. The cancer of the female is generally septic when it is exposed (that is, ulcerated), and unless it is ulcerated the disease is not likely to be communicated; although coition is known to take place even in the presence of an exposed carcinoma of the uterus it is not likely to be frequent; ulcer or excoriation of the male organ, which is probably almost essential to contagion, is a condition which deters the male from coition. Again, auto-inoculation is probably rendered more easy by the fact that the patient is more or less prone to the occurrence of cancer. And, if there be persons who are prone to a disease it is reasonable to suppose that there are other persons who are much less prone to it, or even immune. They possess a resisting power against the disease which it may be impossible to overcome, or which can only be overcome with difficulty. Far, then, from wondering at the rarity of reports of coition-cancer, I should be surprised if they were more frequent. Yet I believe they do occur, and Mr. R. B. Etherington-Smith (who has been assisting me in this investigation and to whom I am already much indebted) and I are devoting our attention to the discovery of cases in which cancer may have been communicated by coition. One of the chief reasons which led me to choose the subject of this address was the hope that the publication of it might assist us in finding some of the cases we are seeking; for they are more likely to fall under the observation of those who are engaged in general practice and are acquainted with the histories of their patients than under the observation of those who, like myself, are engaged in a special branch of our profession. And I think they are more likely to be recognised among patients in higher than in lower social conditions.

*Postscript.*—In the foregoing it will at once be apparent to those persons who have made a study of this subject that I have not used all the cases (which fulfil the essential conditions) which may be collected from surgical literature. I preferred to use only a few cases, provided I knew something personally of them or could obtain special information regarding them, and I have only used some of the old published cases on account of the excellent reports which belong to them or to fill in gaps. Again, it will be noticed that I have made no mention of cases of reputed contact-cancer of the bladder or of the intestine. I have left them out, not because they did not appear to me to be true examples of contact-cancer but because objections might be raised against them which could not be made in most of the cases I have described. It is probable that I shall soon publish a much larger number of cases and introduce a good deal of material which would not serve as a proper foundation for the proof of auto-inoculation but which will serve as an excellent superstructure.

# MOBILE KIDNEY, WITH A DESCRIPTION OF AN OPERATION FOR ANTERIOR NEPHROPEXY.[1]

BY E. STANMORE BISHOP, F.R.C.S. ENG.,
HONORARY SURGEON TO THE ANCOATS HOSPITAL, MANCHESTER.

IT will be agreed, I think, to start with, that true floating kidney—that variety which possesses a mesonephron and is entirely surrounded by peritoneum—is a thing of great rarity. Sir W. Jenner, in his lectures on abdominal tumours, says that he once felt a mass which was supposed to be one during life but had never met with one in all his post-mortem examinations. In my search through the literature of this subject I have come across three undoubted specimens, but besides these I have been unable to find any others recorded. The condition must, therefore, I conceive, be regarded as a surgical curiosity. The cases in which we as practical men are interested fall into the category of "mobile" or "wandering" kidney; they are not surrounded by peritoneum and their excursions take place entirely behind the parietal peritoneum in the loosened subperitoneal connective tissue.

Confining ourselves, then, to this variety, it will be seen on further examination that only on four points do all writers on the subject appear to be agreed. These are: (*a*) that such a condition does actually exist; (*b*) that this condition exists most frequently in women (Newman estimates the proportion at 86·2 per cent., Landau at 86·9 per cent., Longyear at 85·0 per cent., Schutze at 85·0 per cent., Küster at 90·9 per cent., and Skorczewsky at 91·1 per cent.); (*c*) that it is most frequently seen on the right side (Goodhart estimates the proportion at 80·0 per cent., Longyear at 93·7 per cent., and Landau at 84·8 per cent.); and (*d*) that it is very frequently associated with neurasthenia. When one examines further still, however, all agreement disappears, and the widest differences are found. Nothing, for instance, is more striking than the different estimates of the frequency of this affection by different authorities. Thus Lindner finds a moveable kidney in every third or fourth woman who comes for examination; Oser, of Vienna, said that in Austria 10 per cent. of all women who have borne children are affected; Edebohls found 90 cases in 500 women, and Matthieu 45 in 306 women. On the other hand, Skorczewsky found only 31 women in 1030 and three men out of 392, or 34 out of a total of 1422. Ebstein, in the Charité in Berlin, found only five cases in 3652, and Rollet, in Oppolzer's clinic, found 22 in 5500, whilst Sir Andrew Clark had only seen two cases in 4000 bodies examined post mortem. Mr. H. Morris, in the Cavendish lecture of 1893, remarked upon this variation in the evidence as to the frequency of this condition, and two years later, in 1895, Sir Kendal Franks repeated the observation.

Even more remarkable, if possible, is the difference of opinion as to the importance of this displacement when found. In 1895 Sir Kendal Franks said that the tendency of the medical mind at that time "was to assert that for the most part it was an invention of the surgeon more given to enterprise than to exactness in diagnosis." In 1893 Mr. Morris, in the lecture already referred to, observed that "professional opinion was greatly divided as to the actual importance of moveable kidney; that whilst he and others believed it to be of serious import, one distinguished surgeon said that it was a myth, a thing of no pathological significance, and that a righteous scepticism ought to be entertained as to moveable kidney being the cause of real suffering." At a meeting of the Royal Medical and Chirurgical Society in April, 1893, during a discussion on this subject, Sir Thomas Smith said that many people had a loose kidney without experiencing any trouble from it.

---

[5] THE LANCET, June 13th, 1896, p. 1638.

[1] A paper read before the British Gynæcological Society on March 14th, 1907.

Other authorities, while admitting its existence, and in some cases its importance, believe that it only occasionally calls for surgical interference. Hirst, in his "Text-book of Diseases of Women," published in 1902, says that out of considerably over 1000 female patients observed by him 200 had demonstrably displaced and mobile kidneys; only five of these, however, in his opinion, required nephrorrhaphy. Dr. Hare says that the subjects of this displacement often go for long years without any more formidable symptoms than a little dragging pain in the side, which requires little or no treatment. In 1897 Baldy of Philadelphia said: "I do not hesitate to place myself on record as being entirely sceptical in regard to the whole subject of floating kidney. The large majority of the symptoms falsely attributed to the kidney can in all probability be attributed to the general neuroses from which these women suffer." On the other hand, such men as Newman of Glasgow, H. Morris, Kendal Franks, Keen, Goelet, Sturmdorf, Cumston, Longyear, Hutchinson, jun., McCosh, and Arbuthnot Lane all agree as to its great importance, and not only attribute to it certain very troublesome and serious symptoms but look upon it as the direct cause of such conditions as hydro- and possibly pyo nephrosis. Many consider that it is not merely a concomitant, but the real effective cause of the neuroses which have so often been observed in these cases. My own belief agrees with this.

The reason for so great a discrepancy in the estimation of the frequency of the condition is, I believe, to be found in two facts. The first is that some of the estimates were made in the post-mortem room. Now, rest in the supine position is one of the readiest means for reducing a dislocated kidney to its normal position; if, therefore, the cadaver before death had been, as would be most likely, for some time confined to this position the kidney would almost certainly be found after death normally placed; moreover, the perinephric fat, previously in a semi-fluid state, would have consolidated and so have apparently fixed the kidney. Estimates taken after death have therefore great inherent probabilities of fallacy. The other reason will be found in the variation which undoubtedly exists in the readiness with which the kidney can be displaced so that its malposition can be recognised from day to day in the same case. This is so well understood at present that few surgeons, I imagine, would care to base their opinion upon one single examination, unless the result were a definitely positive one.

But neither of these reasons will explain the very opposite views taken by physicians of the importance of this condition even when there is no question of its existence, nor indeed is it easy to reconcile them. What was true in 1893 and 1895 is practically as true to-day. On the one hand, many still look upon a floating kidney as only part, and that not a very important part, of a general neurasthenic state; whilst on the other, one well-known physician at least believes it responsible for acute melancholia, hypochondriasis, prolonged nervous exhaustion, constant ill-health and irritability of temper, periodic headaches, and dysmenorrhœa with vomiting and syncope, advising in all such cases that if a displaced kidney is found operation should at once be resorted to.

Probably the best, if not the only, explanation of this divergence will be found in this very neurotic element which is present in most of these cases. Most surgeons who have had much experience of operation upon neurasthenic patients before long learn to dread them. The results are never so satisfactory as they might confidently be expected to be in those who are free from this disturbing element; even if the particular symptoms of which the patient complained previously are removed they are only succeeded by a fresh set pointing in a different direction, so that the surgeon seems only to be beating the air—not at all the kind of exercise with which he desires his name to be associated. Such surgeons would be very prone to minimise the importance of any malposition or disturbance complained of by such patients, especially if the surgical means advised had been used by them and found to be non-effective.

But after all it has to be remembered that a neurotic patient is one whose nerves have been fretted out of her own control and that this fretting may be due to a variety of causes. Some of these may be entirely out of our province. Persistent family worries, family disputes, pecuniary difficulties, religious excitement, to mention no others, must be combated in other ways, but there remain some cases, and not a few, which are plainly due to physical causes, and of these none is more likely to be effective than a persistent or constantly recurring drag upon the nerves belonging to the sympathetic system, such as would be produced by a displaced kidney. If at the same time there were signs of recurrent distension of the sensitive kidney pelvis or renal substance, no one, I think, would deny that the only reasonable thing to do would be so to arrange matters that this recurrent drag upon nerves should be done away with, whilst at the same time any kinking of the ureter resulting in an obstruction to the outflow of urine should be straightened out and rendered innocuous.

In reference to this latter indication it is worth while to note that in the earlier stages of the descent of the kidney the attachment of the ureter at the side of the spinal column does not descend at the time or at the same rate as the body of the kidney itself; in many, if not all, cases this remains fixed for a considerable time after the lower pole of the kidney has described a curve which results in its lying much lower and nearer to the middle line than is its normal position. This produces of necessity an acute bend at the point where the pelvis of the kidney joins the ureter; urine at once tends to collect in the lower half of the pelvis, and although when the whole renal pelvis is full the intra-pelvic pressure may overcome the obstruction sufficiently to empty the upper half this pressure will be then so much reduced that the lower half will never entirely empty itself, and there remaining always some more or less stagnant urine in this portion of the cavity a certain amount of pyelitis is almost an inevitable consequence, more especially as to this must be added the effects of the new position upon the vessels supplying the kidney.

It is well known that when two vessels, one of them an artery, the other a vein, are subjected equally to pressure, kinking, or stretching, the calibre of the vein will suffer the most. Blood will still enter the organ affected long after it has ceased to pass out again with its accustomed freedom; the organ becomes congested; if the obstruction is too long-continued or too acute, some of the capillaries will give way and blood will be extravasated; the organ becomes correspondingly damaged, and thus a more ready prey to any micro-organism which may gain an entrance; all these conditions act and react upon one another and it becomes a mere matter of time and intensity as to when the organ in question will become useless or intensely dangerous to the general economy. If their due force is appreciated these reasons would appear sufficient to justify those who look upon actual displacement of the kidney, when this can be demonstrated, as a serious condition, one which in itself not only justifies but with some reservations actively calls for interference on the part of the surgeon. Before, however, discussing the form which such interference should take it will be well to review shortly the various ideas prevalent as to causation, since the view of the surgeon as to treatment will depend very largely upon his belief as to the causes which have produced the condition.

Certain writers attach great importance to the presence of the normal amount of fat in the fatty capsule surrounding the kidney as a means of maintaining the organ in its proper position and accordingly lay stress upon any previous disease accompanied by emaciation, looking upon this as a most efficient predisposing cause; consistently they advise measures which have as their object the increase of fatty deposit. This idea is not now generally accepted, since loose kidneys have been found to be present in persons with more than a fair share of adipose tissue, and operative work has demonstrated that a displaced kidney may coexist with a well filled fatty capsule. Others claim that this displacement is only part of a general loosening of all the abdominal viscera—part, in fact, of Glénard's disease. This idea also has not stood the test of operative observation.

Much more importance must be attached to the far more generally held opinion that the kidney is maintained in its position by the combined and interacting pressure of the various abdominal viscera. Professor His and Professor Cunningham have described and figured a central transverse mound or ridge which they found on the anterior surface of kidneys artificially hardened *in situ* and which they consider is produced by the opposing pressure of the various organs lying in contact with them. "The impressed districts," they say, "lying above and below indicate pressure applied to the anterior surface in two directions, and the intervening eminence is the result of this counterpressure."

None of these, however, explain the great and universally admitted preponderance of dislocation on the right side, nor am I aware of any serious attempt at such explanation until Hutchinson, jun., drew attention to the existence of Toldt's fascia on the left, and its absence on the right side, as well as to the manner in which the splenic flexure lay over and was fixed to the anterior surface of the left kidney, whilst the hepatic flexure remained free and lay entirely below the right. Both of these restraints lie, however, above the peritoneum, which can still be loosened behind them by a descending kidney.

Much more to the purpose appear to be the observations of Longyear in the *American Journal of Obstetrics* of November, 1905. This writer describes a tendinous attachment between the lower pole of the kidney and the colon below. This is formed, he says, by the gathering together of longitudinal fibres from the fibrous network forming the framework of the fatty capsule; this band or cord could be followed downwards between the peritoneal reflections to the margin of the lower peritoneal attachment of the bowel close to the ileum and was probably the tissue left in the track of the ovary in its descent from its place of origin in the Wolffian body. These fibres unite with the posterior longitudinal band of the colon on both sides with that of the ascending colon on the right and that of the descending colon on the left. When the ascending colon contracts upon its contents it pulls, so Longyear says, upon this band and through it upon the kidney in a downward direction. When the descending colon contracts, on the other hand, the pull is exerted in the reverse direction—that is, in a direction upwards. If this description is correct it is easy to understand why the right kidney should be so much more frequently displaced and the existence of this connexion has an important bearing upon the question of operative treatment, as will presently be seen. In connexion with this it may be noted that Nagel describes the ligamentum suspensorium ovarii as springing developmentally from the phrenic ligament of the kidney, and being therefore situated on the posterior abdominal wall. In addition Newman has described what Barthol calls the ligamentum suspensorium renis—a number of fibres with well-marked attachments above to the diaphragm and internally to the spinal column, but with vague terminations below and outside. These fibres must end somewhere, and it is at all events possible that they may end as Longyear describes.

Whatever view is taken of the causation of wandering kidney it is evident that the factors producing the displacement act unequally upon the two equally important segments of this part of the urinary apparatus, the kidney itself and the peduncle composed of its ureter and the vessels passing to it from the aorta and vena cava. Whether loss of supporting fat, alterations in the incidence of intraperitoneal pressure, or undue traction upon the lower end of the ligamentum suspensorium renis, all will act with much greater and more immediate force upon the kidney itself, and it will only be after these factors have been in action for some time and have begun to be reinforced by the added weight of this organ, that any alteration will be perceptible in the attachment of the ureter to the spinal column or in the length of the vessels.

Two stages in the descent of a "wandering" kidney are therefore predicable from the very conditions present, and the history of reported cases proves not only that such stages do occur, but that they are easily recognisable, the symptoms present in each being markedly different. In the first stage the kidney itself tends to sag downwards, the lower pole becoming recognisable by the examiner's hand on a lower and more median plane than normal; the vascular peduncle being, however, of a normal length, the actual position of the organ will be that of the resultant of the two forces acting upon it—loss of support, aided by any other force pulling downwards, and the inward pull of the vascular and ureteral peduncle; it will consequently rotate in the line of a curve the centre of which will be the most fixed point of its attached vessels; this is the stage described by Morris as a distinct variety, the "cinder-shifting" variety. The symptoms of this stage are such as might be expected from the mechanical condition; the bend produced at the junction of the renal pelvis with the ureter, produced by the rotation of the kidney, will interpose a distinct obstacle to the due evacuation of urine from the renal pelvis and the renal intra-pelvic distension so caused will result in "aching and tenderness in the renal region of the affected side." If the bend be an acute one and somewhat suddenly made Dietl's crises will be present; these depend not only on the ureteral obstruction but also, and perhaps mainly, upon the kinking or twisting of the renal veins which necessarily accompanies it; these crises are characterised by "violent attacks of colic, attended by nausea and vomiting, possibly abdominal distension and tenderness, sometimes by a rise of temperature and collapse" (Morris).

Arbuthnot Lane[2] says that torsion such as is found in the case of an ovarian pedicle cannot possibly occur, and there can be no doubt that in the true "wandering" kidney this is correct, since sufficient room for this to take place does not exist, but it is certainly true that the renal veins may be so bent over the more resistant structure of an accessory renal artery when that exists, or over the spinal attachment of the ureter, in consequence of the quick curve described by the kidney in its descent, as gravely to obstruct the flow of blood in them. Lane has noticed that in these cases the lower end of the kidney comes forward in front of the ureter; the main axis of the kidney from being vertical becomes horizontal; the ureter thus becomes bent over the body of the kidney itself. Newton Pitt says that the ureter may become sharply bent over an aberrant inferior renal artery. In whatever way this result is produced, "temporary anuria, followed later by an unusually free flow of urine," will in such cases be a notable symptom.

Digestive disturbances, nausea, dyspepsia, vomiting, and jaundice, have been frequently observed; as to their mode of production, opinions differ. Lane thinks they may be due to dragging upon the renal plexus or to direct displacement of the vertical part of the duodenum. Dr. Maclagan recorded in THE LANCET three cases of jaundice which he believed to be due to the direct pressure of displaced kidneys upon the cystic duct.[3] Presumably the common duct is meant. Morris, with more probability, attributes such symptoms to the dragging downwards of folds of peritoneum which pull upon the duodenum or gall-ducts; he has noted that traction forwards and downwards of a right kidney pulls upon the duodenum at a point two or three centimetres below the entrance of the biliary duct. He does not believe that direct pressure upon the bile-ducts is ever produced by a floating kidney, and if by that term is meant a "wandering" kidney—for these terms are used indiscriminately by various writers—it is difficult to see how it could be, the movements of such a kidney, however free in the vertical and horizontal planes, being always restricted by the peritoneum from any marked excursion in the antero-posterior plane, whilst the gall-ducts, unless bound down by adhesions, are capable of almost unrestricted movement in that plane, and could therefore always escape.

It will have been noticed that the symptoms so far enumerated are almost all of an acute type; moreover, that they occur early in the history of those cases in which they appear; consideration of their mode of production readily explains this. It is unfortunate that in precisely the same cases and for the same reason the recognition of the displacement is the most difficult; inasmuch as the peduncle has not yet become elongated, the actual descent of the kidney is necessarily restricted and, especially in stout people, may be very difficult to recognise; indeed, a diagnosis may be only possible by exclusion, or even, as Morris observes, by exploratory operation.

In the second stage, owing to the persistent action of the downward traction, whether this be due simply to the unsupported weight of the kidney itself or, as Longyear believes, to the pull of the colonic connexion, the attachment of the ureter to the spinal column becomes looser, is elongated, and permits more range of movement; at the same time and from the same causes the vessels gradually elongate and become less firmly attached to their surroundings; both these conditions act and react upon one another, so that the kidney obtains at last so much freedom of movement that it may be found in the iliac fossa or in almost any part of the corresponding side of the abdomen. Diagnosis by means of manual examination is now easy, whilst the symptoms observed are different in character and are generally less acute. Kinking of the ureter is much less likely to occur and, if it does, is much more easily overcome by the *vis a tergo* of the urinary stream. The symptoms are still the same in name but not in character. Pain is no longer sudden and acute, there is rather a feeling of weight and discomfort in one loin or spreading downwards into the groin on the same side, with a sensation of dragging, and there are stiffness in the back, some cramp in the abdomen, sensations which may simulate fœtal movements, and backache. All these symptoms will be increased by exercise, by standing or running, and will be relieved, almost certainly, by rest in the supine position. The most uncomfortable pose will be that of lying upon the sound side. Digestive disturbances are common in this stage, but they tend to take the form of chronic or intermittent dyspepsia, coming on without any cause in the shape of improper diet. Apnœa or pseudo-anginal attacks may also be noticed when the lesion occurs on the left side, apparently being due to traction upon the pericardium through the diaphragm. It is perhaps in this stage also that neurasthenia and hysteria are most often seen. In order to reach this stage the patient must have passed through many weary months of apparently unexplainable discomfort—the persistently recurring drag upon the renal attachments, upon the renal plexus, and through it upon the solar plexus; the opening up of the post-peritoneal planes of connective tissue with its resultant loss of support to the colon, this latter in its turn favouring constipation and the sapræmia which is one of its consequences; all these may well act and react upon one another until at last the half-poisoned and therefore greatly weakened nervous system, persistently fretted, loses its tone and with it all power of controlling hysteric manifestations.

---

[2] Brit. Med. Jour., April 1st, 1905.

[3] Transactions of the Medical Society of London, vol. xxv., p. 59.

In both stages there may be present a complicating factor which fortunately is only occasionally seen; this is the presence of phosphatic or other calculous deposit in the renal pelvis or ureter. Should such deposit be present it will naturally greatly intensify the pain felt; it probably stands rather in the position of an effect than of a cause of the digestive disturbances; its relation to hysteria is still more doubtful.

So far only the symptoms of this condition have been considered, but the differentiation of it from other states with which it might be confused must now be briefly dealt with.

The pain and dragging in the right loin are the things of which the patient most often first complains. These usually precede Dietl's crises and, therefore, there is usually a history, if it can be obtained, of such symptoms extending over an indefinite time. Sometimes the patient will refer the commencement of her discomfort to an injury. No doubt a sudden injury to the loin may act as a cause in some cases; one of my patients believed that a slip off a step-ladder which brought her side suddenly in contact with the edge of a table was the starting-point; Newman mentions a similar case. Although it would be impossible to deny this still previous experience will convince any one who is alive to the fact of the great tendency of patients generally to put down to accidents, however long the interval that may have elapsed, all unexplainable symptoms from which they may afterwards suffer and this is especially the case with neurasthenics. In a search which the writer undertook some years ago with reference to the etiology of chronic hernia he came across persons who attributed their disability to accidents which had happened 20 years before the appearance of any weakness in the abdominal wall and it was only on a close cross-examination that this interval was admitted, the first statement of the patient suggesting that the accident had immediately preceded the rupture. So also it often is with other complaints, mobile kidney among the rest. Statements of this kind should always be received with caution. Dietl's crises may suggest the passage of a gall-stone through the biliary ducts, or a urinary calculus through the ureter; they may also simulate attacks of appendicitis. The first may be eliminated by the absence of a positive reaction to Murphy's test; the second, by the fact that the pain is not usually referred to the external genitals and by the absence of any blood or crystalline deposits in the urine; the last by the absence of a rise of temperature, by the absence of pain in the right iliac fossa and rigidity of the lower end of the right rectus and oblique muscles. But the actual diagnosis will at the last depend upon the power of the examiner to detect any movement of the kidney itself. Three methods are recommended by means of which this may be done.

1. *Glénard's method.*—The lower part of the thorax is compressed by placing the fingers of the examiner's left hand just below the eleventh rib posteriorly and the thumb of the same hand on the level of, and internal to, the chondral extremity of the ninth rib in front, the other hand, placed on the umbilical region, crowding back the abdominal walls; the first hand thus forms a narrow ring, completed on its inner side posteriorly by the vertebral column and anteriorly by the fingers of the other hand.

2. *Israel's method.*—The patient lies on the sound side; the examiner stands on the left side of the couch to examine the right kidney and *vice versâ*. For the right kidney he places the fingers of the left hand on the right lumbar region and the right hand on the anterior abdominal wall, so that the tips of the index and middle fingers are two fingers' breadth below the junction of the ninth and tenth costal cartilages. The patient takes a deep inspiration and the kidney is felt at the end of this act.

3. *Morris's method.*—The patient lies flat on her back, with the shoulders slightly raised and the lower limbs slightly flexed; she lies close to the right side of the couch for the examination of the right kidney, to the left side of the couch for the left kidney, the examiner stands or sits on the same side as that of the organ he is examining, and grips the loin between the two hands; with that on the back the lumbar parietes are firmly pressed forwards, while the fingers of the hand in front gently and steadily depress the anterior abdominal walls upwards, backwards, and inwards. The patient is directed to take a long-drawn sigh, the front hand follows the receding wall relaxed by expiration; if not successful the sighs are to be repeated. This method is sometimes assisted by raising the patient's shoulders so that she assumes the semi-recumbent attitude, or by rolling her over to the opposite side. The kidney is best felt at the end of inspiration and at the very beginning of expiration.

Of these methods it is difficult to say which is the best, sometimes one method will succeed, sometimes another. One point, I think, is worth adding, whichever method is used—and they do not greatly differ—the fingers of the hand placed in front should be allowed time enough to enable them gently and slowly to sink until they come into contact with the anterior surface of the spinal column; still keeping in contact with it, the hand is so turned that its palm looks upwards and outwards, the tips of the fingers slide downwards and upwards along the side of the vertebræ until they feel the posterior wall of the abdominal cavity; if now the other hand is made to grip the loin the fingers of the anterior will feel those of the posterior hand, whilst the thumb of the latter will complete the ring so formed below and around the kidney; in this way it will be possible to assure oneself that the kidney is not already prolapsed, since were this so the anterior fingers must have come in contact with it during their descent, and nothing can now pass downwards without detection. The point I believe on which it is well to lay stress is the identification of the spinal column by the fingers of the anterior hand before any effort at inspiration is made by the patient. In this way the examiner is not only made aware of his exact locality, but can differentiate movement behind the posterior peritoneum which can only be due to kidney, from movements above which might be due to omental, biliary, or intestinal masses of various kinds. Of course, in practised hands, the shape, size, and peculiar feel of the kidney are easily identified, but to novices these characteristics might not be so clear. Very often the displacement can be most readily detected when the patient is in the upright position.

When the question of the treatment of "wandering" kidney is considered, as many differences of opinion are encountered in this as in those already discussed, and at the present time none of the methods in vogue can be said to be universally accepted. As a matter of course, external appliances which, by their position and the direction in which the force they could be made to exert will act, would restrain the movements of the loosened organ or supply the support which had been lost were used at first, and it was only when these were found to be inefficient that operative means were sought. Trusses of various kinds, belts, corsets, with or without pads, have been devised in almost endless variety. Of these perhaps the best are two, one made by Salt and Co. of Birmingham, in which the pad is inflatable and is distended after the belt has been adjusted; the other made by Ernst of London, and recommended by Sir F. Treves. In some cases, no doubt, such appliances may be effective, but they are not always to be depended upon, and should they fail to support the kidney properly, should that organ indeed slip, as it is very prone to do, beneath them, so that pressure is brought to bear upon the kidney itself, they will greatly intensify, instead of relieving, the discomfort already felt. Moreover, some persons cannot bear the pressure necessary, or are so worried by the presence of the appliance that the nerve irritation persists and is increased. Morris says: "It is often stated that a well adapted belt is all that is requisite. I have not found it so; belts, pads, and trusses of all kinds are very unsatisfactory for this condition. They do not often effect any good, they must more often aggravate the suffering."

Sturmdorf says: "It is impossible to hold a prolapsed kidney in its normal position by any endurable pressure or tension exerted through the abdominal wall; not even the trained hand of the examiner can restrain a moveable kidney; coughing, sneezing, and muscular exertion will displace hand or pad and permit the kidney to fall into its abnormal position, where it will be firmly held by the compressing or constricting appliance, which thus defeats its own object."

I have not myself been able to succeed with these appliances; in one or two cases their use has at first been followed by good results but sooner or later the old troubles have returned and the belt has been discarded as useless. Still, it is not possible to consider all the testimony in their favour, from that of Sir Frederick Treves downwards, as mistaken, and the truth probably is that for some persons they are perfectly sufficient. Such cases should, I think, be encouraged to persevere with that mode of treatment; first, in almost all cases it would be wise to try its effect, and if it fails to have recourse to some form of operative interference. What form that interference should take we have now to consider, and it is in connexion with this part of the subject that I venture to suggest an alteration in the aim, and consequently in the technique, of the operation for nephropexy. In order to judge of the advisability of such alteration I will briefly emphasise the main points in the changes produced by this dislocation.

The kidney by its excursions has opened up for itself a cavity in the post-peritoneal connective tissue below and internal to its normal habitat; later, as the peduncle loosens and becomes lengthened, this cavity is still further enlarged downwards. Until this is closed there is always a potential cavity ready to receive the kidney should its restraining attachments give way. Whilst the superior extremity of the ligamentum suspensorium renis usually remains firmly attached to the diaphragm its lower extremity becomes opened out and lax. Any support which it may previously have given to the colon is lessened or taken away. The lower pole of the kidney becomes congested. Its pelvis is progressively dilated and contains more and more urine, which is never thoroughly emptied out of it. An operation, to be successful, must replace the viscus and hold it in such a position that both these results may be neutralised and completely prevented in future. As time goes on the ureteral attachment to the spinal column is gradually loosened, whilst the renal artery and veins become lengthened. An operation which would restore this attachment would have its advantages. Normally the posterior wall of the kidney is free and not adherent to the posterior abdominal wall. Its tissues contain no foreign substance on which sabulous material can collect and crystallise.

Up to the present time all operations for nephropexy have been made through an opening in the muscular wall posterior to the kidney, through which it is impossible to see whether or not the kidney is accurately replaced in its former location, and no attempt has been made to close the cavity in the post-peritoneal connective tissue below it.

It cannot be said that present methods have been uniformly successful. Many cases are on record in which the attachment made has again given way, and were this not so, the ever-increasing, ever-changing methods of posterior attachment would in themselves be evidence enough. Commencing with two or three sutures through the fatty capsule, operators have carried their ligatures deeper and deeper. At the fibrous capsule, indeed, a stand was made for a time; sutures were made to embrace more and more of this membrane; it was slit, turned back, and the raw internal surface united to the posterior abdominal wall. More and more sutures, up to ten double sutures (Lucas Championnière), or even 20 (Walsham), were used. Max Broedel introduced a very ingenious suture which, before it could tear out, must drag the capsule into the kidney itself.[4] Vulliet utilised a strip of tendon from the erector spinæ and passed this beneath the capsule, anchoring it again below to the aponeurosis. But the stay here was short; other operators inclosed more and more of the kidney substance in the grip of their threads until Fenwick was able to describe an operation for renal calculus formed in the kidney pelvis around a suture which, introduced during a previous nephropexy, had penetrated that cavity.

No attempt has been made to supply inferior support to the kidney except, I believe, that once a sort of network of catgut was suggested which should hold the kidney as in a hammock. It is difficult to understand to what supporting posts the ends of the hammock were to be fastened; nothing further has been heard of this method, so I presume that it has been abandoned. In all cases the organ has simply been hung up to the posterior abdominal wall, so that in the upright position the weight of the organ is constantly exerting its force to loosen its attachments. Any suture which penetrates the kidney substance will have in its grip a certain amount of friable tissue, which is easily cut through, and the suture so becoming loose, the organ is no longer held firmly in contact with the surface to which it is intended to adhere. This adhesion is therefore never very firm even at first, and will become increasingly loose as the weight of the kidney comes to act upon it. Failure to secure a good result after operation was by some attributed to another cause: the fixation of the kidney at too low a level. I have already pointed out how difficult it always must be accurately to gauge the position of an organ seen only through an opening in the muscles behind it. Goelet says that "if the kidney is too low the operation does not facilitate its restoration to normal renal action; it does not prevent more or less constant renal congestion and accumulation of urine, owing to the flexure of the ureter which remains attached on a higher plane than the kidney."

The immense preponderance of right- over left-sided dislocation is not without significance. If, as I believe, the reason for this is the opposite action of the ascending and descending colon upon the renocolic band of either side it is evident that any operation which, as all posterior ones do, simply reproduces this pull has inherently a tendency to relapse. It would be a great advantage if this pull could be transferred to some other and more fixed point.

In the conception of any new operation for this condition attention should be paid to all these points and their full importance should be appreciated. It should supply the requisite support for the kidney, and that support, in order to be most effective, should be applied to the lower pole of the organ; it should close once more the opening to the post-peritoneal cavity formed by the kidney itself; it should enable the surgeon to replace the wandering kidney accurately in its original site, so that the vessels are not dragged upon nor the ureter kinked, and this replacement should be a matter of certainty, not of mere probability. It should give most support in the upright position, when it is most needed; it should not introduce into the secreting substance of the kidney any foreign material upon which calculi may form, nor should it depend upon tissues which, like the kidney, are friable, and will yield before the constriction produced by the sutures. If at the same time it can give a new *point d'appui* for the fibres which are continued into the posterior longitudinal band, and so take off the old drag upon the kidney, it will do much towards preventing any return of the dislocation.

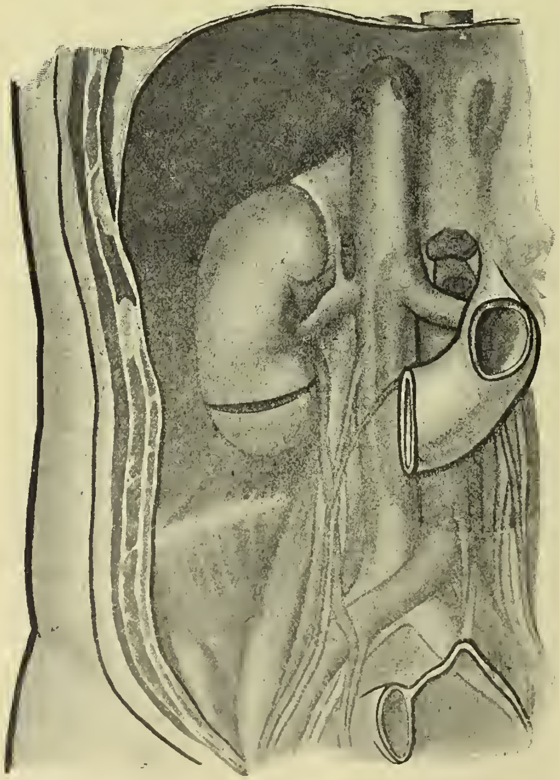
The operation which I have devised, and which I submit to the judgment of the profession, aims at the satisfaction of all these indications, and also at the production of a Toldt's fascia, and the anchoring of the large intestine below the kidney in such a way as to produce on the right side the anatomical safeguards present normally on the left.

In old days, while yet the peritoneum was a sacred inclosure which must not be invaded except on the direst necessity, it was natural enough that an extraperitoneal organ should be attacked from without, however inconvenient the means of access, but at present and with our improved methods there is no more danger in the one than in the other route, and in order to carry out all the indications to which I have referred it is necessary to attack the organ from the front. The incision I have found most useful is that advocated by Rutherford Morison in cases of cholecystotomy; an obliquely transverse incision through the muscles of the abdominal wall outside the rectus muscle, the feasibility and harmlessness of which have thus been demonstrated. This incision gives free access to the renal fossa on the right side, and renders all succeeding steps in this, the anterior fixation of the kidney, easy and practicable. It was, indeed, the use of this incision in biliary cases which suggested to me its capability for utilisation for the operation for renal support. If this oblique incision is carried from a point corresponding to the chondral tip of the tenth rib, or what is the same thing, from the outer edge of the rectus muscle backwards to a point midway between the sternum and the spine, on a level one inch below the border of the rib, admirable access is gained to the renal fossa, and all further steps present no difficulty. From this point I shall only describe the operation on the right side, which is the side most frequently affected. The liver being lifted, the stomach drawn inwards, and the hepatic flexure of the colon depressed out of the way by broad retractors or large flat sponges the kidney can easily be felt and seen beneath the posterior peritoneum. And not only the kidney but, in the majority of cases, the renal veins also. In the displaced position of the kidney these veins are seen through the semi-transparent peritoneum, lying obliquely with their renal extremities much lower than the spinal. When the kidney is pushed up they can be seen to glide upwards and to become transverse, and so they form a good guide, not only to the correct position of the kidney, the position in which it should be fixed, but also to the point of entrance of the first fixating suture.

---

[4] International Clinics, vol. i., Thirteenth Series, p. 288.

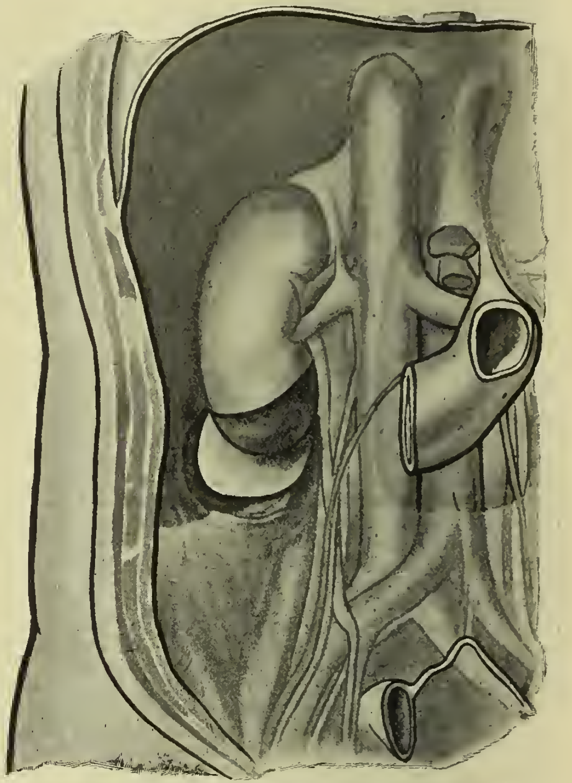
Fig. 1.



The kidney is exposed after division of the parietal peritoneum. The curved incision described in the text has been made in the lower part of the kidney capsule.

The parietal peritoneum is now divided transversely over the lower fourth of the kidney; the two peritoneal edges being held apart, a curved incision, concave upwards and outwards, is made in the proper capsule (Fig. 1), and the lower segment of this loosened from the anterior renal surface down to its inner and lower extremity; this capsule remains, of course, attached to the posterior surface of the organ; its flap is turned downwards and inwards, leaving the raw surface of the kidney exposed for a corresponding distance (Fig. 2); two or three sutures attach this loosened edge of the capsule to the fascia beneath; the peritoneum is again sewn up by catgut; the anterior surface of the lower leaflet of the true capsule is now in contact with the posterior abdominal wall, and the posterior surface of the peritoneum is lying upon it and upon the bared lower anterior renal tissue (Fig. 3).

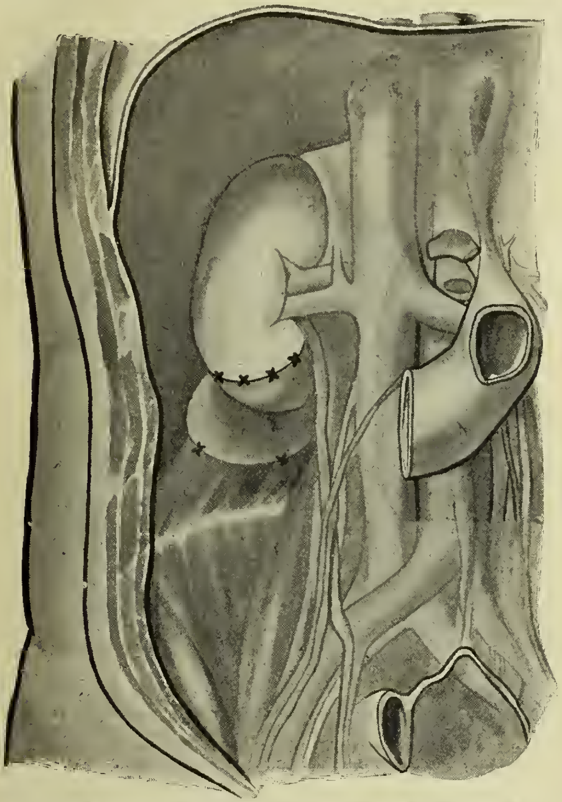
Fig. 2.



The lower flap of the kidney capsule is reflected downwards, leaving the raw surface of the kidney exposed.

The correct position of the kidney being now accurately determined it is held there by the three outer fingers of the left hand, whilst the left forefinger is placed on the inner side immediately below the ureteric insertion. A long straight needle, armed with a long thread of iodised or chromicised catgut, No. 3, is pushed directly backwards at this point until its point emerges behind; another needle, carrying the opposite end of the same thread, is pushed through in the same manner one centimetre below the first; when both needles are drawn through (Fig. 4) the thread is tied over the muscular layer behind the peritoneum, capsule, and posterior tissues are united on the inner side of the lower pole of the kidney; another pair of needles are placed in a similar manner so as to carry a loop of catgut below the inner lower angle; two or three more pairs carry loops below the kidney, and, if deemed necessary, around the lower and outer side of the organ; all these pass through peritoneum, capsule, subperitoneal connective tissue and muscles; when these are all drawn tight and tied it will be seen that the kidney is supported by a row of sutures which do not penetrate its substance but effectually fix it and close the cavity beneath it, whilst the union of the capsule and peritoneum has formed a somewhat stronger Toldt's fascia than normally exists on the opposite side. Any communicating fibres between the kidney and the colon are now pinned down to the posterior abdominal wall, to which henceforth any downward pull is transferred. The skin may now be divided behind between the protruding needle points, and this incision carried down to the muscular layer over which each suture is tied; or, as I have found to be preferable, a curvilinear incision may first be made in the line which would be produced by the protruding points. If this is done it greatly facilitates the passage of the needles, and in my later operations I have always done this; in any case the penetrating sutures are tied and buried by a catgut suture through the skin and subcutaneous tissues. The closure of the abdominal wall in tier fashion completes the operation.

FIG. 3.



The lower flap of the kidney capsule is seen fastened to the fascia on the posterior abdominal wall by two sutures; the upper row of four sutures unites the cut edges of the peritoneum over the bared kidney tissue and the reflected capsule.

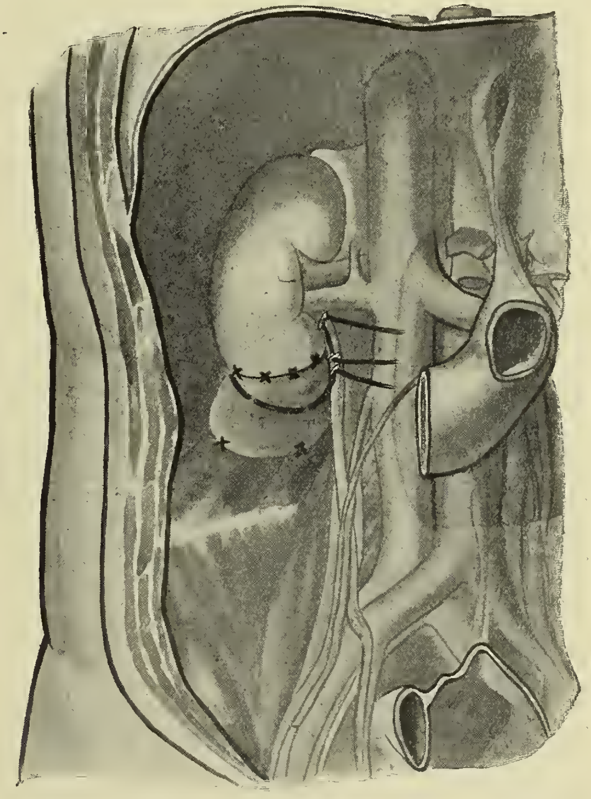
In the operation, as at first conceived, no attempt was made to utilise the fibrous capsule. The fixating loops were simply passed through the peritoneum, which was, therefore, not divided, and the subperitoneal tissues and muscles; but my friend and house surgeon, Mr. R. W. Porter, suggested this addition, and as it was evident that it would render the fixation more solid and complete I have adopted it in my later operations.

A careful consideration of the anatomy of the part, followed by demonstrations on the cadaver, show the following facts: 1. That there exists at the line which would be described by the lower edge of the kidney when in its normal position an area which is comparatively free from vessels and important nerves. 2. The ilio-inguinal and hypogastric nerves emerge at the level of the pedicle formed by the renal artery and veins and therefore lie above the line of the proposed suture. 3. The external cutaneous nerve lies altogether below the area involved. 4. The structures pierced by the needles are: the peritoneum, some fibres of the sympathetic system of nerves, the subperitoneal connective tissue, the psoas muscle, the anterior lamella of the lumbar fascia, the quadratus muscle, the posterior lamella, and some fibres of the latissimus dorsi. 5. Should the upper nerves be embraced by one of the sutures their position in the midst of the mass of the psoas muscle would protect them from injurious constriction, however tightly the sutures were drawn. 6. At the normal distance of the kidney from the spine the lumbar arteries entirely escape so long as care is taken to avoid the under surfaces of the transverse processes. 7. At this level a practically clear area exists in which there is nothing which can increase the ordinary risks of an operation.

After several trials upon the cadaver in order to prove the practicability of the operation I performed it first upon the living subject in February, 1906. Since then I have had nine other cases, or ten in all. The proceeding so far has had no mortality. It is, of course, too early to say anything as to the permanence of the results obtained; one of the earliest has relapsed, but in that one the capsule was not utilised, the needles being simply passed through the peritoneum. Experience of suturing intestine has shown that sutures quickly cut through this membrane, and apart from the advantage of a broader area of adhesion obtained by the reflexion of the proper capsule, it is evident that a much firmer and more permanent control is obtained over the kidney by including this membrane in the grip of the loops. In one case also the fixating threads, being of silk, suppurated, and had to be removed three months later, the kidney, however, remaining fixed. It has seemed to me that the constipation of which these patients had previously complained has been considerably improved. It is possibly to be expected that such improvement may be carried still further as the gut recovers itself under the new conditions.

Such an operation can evidently not be carried out if section of the kidney is required for any reason, such as renal calculus, pyonephrosis, or any similar complication. In such cases the extraperitoneal operation must be undertaken in spite of its disadvantages; nor is my method yet available for renal dislocation on the left side. As, however, in the great majority of instances the kidney recovers itself if maintained at the proper level and as the immense majority occur on the right side these disqualifications have not much weight. In most the anterior operation will be practicable and being founded on scientific reasons and being best fitted to meet the indications of this displacement will be found, I conceive, to give better and more permanent results.

FIG. 4.



The first stitch is shown with the needles *in situ* on the inner side of the kidney, immediately below the ureteric insertion. The thread is seen as it would lie after the passage of the needles and when drawn tight. The ends of the threads are of course much longer than shown, to allow of their passage through the muscular wall and their being tied behind. Of the second loop the upper thread has not been drawn through.

Manchester.

# A STUDY OF THE CONDITIONS PRODUCING THE ANOMALOUS REACTION NOT INFREQUENTLY MET WITH ON TESTING URINE FOR SUGAR WITH FEHLING'S SOLUTION.

BY F. W. PAVY, M.D. LOND., LL.D., F.R.S.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL; HONORARY PHYSICIAN TO KING EDWARD VII. HOSPITAL.

(Continued from p. 227.)

## INFLUENCE OF CREATININE ON THE REACTION BETWEEN FEHLING'S SOLUTION AND SUGAR.

As yet I have only spoken of the interaction that takes place between creatinine and Fehling's solution. Let us now see what effect is exerted by the presence of creatinine upon the reaction produced between Fehling's solution and sugar. If much sugar is present a full reaction immediately occurs, the amount of suboxide produced being beyond the power of the creatinine to check its being deposited. If, on the other hand, only a small amount of sugar is present the reaction assumes a modified character and the smaller the amount the greater the extent of modification that ensues. The first effect noticeable is some fading of the blue colour, the liquid remaining clear, and if the amount of sugar should be sufficient to reduce fully the Fehling's solution used, and the amount of creatinine present sufficient to inhibit for the requisite length of time precipitation of the reduced oxide, the liquid will attain a colourless state before the precipitation stage of the reaction is reached. Everything depends upon the relative amounts of sugar and creatinine present, and consequently, according to the conditions existing in these respects, so will be the result that occurs.

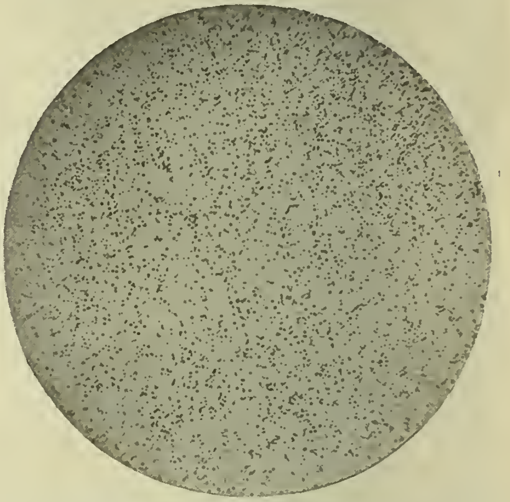
If close attention be given to the phenomena that take place it is noticeable that two distinct events have to be dealt with. The one is the production of an altered kind of precipitate; the other is the inhibition of suboxide precipitation by the agency of solvent action. I will take them for consideration in the order they have been mentioned.

*Production of an altered kind of precipitate.*—Microscopic examination tells us that the physical condition of the suboxide precipitate produced by the action of sugar upon Fehling's solution is very different when creatinine is present from that of the precipitate produced when sugar and Fehling's solution are alone dealt with. As I have already stated, the precipitate which falls in the latter case is seen on microscopic examination to consist of fairish-sized nodules which have a strong agglutinating tendency and cohere into irregular-shaped clusters. They are shown at Fig. 1 inserted in a former part of this communication. The precipitate which falls in the presence of creatinine presents itself in the form of very minute particles more or less devoid of coalescing tendency, so that the field is strewed, as is shown in Fig. 5, with isolated particles after the manner of what is seen in the case of an emulsion and, when in an exceedingly fine state from the employment of a full quantity of creatinine, looking, as previously mentioned, like the molecular base of chyle.

Creatinine, then, has the effect of interfering with the coalescence of the precipitated suboxide as it is thrown out of solution. A condition exists comparable to that of an emulsion, which may be defined as consisting of small non-coalescing particles suspended in a liquid. There are emulsifying agents or agents possessing the property of giving rise to the passage of matter into a finely divided state and keeping it in this state by annulling the exercise of surface attraction power—a power which I may speak of in passing as standing at the foundation of a vast number of the phenomena taking place around us—a power which constitutes the determining factor in connexion with, for instance, capillary attraction, the wetting or resistance to wetting of substances, the selective absorption by charcoal, the taking or not taking of stains, and *ad*sorption which counterfeits the selective action of living matter—a power which represents affinity without actual chemical union and which, unlike affinity, has not yet received the systematic consideration as a power that it appears to me to deserve.

Considerable attention has been given to the subject of emulsification viewed in relation to the operative influence existing. I need not enter into the questions that have been raised. Suffice it for my purpose to say that something is brought into play which interferes with the exercise of the attractive power that, otherwise circumstanced, leads to coalescence. Creatinine in the case under consideration gives to the environment of the falling suboxide precipitate a property which prevents the newly formed product from coalescing into aggregated masses. Thus, when full force is in play the product may present itself in so minutely divided a state as to be only just within the range of visibility with the magnifying power of the microscope, or, on the other hand, beyond the power, it may be assumed, of distinct perception, as when a pale-coloured, opalescent state exists. When in actual solution a colourless watery liquid is obtained.

FIG. 5.



From photomicrograph of suboxide precipitate from two cubic centimetres of 3 per 1000 solution of dextrose, two cubic centimetres of Fehling's solution, and two milligrammes of creatinine. Magnified 440 diameters.

By other agency than that of creatinine a corresponding result may be brought about. I will refer to the effect of albumin and ammonia, which has been already alluded to as supplying an illustration of an instructive nature. In the presence of albumin alone no deviation from the ordinary character of precipitate occurs. In the presence of ammonia the precipitate falls in a finer form, but nevertheless assumes a reddish character. In the conjoint presence of albumin and ammonia, however, it comes down in the yellow state and in character agrees with the condition presented as a result of the action of creatinine. Reference to Figs. 4 and 5, giving photomicrographic representations of the two precipitates, shows the close accord in microscopic appearance that exists between them.

*Inhibition of suboxide precipitation*, which constitutes the second point that was mentioned as presenting itself for consideration, is a phenomenon that calls for broad consideration from the fact, as will be seen when the discussion of its source of production is reached, that we have a complicated set of occurrences to give attention to. Let us here, in the first place, see what is actually observed when small quantities of sugar are boiled with Fehling's solution in the presence of creatinine.

If two cubic centimetres of Fehling's solution are boiled with two cubic centimetres of a 3 per 1000 solution of dextrose and two milligrammes of creatinine, which stand as representative of the ordinary amount of creatinine present in two cubic centimetres of urine, it is noticed that a suboxide precipitate falls almost, or quite, as quickly as in the absence of creatinine. It is true the two precipitates are different in character, but this is a point bearing on the other side of the question and therefore one not now being considered. If, next, instead of two milligrammes of creatinine, ten milligrammes be employed, precipitation is found to be perceptibly delayed, and a decided fading of blue (reduction without precipitation) is perceived to occur before the precipitate appears.

If the quantity of dextrose be lessened and a 1 per 1000 instead of a 3 per 1000 solution be taken, the following represents the nature of the result that is obtained. A much diminished formation of suboxide is, of course, involved in the alteration. With two cubic centimetres of Fehling's solution, two cubic centimetres of a 1 per 1000 dextrose solution, and two milligrammes of creatinine, a somewhat prolonged boiling is required to produce any change beyond a little fading of the blue colour of the test. The contents of the tube are then seen to become green and muddy, and afterwards yellowish-green, followed by greenish-yellow. In a repetition of this experiment, substituting ten milligrammes for the two milligrammes of creatinine, the fading of colour is seen to be more marked, and it is not till after very prolonged boiling that any further change is noticeable, when passage to green occurs, quickly followed by the assumption of a muddy green state and the subsequent acquirement of a greenish-yellow colour. During the boiling a copious evolution of ammonia takes place in the case of the experiment with the ten milligrammes of creatinine, whilst none may happen to be distinctly recognisable in the case of the other, although obviously it becomes developed.

The effect, then, of the presence of creatinine in connexion with the point under consideration is to more or less inhibit suboxide precipitation, the inhibition standing in proportion to the amount of creatinine present, and the phenomenon being attended with the evolution of ammonia.

### MECHANISM OF THE ACTION OF CREATININE DISCUSSED.

Up to the present I have only given attention to the facts belonging to the subject under consideration and it has been seen that in the anomalous reaction what we have to deal with is: (1) an alteration of the character of the precipitate, which constitutes the most striking feature in connexion with the matter; (2) delay of precipitation, which when sufficiently prolonged may be attended with complete decolouration before precipitation occurs; and (3) associated evolution of ammonia.

In the second edition of my work, "Researches on the Nature and Treatment of Diabetes," p. 16, I referred to the modified reaction under consideration and ascribed it to the solvent influence on the copper suboxide of the ammonia liberated by the action of the alkali of the test on the ammoniacal compounds contained in the urine. I mentioned that ammonia was to be recognised escaping from the test-tube during the boiling, that no appearance of reaction might at first be noticeable, that after further boiling there might be a change to yellow or brownish-yellow without any deposit, and that on still further boiling and obtaining a more complete expulsion of ammonia the precipitation of suboxide might be observed to take place. This was the way in which I there expressed myself. Later, in my "Physiology of the Carbohydrates," p. 178, I stated: "Observation shows that an amount of sugar distinctly recognisable in a pure aqueous solution may not be recognisable when existing in urine. In water there is nothing to interfere with the deposition and consequently the ready perception of any suboxide that may be formed. In urine, on the other hand, the ammonia developed by the action of the potash of the test upon the nitrogenous matter present may suffice to hold in solution the suboxide produced when only small in amount."

Dr. Hugh MacLean has recently disputed the validity of this view. In Vol. I. of the *Biochemical Journal*, 1906, referred to at the commencement of this communication, he, in relation to the inhibiting effect of urine upon the sugar reaction with Fehling's test, asserts (p. 122) that "the chief factor concerned in this is kreatinin, and not ammonia as suggested by Pavy." He contends that the evolution of ammonia is of too insignificant a nature to produce the required effect, and at p. 114 makes use of the following argument: "Were the reaction due to ammonia present in loose combination, boiling the urine with the alkaline part of Fehling's solution for a comparatively short time *should be sufficient* [the italics are mine] to remove it; urines, however, to which small amounts of dextrose have been added previously, do not give any more indication of the presence of sugar after boiling than before." Farther on he says: "All this is contrary to the idea that ammonia is the substance that prevents small amounts of sugar from showing with Fehling's solution in normal urine; while it may have a certain effect in some cases it is ordinarily evolved in too small an amount to markedly interfere with the reaction."

Dr. MacLean surmises that boiling the urine with the alkaline part of Fehling's solution for a comparatively short time "should be sufficient" to remove the ammonia. If he had ascertained by observation the effect produced he could not have expressed himself as he has done. As a matter of fact, it is difficult to get away from the evolution of ammonia. Boiling may be carried on for ten minutes or a quarter of an hour and still ammonia is found to be freely escaping. The boiling even may be carried on in an open capsule until solidification has begun to take place, and then, on adding water and transferring to a test-tube, renewed boiling will be found to be attended with the free evolution of ammonia made manifest by moistened litmus paper introduced into the mouth of the tube.

After suggesting that boiling for a comparatively short time with the alkaline part of Fehling's solution should be sufficient to remove ammonia, Dr. MacLean follows with the assertion that urines to which small amounts of dextrose have been added do not give any more indication of the presence of sugar after boiling (to get free from the influence of ammonia) than before. Dr. MacLean seems to have overlooked the destructive action exerted by a fixed alkali on dextrose. Instead of there being more indication of the presence of sugar after boiling with the alkaline part of Fehling's solution, as is suggested should be the case through the expulsion of ammonia, the actual effect that occurs is a disappearance of the sugar. It is easy for anyone to boil some dextrose-containing urine with the alkaline part of Fehling's solution, then add the copper portion and see the effect produced. Even with as much as 2 per cent. and over of dextrose present, and boiling only for one minute, sufficient destruction occurs to prevent any sign of reaction being obtainable, unless possibly it may happen after very prolonged ebullition that a slight show of precipitate may become apparent.

Since the above was written a second article has been published in the *Biochemical Journal* for April, 1907.[1] In this Dr. MacLean shows that he has discovered the facility with which dextrose is destroyed by the agency of a fixed alkali and that he has learnt the caution that is required to be exercised in experimenting with sugar in the presence of an alkali to escape arriving at a fallacious conclusion.

Looked at in relation to the view contended for, the points of inexactitude that have been referred to supply the main evidence upon which in the first paper the conclusion advanced was based, for there is nothing else that can be considered to afford any direct testimony in connexion with the matter.

Eury[2] advocated the view that creatinine is the source of the anomalous reaction under consideration and referred it to the formation of a soluble compound of cuprous oxide with creatinine. I have referred to Eury's article and find that he bases his conclusion upon the fact that the removal of creatinine from the urine by precipitation with the salts of mercury is attended with a loss of the inhibiting power over the production of the proper reaction that previously existed. He adduces no evidence touching the actual production and existence of the compound in question.

At this stage I thought it worth while to try experimentally if I could get the suboxide of copper taken up by creatinine. Measures were taken to obtain the suboxide in a finely divided form. 10 cubic centimetres of a 3 per 1000 solution of dextrose, 25 drops of Fehling's solution, and 15 drops of strong ammonia solution were boiled until the usual yellow precipitate appeared. This was obtained by centrifugalisation in a separated state and twice washed with water by the same process. Suspended in four cubic centimetres of water, a two cubic centimetre portion was boiled with 20 milligrammes of creatinine. Some of the precipitate evidently became dissolved but nothing settled out on cooling. Five drops of a strong solution of potash were added to the clear liquid to see if any manifestation of breaking-down effect was produced. No change of appearance occurred. Five more drops of potash solution were added and a translucent, colourless, flocculent precipitate settled out which disappeared on heating and reappeared on cooling. Nothing of a yellow suboxide character presented itself. Full boiling led, as might be expected, to the copious evolution of ammonia. Obtaining this result a search was made in chemical works to ascertain if any account was given of a combination between cuprous oxide and creatinine and it was found that Beilstein speaks under the head of creatinine of such a compound. In doing so he refers to the work of Maschke[3] who says that creatinine combines with cuprous oxide, forming a compound which separates out of a hot solution on cooling as a white flocculent precipitate suspended in a colourless mother-liquid. This statement, it will be seen, stands in accord with what I myself observed and does not fit in consistently with Eury's explanation of the mechanism of the anomalous reaction obtainable in connexion with Fehling's test and urine.

---

[1] Vol. ii., p. 169.

[2] Bulletin de la Société Chimique, 1900, vol. xxiii., p. 41.

In his second paper in the *Biochemical Journal*[4] Dr. MacLean adduces experimental work directed towards showing that the amount of ammonia capable of being evolved from creatinine is inadequate to account for the suboxide of copper being held in solution in connexion with the anomalous reaction obtained on testing urine containing slightly beyond the ordinary amount of sugar with Fehling's solution. At p. 158 he gives a table representing the effect of adding an increasing number of drops of an aqueous solution of ammonia consisting of 1 part of strong ammonia (0·880) in 10. It is stated that up to four drops no deviation is produced from the ordinary reaction observed on boiling one cubic centimetre of a 1 per 1000 dextrose solution with one cubic centimetre of Fehling's solution, and that with six drops the reaction is only delayed a few seconds. It may be said that with the ordinary mode of applying the test it is difficult, if not impossible, from the condensed granular form assumed by the precipitate to determine the exact moment at which the first sign of reaction presents itself where no ammonia is added, on account of the obscuring effect of the surplus blue-coloured, unreduced liquid existing. By heating over a flame also it must be considered impossible to get the equality with respect to temperature that is requisite for enabling a trustworthy conclusion to be drawn.

The difficulties here presented are to be met by employing a test solution with the copper element in it adjusted to the reducing power of the sugar solution and, for the application of heat, by immersion of the tubes in a boiling saturated solution of chloride of sodium, in which position they are in a state of equality and, placed side by side, are so circumstanced as to permit of the result being read off with precision. The cupric oxide in one cubic centimetre of Fehling's solution is reduced by five milligrammes of sugar. Ordinary Fehling's solution stands, therefore, as the corresponding equivalent of a 5 per 1000 solution of dextrose. To adjust the test to a 1 per 1000 solution all that is requisite is to dilute the copper half of it to the extent of 1 in 5. This gives a liquid which is brought to a colourless state on boiling with an equal volume of a 1 per 1000 solution of sugar. There is no change in the constitution of the test in any other respect than in the amount of its copper constituent. The adjustment to any other strength of sugar solution can be similarly made. For instance, for a 3 per 1000 solution three volumes of the copper half of the test should be diluted with two volumes of water.

Adopting the method of procedure that has been described, we are placed in a position to see with facility and exactitude the true nature of the result produced, and viewed in this way the table given by Dr. MacLean does not supply a correct representation. It is not correct to represent no effect as being producible by one to four drops of the dilute solution of ammonia. In reality, comparing the application of the test without the ammonia solution and with one drop of it, precipitation is noticed to occur in the former case just appreciably in advance of the other, and in proof of an effect being exerted it is observable that the precipitate is of a distinctly less red colour. After two drops there is a distinctly measurable interval which in the instance timed with the chronograph amounted to four seconds. After four drops the interval amounted to seven seconds. In the table given by Dr. MacLean it is made to appear that in all these instances precipitation occurs at the same time. After six drops of the ammonia solution the interval was observed to stand at 12 seconds; after eight drops, 15; after 12 drops, 20; after 16 drops, 38; and here complete decolouration, meaning complete reduction, took place before precipitation occurred.

Accompanying the delay of precipitation by the influence of ammonia the colour of the precipitate becomes progressively altered, passing more and more to pale yellow as the quantity of the agent is augmented. Hence, this affords a measure of effect produced and corroborates the other testimony in showing that the action of ammonia has been much under-rated.

Following the table referring to ammonia a table is given by Dr. MacLean showing the effect of boiling one up to four milligrammes of creatinine with one cubic centimetre of a 1 per 1000 dextrose solution and one cubic centimetre of Fehling's solution, and this is succeeded by experimental evidence pointing to inadequacy of the ammonia capable of being evolved from the creatinine to produce the inhibitory action that is being considered. Then it is remarked (p. 159) that "urea in the percentage in which it occurs in urine yields much more ammonia than the kreatinin of an equal amount of urine, and yet it possesses no apparent retarding effects; for a very dilute solution of dextrose (less than 0·01 per cent.) introduced into a 2·3 per cent. urea solution and mixed with equal parts of Fehling's solution gives quite a distinct reaction."

It is to be conceded that the amount of ammonia derivable from small quantities of creatinine is not sufficient alone to produce the inhibiting effect that occurs, but it is open to demonstration that when creatinine is associated with the ammonia generating product—urea, an effect is producible beyond that which is capable of being occasioned by creatinine alone.

Adopting the mode of experimenting that I have previously described it is in the first place susceptible of being shown that urea alone possesses a certain amount of inhibiting influence. On heating in the boiling saline solution one cubic centimetre of a 1 per 1000 solution of sugar and one cubic centimetre of adjusted Fehling's solution by the side of a similar admixture containing in addition two drops of a 40 per cent. solution of urea, one drop of which gives to the one cubic centimetre of the sugar solution a proportion of urea equivalent to that existing in normal urine, it is seen that the reaction in the two tubes starts practically simultaneously. With the addition of four drops of the urea solution, however, the reaction occurs decidedly in arrear of the other and with eight drops an interval of from 20 to 25 seconds has been timed between them.

Associated with a minimum quantity of creatinine a small quantity of urea greatly enhances its effect. If two tubes are taken, one containing one cubic centimetre of a 1 per 1000 dextrose solution and one cubic centimetre of adjusted Fehling's solution with 0·5 milligramme of creatinine and the other a corresponding admixture with the addition of two drops of the urea solution, the reaction in the case of the latter has been noticed to be inhibited for a period of 35 seconds. Urea, then, from which ammonia is generated on being boiled with Fehling's solution, can be demonstrated to add to the effect of creatinine in inhibiting the reaction produced by sugar. A minimum quantity of creatinine was purposely taken so that the result might not be obscured by the action of the urea being overpowered. Through the experiment the existence of the underlying operative capacity is brought into view.

The action of creatinine in the direction of interfering with coalescence is an exceedingly powerful one, so much so that quite a small amount of it is sufficient to influence a very large amount of suboxide. There may be no delay of precipitation observable, but the colour and microscopic appearance of the precipitate show that coalescence has been interfered with. By observation, for instance, it is to be seen that one-twentieth of a milligramme of creatinine added to one cubic centimetre of a 5 per 1000 solution of dextrose is capable of altering the character of the precipitate produced on boiling with one cubic centimetre of Fehling's solution. No effect in delaying precipitation is to be perceived but a precipitate of a more yellow colour than normal falls, and it is seen on microscopic examination to consist of finer particles. Thus, upon the strength of these premisses it has to be stated that one milligramme of creatinine has the power of modifying the character of about 200 milligrammes of suboxide precipitate.

It cannot fail to have been recognised that in connexion with the anomalous reaction we have a complicated set of phenomena to deal with and what I have now to mention adds to the complication existing. Out of keeping with what might be expected, it is found that ammonia in small amount reverses or inhibits the action of creatinine. To show this it is convenient to work with one milligramme of creatinine and a 1 in 10 solution of ammonia. Adopting this plan the following are the results that were obtained in a set of observations that I will refer to. With one cubic centimetre of a 1 per 1000 solution of dextrose, one cubic centimetre of Fehling's solution, one milligramme of creatinine, and ten drops of the 1 in 10 solution of ammonia heated in the saline bath by the side of its counterpart containing ten drops of water in place of the ammonia, decolourisation was in each case noticed to occur to a like extent, and then after the lapse of some time signs of precipitation were perceived in the tube containing the ammonia 35 seconds before they became perceptible in the other. In a similarly conducted observation with 15 drops of the ammonia solution precipitation occurred simultaneously in the two tubes. With 20 drops of the ammonia solution a reversal of action was observed, precipitation occurring in the tube without the ammonia 55 seconds before it occurred in the tube with it. As regards the exact number of intervening seconds, there may be a slight variation noticeable in different observations, which may be possibly attributable to a slight variation of temperature of the saline bath, but the results always followed the same order. If a little paraffin is placed over the liquid in the test tube to prevent reoxidation during the heating the results come out with greater sharpness.

---

[3] Zeitschrift für Analytische Chemie, Band xvii., 1878, p. 134.
[4] Loc. cit.

By decreasing the amount of ammonia to one or two drops its effect is nullified. Increasing it from this stage up to a certain point is attended with an increasing neutralising effect on the action exerted by the creatinine. When the point in question is reached the further addition of ammonia operates in the opposite direction and adds to the effect produced by the creatinine.

Such are the facts connected with the phenomenon under consideration and I read their interpretation in this way. The creatinine inhibits coalescence and the greater the action occurring the longer the delay of precipitation and the finer the precipitate when it appears. Ammonia also inhibits coalescence and the effect naturally to be looked for from its conjoint action with creatinine should be, as in the case of association with albumin, an augmented result. Up to a certain limited point the reverse is what happens. A less effective inhibition occurs in the presence of ammonia up to the limited point referred to than in its absence, but when the point is passed the effect of the creatinine is added to by that of the ammonia. It seems therefore, in connexion with the phenomenon, as if the ammonia exerted an inhibiting influence on the inhibiting action of creatinine upon coalescence.

Leaving this matter, I will proceed a step deeper into the question and view it in relation to that of the mechanism of solvent action. By observation it is open to being seen by the eye that the inhibition of coalescence of the suboxide may be carried to the production of particles barely visible under the microscope. In this state the liquid is slightly opalescent and of a yellow tint. If the inhibition can be carried thus far, why may it not be susceptible of being carried further? If thus carried further, what, it may be asked, will constitute the condition presented? To this I would reply that there is nothing against its leading on to resultant solution, or to the production of a clear watery liquid containing the suboxide, perhaps in a free molecular, but at all events in an invisible, state.

In the case of ordinary solvent action we start with a something presenting itself in tangible form owing to its being under the influence of self-coalescence. When this something is placed in a solvent medium the solvent dissolves it and in doing so deprives it of visibility. The attraction power existing between the elementary constituents of the solvent medium and the substance particles is greater than that which previously held the latter together. As a result the substance particles are drawn asunder and incorporated with the solvent. But self-coalescence may again be made to occur. The issue depends upon which side the greater power exists. In the case of the suboxide of copper in relation to the question, if the normal self-coalescing or agglutinating power is allowed to have unimpeded play at the time of its formation it settles out in its characteristic normal form. If, on the other hand, the self-coalescing power is inhibited by an opposing power the issue occurring will depend on the relative strength of the respective opposing powers in operation.

I have spoken in a former part of this communication of two factors being concerned in the production of the anomalous reaction, one an influence interfering with coalescence of the newly formed suboxide and the other an agency for holding it in solution. They apply to the two kinds of physical condition observed. Under the proposition that has been just set forth these two factors merge into one, solution being representative of the final stage of the inhibition of coalescence.

*(To be concluded.)*

# IODINE AS AN ANTIDOTE IN CARBOLIC ACID POISONING.

BY JOHN MABERLY, M.R.C.S. ENG., L.R.C P. LOND.

DURING the last few years fatal cases of carbolic acid poisoning, both accidental and suicidal, have been steadily on the increase, due no doubt to the general knowledge and use of antiseptics. According to Allbutt, carbolic acid stands sixth on the list for frequency of fatal cases of poisoning, and there are probably few general practitioners of experience who have not been called upon at some time or other to attend cases. It is therefore very desirable that any possible improvement in treatment should be recorded, and it is on these grounds that I venture to bring before the profession a line of treatment entirely new but which is, so far as my experience goes, eminently satisfactory—viz., that of the administration of iodine in solution. I believe, in fact, that I have strong grounds for concluding that iodine is the true antidote for carbolic acid poisoning.

Up to the present the administration of solutions of the alkaline sulphates, originally introduced by Bauman and Heuter, appears as the most satisfactory line of treatment: the suggestion is that sulpho carbolates are formed and the carbolic acid neutralised. Washing out the stomach with a soft rubber tube with solutions of alkaline or soluble sulphates or with pure glycerine as suggested by Whitla, and the administration of oils, egg albumin, and warm demulcent drinks are the recognised lines of treatment, of which, however, I have had no experience.

The first hint that I received as to the action of a solution of iodine on carbolic acid was from the late Mr. George Lawson at the Middlesex Hospital. In the then early days of antiseptic surgery the peculiar numbness and bleaching of the skin of the hands produced by saturating them in carbolic acid solutions was the common experience of all surgeons and hospital dressers, and it was when acting in the latter capacity that Mr. Lawson demonstrated to myself and fellow dressers the beneficial results produced by rinsing the hands so affected in a basin of warm water to which tincture of iodine had been added. The effect is almost immediately to remove the numbed feeling as well as the bleached crinkled condition of the skin; the iodine solution at the same time parts with some of its colour. It was this effect as an external antidote that induced me to try the effect of the drug internally on the first case of carbolic acid poisoning that came under my notice, and its beneficial action in that case encouraged me to carry out a similar line of treatment in the two other successful cases recorded below.

CASE 1.—One evening during 1895, in Bulawayo, a transport rider came in and requested me to go with him at once to attend a coloured "boy" at his wagon who had taken a draught from a bottle of crude carbolic acid in mistake for his master's whisky. Before saddling up I armed myself with a bottle of tincture of iodine, and on arriving at the wagon after a 20 minutes' ride found the patient sitting by the camp fire in great distress, frothing at the mouth, the lips, tongue, and fauces whitened from the effects of carbolic acid, his speech almost inaudible and his breathing difficult on account of the condition of the larynx; he was endeavouring to drink a cup of milk, but was, however, unable to swallow it. I poured about a small teaspoonful of tincture of iodine into a cup of water and told the patient to drink it slowly. This he did without the slightest difficulty and rapidly began to feel easier. Shortly afterwards he drank the milk, which previously he had been unable to swallow, his voice and breathing improved, and the symptoms of distress gradually disappeared. Before leaving I gave him some more solution of tincture of iodine with instructions to drink it slowly at intervals during the night. The next morning the transport rider came in and told me that the patient was quite comfortable, and that afternoon he was able to continue the journey with his master, consequently I saw nothing further of him.

CASE 2.—The patient was a child, living in Woodstock, Cape Colony, aged three years, who had drunk some Jeyes' fluid which had been obtained from an uncorked tin. I saw the child about half an hour after the occurrence who was then suffering from the usual effects of carbolic acid poisoning about the mouth and fauces. The breathing was accompanied by a rattling sound in the larynx and the patient was in evident distress. I administered five drops of tincture of iodine in a teaspoonful of water, which when swallowed gave immediate relief. Shortly afterwards I repeated the dose and gave instructions before leaving for two more doses to be given at intervals of four hours. On the next day the patient appeared to be in a normal condition except that the voice was still slightly hoarse. In this case probably very little of the Jeyes' fluid had reached the stomach.

Case 3.—The patient, a child, aged two years, had swallowed some Jeyes' fluid from a bottle which he had found on the floor and he was discovered by his parents almost immediately afterwards. The nearest medical practitioner was called in and he attended to the patient for the first 30 hours but as the parents were old patients of mine he kindly, at their special request, handed the case over to me, as they were unable to pay consultation fees. The condition of the patient when I first saw him on May 20th, 1907, was as follows. He was lying in bed extremely ill. The respirations were 80 and were accompanied by a rattling sound in the larynx. He was unable to make a sound above a whisper. The tongue and fauces were bleached, the pulse was 140, and the temperature was 104° F. The abdomen was generally distended and tympanitic. The bowels had been opened twice during the last six hours, the motions being very dark in colour and loose. Urine could not be obtained. The treatment had been the administration of egg albumin, followed by oil and an alkaline mixture. I ordered five minim doses of tincture of iodine in a teaspoonful of water to be given every four hours, and administered the first dose myself. On the 21st the patient had passed a fairly good night and he looked easier. The temperature was 101·6°, the pulse was 140, and the respirations were 75. The abdomen was less distended and did not appear painful on pressure. The bowels had been opened twice, the first motion being rather dark and loose, with some mucus, while the second motion had been normal in colour, semi-solid, and free from mucus. The iodine solution was continued every six hours, and a mixture containing four minims of tincture of digitalis, ten minims of spirit of chloroform, 16 minims of syrup of orange peel, with water to one drachm was given every four hours as a heart and lung tonic. On the 22nd the child was much better. The temperature was 99°, the pulse was 85, and the respirations were 40. The bowels were not opened on this day. The patient had slept well and had taken liquid nourishment, mostly milk, freely. The abdomen was soft but was still slightly distended. The child took one more dose of tincture of iodine and refused all further medicine, except one grain of calomel. On the 23rd the patient was sleeping comfortably when I called and appeared to be in a normal state. The bowels had been open once normally and as fees were a consideration the mother told me that she would let me know if any untoward symptoms occurred. I looked in a week later and found the child running about in his usual health, with the exception that the throat was slightly sore and the voice was somewhat hoarse.

The first two cases recorded above demonstrate the value of iodine for the ill-effects of carbolic acid on the mouth and throat, when administered soon after the poison has been swallowed and before any symptoms which can be distinctly traced to its effects on the stomach and intestines have had time to develop. The third case is very interesting, as in this we have all the general toxic effects of the poison fully developed, as well as distinct signs, in the tympanitic abdomen and the dark and slimy stools, of the poison having reached the stomach and intestines and set up changes there. The administration of iodine can, I think, in this case be safely credited with the happy result obtained, and I submit that I am justified in recording it in that light. Further records are, however, very desirable and it is to be hoped that in future they will be forthcoming.

The chemical reaction between iodine and carbolic acid is very easily demonstrated. If a solution of carbolic acid be added gradually to a solution of iodine in a test tube and a gentle heat be applied, the latter solution at a certain point becomes completely decolourised, and if tested by means of a starch solution for iodine it will no longer give the blue colour reaction, showing that the iodine has gone into actual chemical combination with the phenol—a phenol iodide is evidently formed. The effect on the skin or tongue can be easily tested by placing a little strong solution of carbolic acid on either, and as soon as the typical effects are experienced neutralising it with a solution of iodine. The effect will be almost immediate as regards sensation.

The neutralising power of iodine compared with that of the alkaline sulphates on the skin or mucous membrane may be tested in the same way. The results of the application of iodine will be found to be much more effectual and permanent than those of the alkaline sulphates.

The chemical compound formed as a result of the reaction between iodine and phenol is apparently harmless, if one may judge by the experience of its effects in the three cases recorded, and it should consequently have an advantage over that formed by the reaction between phenol and the alkaline sulphates—viz., the sulpho carbolates—seeing that the latter salts are not entirely free from deleterious results. The fact that the iodine in tincture of iodine is mostly in a free state gives it a great advantage over other bodies which have to undergo more complicated changes in their chemical reaction with phenol.

The pharmacopœial doses of tincture of iodine are given at from two to five minims, but other works place them at from five to 20 minims; it would, however, be necessary to increase the dose considerably when using it as an antidote in carbolic acid poisoning, varying it according to the amount of poison that had been absorbed, possibly up to drachm doses and more in severe cases. In test-tube reactions one minim of liquid carbolic acid, B.P., neutralises about one minim of tincture of iodine, with the application of gentle heat, but continued heating will cause a still further quantity of iodine to become decolourised; apparently at the higher temperature a larger amount of iodine goes into combination with the phenol. The question as to what is the exact proportion of iodine necessary to neutralise a given amount of phenol in the body is a difficult one to answer, but probably for practical purposes we may take it that equal quantities of tincture of iodine and phenol are complemental.

Darenth-road, N.

# NOTES OF A CASE OF ADDISON'S DISEASE IN A NEGRESS.

By R. SEHEULT, M.D., C.M. Edin,
RESIDENT SURGEON, SAN FERNANDO HOSPITAL, TRINIDAD.

The rarity of Addison's disease, especially in the dark-skinned races, has induced me to publish the notes of the following case.

The patient, a negress, aged 55 years, was admitted to the San Fernando Hospital on March 19th, 1906, with a history of progressive debility, occasional attacks of vomiting and diarrhœa, and intense black pigmentation of the hands and face for six months. Two of the hospital nurses who had known her for years were attracted by the change in the colour of her face and hands and were able to confirm her statement with regard to the abnormal pigmentation complained of. On admission she was found to be fairly nourished, slightly anæmic, and in a state of great prostration. Owing to extreme weakness she was compelled to remain in the recumbent position in bed. She complained of pain in the small of the back and in the abdomen. The face and backs of the hands and fingers were intensely black—much blacker in hue than other parts of the body. The palms of the hands were also abnormally pigmented but to a lesser degree than the face. There were numerous irregularly defined areas of pigmentation on the mucous membrane of the cheek, gums, and tongue. Her pulse was frequent, small, and regular. Examination of the heart and lungs disclosed nothing abnormal except an occasional systolic murmur at the apex which was hæmic in character. The urine contained a trace of albumin. Nothing of note was detected on examination of the abdomen. Her temperature was normal. On the following day she became collapsed, passed into a semi-comatose condition, and died somewhat suddenly.

At the necropsy the heart was flabby; it showed no sign of endocarditis. The lungs were apparently healthy. The liver and spleen presented nothing abnormal to the naked eye but their capsules were much thickened and adherent to the parietal peritoneum. The capsules of the kidneys were slightly adherent and the cortex was moderately enlarged. The intestines showed nothing abnormal; a few round worms were found in the small intestine. The uterus was atrophied and bound down by dense peritoneal adhesions. The vagina showed evidence of chronic inflammation of its mucous membrane and presented patches of pigmentation similar in character to those present in the mouth. On the vulva were a few small leucodermic areas. Both suprarenals were enlarged and exhibited caseous masses in their substance apparently affecting the cortex. Their capsules were much thickened and adherent to the surrounding parts. These bodies and portions of pigmented mucous membrane and skin were submitted for microscopic examination to Dr. J. R. Dickson, the pathologist to the hospital, who reported as follows:—"A. Suprarenals: (1) normal suprarenal tissue towards the medulla; and (2) caseating masses, at the margin of which were giant cells, in the cortex. The condition was tubercular with marked tendency to caseation. B. Skin and mucous membrane: showed marked pigmentation of the basal cylindrical cells. Below this layer in the cutis were scattered branching pigmented cells, which appeared to be invading the epidermis." The fibro-caseous changes in the suprarenals in association with the clinical features of the case seem to leave no doubt as to the correctness of the diagnosis.

As far as I know, only one case of this disease has been reported in this colony. The notes of the case were recorded by Dr. Beaven Rake in THE LANCET[1] and also in his annual report on the Trinidad Leper Asylum for the year 1889.

Trinidad.

# NOTE ON A CASE OF TUBERCULOUS CEREBRO-SPINAL MENINGITIS.

BY STANLEY HODGSON, M.D., B.S. LOND.,
M.R.C.S. ENG., L.R.C.P. LOND.,
HONORARY PHYSICIAN TO THE PENDLETON BRANCH OF THE SALFORD ROYAL HOSPITAL.

THE interest in the following case lies chiefly in the anomalous symptoms and course of the disease.

The patient, a girl, aged three years, was said to have been entirely free from the usual childish complaints. She was bright and rather precocious. Her parents were both healthy and she had a good family history so far as I could ascertain it. I first saw her on July 4th. She had been ailing then, according to her mother, for about a fortnight. The illness was an indefinite "out-of-sorts," and at the hospital where the child had been taken the opinion had been given after a careful examination that nothing was the matter. Certainly, on July 4th, the only evidence of illness was a temperature of 100° F. and some constipation. During that night the child screamed with abdominal pain, which was relieved by hot applications and the exhibition of castor-oil.

A careful examination of the abdomen and thorax revealed nothing abnormal. The next day the condition was the same. The child was a little irritable and cried out if touched. She would lie contentedly if nursed by the mother. In the evening another attack of abdominal pain occurred which was again relieved by the hot poultice and castor-oil. On the next day the child seemed a little better and was not so fretful. She took milk well but was apathetic and did not speak. Tache cérébrale was present and the left knee-jerk was somewhat exaggerated. The left arm was frequently thrown above the head. The pulse was 90 and the temperature was 100°. On the 7th the child was drowsy but was free from all pain. The friends thought that she was much better as she had passed a good night. Her temperature and pulse did not vary. The difference in the knee-jerks was still noticeable and in addition there was slight but definite resistance on extending the leg with the thigh semi-flexed (Kernig). The pupils were about three millimetres in diameter. On the next day the child became unable to swallow—that is to say, the presence of milk in the mouth did not evoke the swallowing reflex. Two hours after this was noticed, at about noon, she had a fit in which there was marked opisthotonos and movements of the arms and legs simulating tetany. The duration of the fit was not more than 30 seconds and the convulsive movements continued every hour, diminishing in force until they ceased on the 10th. There was no rigidity of the neck muscles. This sign was first seen on the 9th and was very slight. The breathing, too, assumed a Cheyne-Stokes character with a very short period. The pulse was of good volume, regular, and 100 per minute. The temperature in the evening rose to 102°. The general aspect of the child was that of a healthy baby quietly asleep. On the 10th the condition was much the same with these exceptions. The knee-jerk was absent on the left side and very faint on the right. The pupils were fixed at three millimetres and did not react to light even when illuminated by the ophthalmoscope. The temperature was 104° in the morning and 105° at night. The bowels were kept open by enemata and the child was given nutrient injections which were not retained for more than an hour. Perspiration was very profuse and micturition scanty. Retraction of the head was evident, Kernig's sign was well marked, and coma was complete. The breathing now resumed its normal character with a frequency of 40. The pulse-rate steadily increased. On the 11th, with Dr. J. J. Butterworth, the assistant medical officer of health of Salford, lumbar puncture was performed and a non-purulent, blood-stained fluid was drawn off and reserved for bacteriological examination. Dr. Butterworth also examined the discs which presented nothing unusual. On that night the temperature (axilla) reached 107° and the pulse 170, and at 1.30 A.M. on the 12th the child died. The bacteriological report was as follows: "A portion of the fluid was centrifugalised and search was made for the diplococcus intracellularis but none was found. Films stained Ziehl Neelsen showed the presence of tubercle bacilli in extremely small numbers."

No post-mortem examination was allowed. There was no obvious tuberculous focus, though the preceding abdominal condition, and the fact that the child had a habit of picking up and eating rubbish from the streets, point somewhat to the abdomen as a prime source.

Salford.

# Reviews and Notices of Books.

*Indications for Operation in Disease of the Internal Organs.* By Professor HERMANN SCHLESINGER, M.D., Extraordinary Professor of Medicine in the University of Vienna. Authorised English translation by KEITH W. MONSARRAT, M.B. Edin., F.R.C.S. Edin., Surgeon to the Northern Hospital, Liverpool. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1906. Pp. 498. Price 9*s.* 6*d.* net.

WITH the many advances made in operative procedures and in surgical technique not a few diseases and morbid conditions formerly entirely within the province of the physician have within recent years come more and more into the surgeon's hands for operative treatment directed towards radical cure of the condition, where that is practicable, or for palliative measures, or as a last resort where medicinal treatment has failed. There has thus arisen a common ground in regard to these conditions, a jointly occupied territory as it were, in connexion with which problems may arise requiring great care, judgment, and experience for their decision in respect of the choice of medical or surgical treatment, necessitating an experience, too, of the results of both. In Germany the importance of these considerations has been recognised by the establishment of a journal devoted to the discussion of matters affecting the boundary regions between medicine and surgery. In this country, although the importance of this subject is recognised, the literature is very scattered.

Professor Hermann Schlesinger of Vienna has published his book primarily as a guide to the general practitioner in determining the advisability or otherwise of surgical intervention. In his preface he suggests that there should be some advantage in a discussion of the question of surgical intervention in cases of medical character by a physician who is in full sympathy with the standpoint of the surgeon. In this view we concur and Professor Schlesinger's book is of considerable value from this very fact. A further excellent feature is that in connexion with each condition discussed there is also added a paragraph outlining what usually happens in that condition if operative treatment is not carried out.

---

[1] THE LANCET, August 3rd, 1889, p. 214.

The work is obviously based upon a large experience and, where possible, statistics are given of the results of various forms of treatment recommended. On the whole, however, we must confess to being somewhat disappointed with the general plan of the book and the indications given. In each chapter some remarks are included on the etiology, pathological anatomy, clinical course, diagnosis, and differential diagnosis of the condition under consideration. These, Professor Schlesinger informs us, are included on the advice of colleagues whom he has consulted and are admittedly subordinate to the main purpose which he has in view—viz., to assist in arriving at a decision as to the advisability of operation in regard to a given case of a particular condition. To us they appear to serve little, if any, useful purpose. They are of necessity brief, incomplete, and often tedious from their very baldness. The object in view was in no sense to assist in the diagnosis of the condition but to arrive at a decision in regard to special forms of treatment. The space thus wasted might with advantage have been devoted to a more critical discussion of the specific indications for operative treatment, which are often stated in a few lines and in general terms. The conditions contra-indicating operation in regard to each disease are given in a separate paragraph and are usually explicit and should be useful.

The best sections of the book seem to be those devoted to diseases of the stomach and intestines, in which the results of recent work are incorporated and valuable information in regard to the choice of suitable cases of gastric ulcer and carcinoma for operative treatment is given. Useful appendices on Indications for the Induction of Premature Labour, on Operations on Diabetics, and on the General Influence of Operations on the Body, the last by Dr. Julius Schnitzler, are added at the end of the book. In the case of each disease or condition discussed a brief list of important papers dealing with the subject is appended, though the author explains, to avoid misconception, that these are given only with the object of assisting the reader to refer to special works and not as a complete bibliography. The translation gives the impression of being too literal; at any rate, the English is cast in a distinctly German mould.

---

*Elements of Human Physiology.* By E. H. STARLING, M.D. Lond., F.R.S., Jodrell Professor of Physiology, University College, London. Eighth edition. London: J. and A. Churchill. 1907. Pp. 716. Price 12*s.* 6*d.* net.

WHEN a text-book has reached its eighth edition there is little to be said either in the way of praise or criticism. The work under review is an admirable, compact, all-round exposition of the main facts and theories of physiology. Nearly 200 pages are devoted to what may be called general physiology, including a short account of the material basis of the body, the blood, and the contractile and conducting nerve structures. The author has adopted the term protein and the new term of E. Fischer, polypeptides, which includes such bodies as leucyl-tyrosine and its allies. In the matter of size and microscopic measurements we do not find such given in terms of $\mu$ but rather in parts of an inch—e.g., red human blood corpuscles as about $\frac{1}{3200}$ of an inch in diameter, the colourless $\frac{1}{2500}$ of an inch, and so on. These latter are spoken of as "probably" reproducing themselves by fission. Little is said about the blood platelets. Perhaps more should have been said on the estimation of hæmoglobin and the same might be said as to specific gravity (p. 84), and no indication of the size of fibrin fibres is given (p. 75). Nor is there any indication given of the size of muscle and nerve fibres, although there are diagrams of both without the magnifying power being given. In fact, in many of the histological diagrams the magnifying power is not stated. It would be convenient to do so in future editions. The "muscle press" is mentioned but it should be associated with the name of Kühne (p. 154). One of the most interesting facts about smooth muscle is its susceptibility to changes of temperature—as a rule, warming causes relaxation and cold a tonic contraction. It seems very doubtful whether any true rigor mortis occurs in smooth muscle. There is a short account of double innervation of smooth muscle as illustrated by the retracted penis.

The rest of the work deals with the special physiology of the various organs. In every case the subject matter is terse, concise, and to the point. We rather think that the hæmodromometer was invented by Volkmann and not by Volckmann (p. 203). The term antipeptone we hope will soon disappear, for it is not a definite compound but a mixture of bodies. The modern view as to the results of the energetic action of trypsin in pancreatic digestion working with the succus entericus is set forth; a thorough disintegration seems to be a necessary preliminary to the assimilation of any foreign form of proteid. No material changes have been made in the chapters on Digestion, Respiration, Excretion, and Metabolism. In the chapter on the Brain reference is made to the recent investigations of Campbell and Sherrington.

The work is a safe guide for the student and a good foundation on which to raise the superstructure obtainable from the study of more elaborate text-books.

---

*The Licensed Trade: An Independent Survey.* By EDWIN A. PRATT. London: John Murray. 1907. Pp. 329. Price 5*s.*

THERE is no social question which calls more for calm, dispassionate judgment than that of the drink problem and there are few subjects of discussion which seem to invite so much vituperation at the hands of extremists as does this one. Mr. Pratt started life with a sort of conviction that the teetotaler's views were correct. He had passively adopted, and had acted on, teetotal opinions since the days of his youth and had assumed that the aspersions of the teetotal faction in regard to the methods of the makers and dispensers of alcoholic drinks were true. He decided, however, to examine the question *de novo*, with the result that he found that his views were not entirely free from prejudice and were not in accordance with a full presentation of facts and he arrived at the conclusion that many of the statements advanced by the total abstainers were based "largely on exaggeration, misconceptions, and, indeed, conditions altogether incapable of attainment." His attitude, in short, became reversed in the light of the admirable principle, *Audi alteram partem.*

In this book he has, so to speak, compiled parallel columns and the net result of their inspection and consideration would appear to be a defence of "the trade" and its methods. With his definition of the word temperance as in reality a synonym for moderation few but mistaken zealots can quarrel, nor would any level-headed person discourage his desire to see all people temperate and sober, or dispute his view that freedom and justice are greater than even temperance and sobriety. When, however, we are told in regard to the administration of the liquor traffic that many of the attempted reforms of the licensing system might do far more harm than good we are at once on highly debateable ground. We are bound to recognise that with the human dispensation as it is the traffic in liquors is a *sine quâ non*, that alcoholic drinks would appear to supply a human need, but with all that we must admit that it is a dangerous traffic beset with multiple pitfalls for many and therefore a traffic which might be submitted, if possible, to unirritating restrictions calculated to save the easily tempted from a fall. Herein lies the whole difficulty. If all men were equally endowed in regard to their power of resisting evil and realised where use ceased and abuse began and acted accordingly the question of legislative control would hardly concern us. One thing is certain, however; the human being will never be made a total abstainer by Act of Parliament. On the other hand, any movement that seeks to disseminate the spirit of temperance will do far more to secure the "godly, righteous, and sober life" than the putting forward of extreme propaganda.

We believe with Mr. Pratt that nobody better than the trade itself recognises this and it is gratifying to learn that at least a large section of the trade desires to see a temperate people as much as does any well-intentioned reformer. It was not more than a score or so years ago when it is to be feared the only idea of most merchants was to sell as much alcoholic liquor—good, bad, or indifferent—as they could to accumulate profits rapidly without any regard to the moral effects on the consumer. "My business," a dealer would say, "is to sell and not to lay down what is, or what is not, good for my customer." All the public need ask at the hands of the trade is that it should be honestly dealt with. Recent years have witnessed fresh attempts to supply some substitute to the consumer instead of the genuine article. We are told, for example, that invert sugar is as good as malt and makes a lighter and more palatable beer. Then why not tell the public so if it appreciates the change? Mr. Pratt defends the use of beer of light alcoholic strength which he says only the introduction of modern methods involving the use, *inter alia*, of invert sugar has enabled the trade to supply. On the other hand, he says in another place that our forefathers "bequeathed us not only bodies that are none the worse, physically, because they themselves loved strong ale, but a freedom which we shall either curtail or abuse if we say that because a small proportion of the community suffer from the effects of an undue consumption of alcoholic drinks, therefore the rest of the nation shall be compelled to abstain therefrom." Now our forefathers drank beer which answered to the simple formula of malt, yeast, hops, and water, while their descendants are told that malt substitutes are better for them. We know, of course, that some years ago the use of malt substitutes cost the nation a serious epidemic of arsenical poisoning and not a few lives. We are told again that whisky is better for the consumer if it is not made from barley malt and that it is immaterial whether brandy be distilled from wine or other materials, when it is patent to everybody that the introduction of substitutes simply means, as a rule, a cheaper product and a wider margin of profit.

We think that Mr. Pratt's attack on temperance drinks in Chapter XVI. is a tactical blunder. The manufacturer of temperance drinks, such as soda water, ginger-beer, and lemonade, like the brewer, the distiller, and the wine-grower, has his temptations, but we venture to say that in this country, at any rate, the supply of non-alcoholic beverages is, on the whole, very satisfactory. As to the fact that some temperance beverages contain a little alcohol which is generally much less than 1 per cent. by weight we scarcely think that they can be regarded as in any sense intoxicating. Mr. Pratt also quotes medical authorities on the injury to health that may arise from the drinking of tea and coffee. This is all a feeble *tu quoque* and serves no good purpose. The question of abuse applies just as much to so-called temperance beverages as it does to alcoholic liquors. We should like to know Mr. Pratt's authority for stating the following on p. 238: "*Just as in the human system Nature manufactures sufficient alcohol to preserve from acidity the food taken into the stomach* (and to this cause is due the fact that abstainers seem to demand, or are more partial to, sugar and sweets than are people who drink) so in like manner Nature produces her own alcohol in the product called beer to act as a preservative." The words in italics (which are ours) surely express a complete physiological chimera.

We must admit, however, with these exceptions that Mr. Pratt has presented a very fair and temperate view of the question. With much he has written we entirely agree. He deplores drunkenness, so do we; he advocates honest dealing, so do we; he enjoins an unprejudiced view of the situation, so do we; and he appeals against the introduction of any ill-considered legislation which is likely to smash a great industry which moreover contributes greatly to the revenue of the country, so also do we as long as that industry conducts its business on lines which promote temperance and which protect its *clientèle* against sophistication and fraud.

---

*Marriage and Disease*, being an abridged edition of *Health and Disease in Relation to Marriage and the Married State.* Edited by Professor H. SENATOR and Dr. S. KAMINER. Translated from the German by J. DULBERG, M.D. Würzburg. London: Rebman, Limited. 1907. Pp. 452. Price 10*s.* 6*d.* net.

THE progress of sociological investigation in modern times has caused increased attention to be paid to questions of health in relation to marriage and the propagation of the human race, and anything which helps to spread abroad an intelligent appreciation of the dangers incurred, not only by individuals who enter on the married state but also by their offspring, from the existence of many forms of disease, must be regarded as a public benefit. The present book is an attempt to make available for general consumption the gist of the larger work from which it is taken. Details of cases and some matter not suitable for the general reader are omitted but the plan of the work is the same and most of the articles appear to be little altered. After an introduction by Professor Senator we find articles by Professor M. Gruber on the Hygienic Significance of Marriage; by Professor J. Orth on Consanguineous Marriages; by Dr. W. Havelburg on Climate, Race, and Nationality; by Professor P. Fürbringer on the Sexual Hygiene of Married Life; and by Professor R. Kossmann on Menstruation, Pregnancy, and Lactation in relation to this state. Chapters follow dealing *seriatim* with diseases of the various bodily systems as they affect married persons and their offspring; among these Professor A. Neisser deals with gonorrhœal affections and Dr. R. Ledermann with syphilis. Professor C. Posner writes on disorders of the lower uro-genital organs and impotence, and Dr. L. Blumreich on diseases peculiar to women, including sterility. Insanity in relation to marriage is intrusted to Professor E. Mendel and the subject of perverted sexual sensations to Dr. Albert Moll. Drug habits and occupational diseases are dealt with by Messrs. A. and F. Leppmann and medico-professional secrecy by Dr. S. Placzek.

The material contained in the book is most valuable and a study of it should be useful to those capable of appreciating it. We doubt, however, whether the book is adapted to appeal to a wide circle of readers. It is a volume of considerable size and costs half a guinea net. It contains a large proportion of matter which is "caviare to the general," such as tables of statistics and a consideration of a number of diseases which can only be recognised by a medical man and about which, therefore, the patient will have to seek medical advice. It might then be safely left to the medical profession to give advice on such matters. We should have preferred for popular use a smaller volume containing information in a much more condensed form. The diseases which are of special importance in relation to the married state could then have been dealt with as here—for we have nothing but praise for their presentment—while the price of the book could have been so far reduced as to make it more widely available, the perusal of its contents being at the same time a less formidable task upon which to embark. The translation is generally well done and the printing and get-up of the book are commendable.

## LIBRARY TABLE.

*Diseases of the Larynx.* By HAROLD S. BARWELL, M.B. Lond., F.R.C.S. Eng.; Surgeon for Diseases of the Throat, St. George's Hospital; Laryngologist, Mount Vernon Hospital for Diseases of the Chest; Consulting Surgeon for Throat and Ear Diseases, Cripples' Home for Girls; Consulting Laryngologist, National Association for the Establishment and Maintenance of Sanatoria for Workers. With 21 figures. London: Henry Frowde and Hodder and Stoughton. Pp. 266. Price 5*s.* net.—This little book has been specially written to supply the need of a small work on the larynx and deals briefly and clearly with all the various pathological conditions met with in the larynx. It is very well illustrated and contains besides a very good selection of prescriptions. As will be expected from Mr. Barwell's previous work the chapter on laryngeal tuberculosis is particularly good. It is inevitable that in so small a book a small amount of space only should be devoted to each subject, but taking it altogether we think that Mr. Barwell is to be congratulated on the way in which he has accomplished his task and that without doubt this volume will prove of more use to the student and general practitioner than the majority of the more pretentious works dealing with the same subject.

*The Refraction of the Eye: a Manual for Students.* By GUSTAVUS HARTRIDGE, F.R.C.S. Eng., Senior Surgeon to the Royal Westminster Ophthalmic Hospital; Ophthalmic Surgeon to the Westminster Hospital, &c. With 109 illustrations. Fourteenth edition. London: J. and A. Churchill. 1907. Pp. 273. Price 5*s.* net.—The success which has attended this book, measured by the sale of 28,000 copies since its production in 1884, is justified by its excellence. Though we are in favour of impressing upon the student that he is not qualified to order glasses for the correction of errors of refraction until he has devoted special time to this branch of ophthalmology and has already had large experience under expert supervision we are yet of the opinion that he should thoroughly master the principles, since they form the basis of a skilful use of the ophthalmoscope. If the average student's manual were less like a *précis* of the advanced text-book and more attention were paid to the elaboration of fundamental principles we think that this type of monograph would lose its *raison d'être*. In the meantime we commend this particular specimen of a too luxuriant class on account of its clearness, accuracy, and absence of individual foibles.

*Photoscopy (Skiascopy or Retinoscopy).* By MARK D. STEVENSON, M.D., Ophthalmic Surgeon to the Akron City Hospital, Ohio, &c. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 126. Price 5*s.* net.—The author of this book acknowledges in the preface his indebtedness to the works of Jackson and Thorington on the same subject. It is to be regretted that, having read these works, he did not appreciate the fact that his own book was redundant. He has added nothing of importance and, in our opinion, he has not succeeded so well in describing the test. It is possible that the expert ophthalmologist might meet with a few suggestive statements, but the book is obviously not written for him. The student will, we fear, be confused by the manner in which salient points are jumbled together with comparatively trivial details. From the first page throughout the book the term "anterior focal point of an eye" is wrongly defined and used in a misleading manner. The anterior focal point of the emmetropic or axially ametropic eye is a definite point situated about 13 millimetres in front of the cornea. The author's use of the term and the confusion which necessarily arises are well exemplified in the following short paragraph: "Our object in photoscopy is to locate the anterior focal point of an eye, or, in other words, the place where light rays reflected from the retina focus or cross. In myopia they focus without the aid of lenses, but in all other conditions lenses are required to obtain an anterior focal point. By the use of lenses the location of the anterior focal point can be changed." In myopia the anterior focal point is said to be "at once the far and (unless the eye accommodates) near point of the eye." These quotations will suffice to show that the author is not a very safe guide to the theory of retinoscopy. A chapter is devoted to the history and name of the test. Dr. Stevenson might have spared us another christening of this multinominate bantling.

*The Sigmoidoscope: A Clinical Handbook on the Examination of the Rectum and Pelvic Colon.* By P. LOCKHART MUMMERY, B.C. Cantab., F.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1906. Pp. 86. Price 5*s.* net.—This monograph belongs to the necessary class of such publications; it is a simple and lucid account of the electrically illuminated pneumatic sigmoidoscope, the method of its use, and the appearances which it makes visible. The instrument is of hardly less value than the cystoscope, and although, as Mr. Mummery writes, practical experience is a *sine quâ non* to its successful use, the book will afford a valuable preface to such practice. It would be of value if it only contained its healthy warnings against the abuse of the sigmoidoscope, the chief of which are the passage of the instrument by feeling instead of sight and the too liberal employment of the pneumatic inflator. After the description of the technique of the use of the sigmoidoscope and the appearance of the healthy bowel, the changes seen in cancer and the various inflammatory and ulcerative conditions of the rectum and pelvic colon are described and are illustrated by some useful plates. If in a subsequent edition these could be replaced by accurately coloured pictures we venture to think the value of an excellent monograph would be enhanced.

## JOURNALS AND MAGAZINES.

*Annals of Ophthalmology.* Edited by WILLIAM T. SHOEMAKER, M.D., and C. W. PARKER, M.D. Vol. XVI. No. 1. St. Louis, Mo., U.S.A.: Jones H. Parker. 1907. Price 18*s.*—The present number of this journal opens with an article under the name of Dr. A. Darier of Paris, which is entitled "Intravenous Injections." Dr. Darier claims for this mode of therapy freedom from pain, rapid, certain and exact action, and absence of local lesions and of late secondary effects. Cocaine should not be used. The solution he recommends for intravenous injection is hydrargyri cyanidum 0·33 gramme, sodii chloridum 0·08 gramme, sodii phosphas 0·07 gramme, and aqua destill. et steril. 100 cubic centimetres, of which two or three minims should be slowly injected into a vein at the bend of the elbow. 2. Dr. J. H. Woodward of New York writes upon the Ocular Complications of Mumps. The chief affections mentioned are optic neuritis and atrophy, iritis and iridocyclitis, affections of the annexes of the eye, neuro-muscular complications, and lesions of the fundus. In an appendix to this article is given a list of authors who have contributed important papers on this subject. 3. A Case of Bilateral Metastatic Ophthalmitis in Puerperal Pyæmia, followed by recovery, by G. E. de Schweinitz, M.D. 4. Fundus Lesions with Normal Vision, by J. F. Burkholder, M.D., of Chicago.

13 lithographic representations of the fundus accompany this article. 5. Some Unusual Ocular Manifestations of Gonorrhœa, by W. Campbell Posey, M.D., of Philadelphia. 6. A Report of Two Cases of Parinaud's Conjunctivitis, by Frederic Krauss of Philadelphia. 7. The Ocular Symptoms in a Case of Tumour of the Pituitary Body, by Howard F. Hansell, M.D., of Philadelphia. 8. Conjugate Palsy of the Upward and Downward Movements of the Eyes, by C. E. G. Shannon, M.D., of Philadelphia. 9. A Modified Paquelin Cautery for Ophthalmic Use, by Edward B. Coburn, M.D., New York. In addition, this number contains abstracts from English and continental journals.

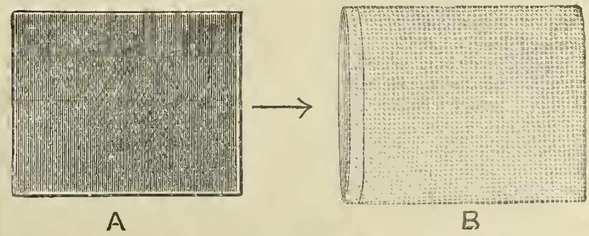
*Annals of Otology, Rhinology, and Laryngology*, March, 1907.—There are 19 original articles in this issue of a valuable periodical—the last, we may mention, to reach our hands despite the date which appears upon it. The most important article is by Zwaardemaker on the Determination of Aural Acuity by Means of the Whisper Test. It is a very interesting article but loses much of its value to the English-speaking aural surgeon owing to the fact that the tests are made out in French, German, and Dutch. Nevertheless, it is extremely valuable and it is to be hoped that it may lead to similar groups of words being evolved in the English language. Another article which must attract a certain amount of attention is by W. S. Anderson on the importance of correcting pathological conditions of the nose and throat in patients who have incipient tuberculosis. As this article deals with a contentious question, involving the whole principle as to whether it is advisable or not that operations should be performed which are not necessary for the life of the patient if the patient be suffering from tuberculosis, it requires more than the final paragraph, in which the writer states that "the value of these operations is not proven," to show that this is a correct decision in cases of this description.

*Annals of Tropical Medicine and Parasitology.* Vol. I., No. 2. Illustrated. Pp. 119. Price 7*s.* 6*d.* (Issued by the Liverpool School of Tropical Medicine.)—Two of the most interesting contributions contained in this number of the "Annals of Tropical Medicine and Parasitology" are on Trypanosome Transmission Experiments by the late J. Everett Dutton, M.B. Vict., J. L. Todd, B.A., M.D., C.M. McGill, and J. W. B. Hanington, M.D. McGill., and Concerning the Treatment of Experimental Trypanosomiasis, by Professor Benjamin Moore, M.A., D.Sc., M. Nierenstein, Ph.D., and J. L. Todd, B.A., M.D., C.M. McGill. The former contains the description of a number of experiments and observations which suggest very strongly that sleeping sickness must be conveyed in some other manner besides the bites of flies. The experiments showed that it is only with the greatest difficulty and in particular circumstances that infection can be brought about by the bites of infected tsetse flies. Furthermore, in places where sleeping sickness has in recent years spread very considerably, so that a large percentage of the population is infected, the tsetse fly is comparatively rare. From their experiments and observations the authors conclude: 1. Mammalian trypanosomes may be mechanically transmitted by the bites of blood-sucking arthropoda. 2. A cycle of development of the trypanosomes exists in which occur spherical parasites formed by the throwing off of blephoroplast, undulating membrane, and flagellum. These forms exist in both the vertebrate and invertebrate host; conjugation probably plays no part in the production of this form. A possibly distinct cycle is represented by the spherical parasites, consisting almost entirely of nucleus, which result from the disintegration of trypanosomes. 3. There is reason to suspect that a sexual cycle may also occur, it may be in either or in both hosts. 4. The rapid spread of sleeping sickness cannot be fully explained by (1) alone; the cycles of development mentioned in (2) and (3) probably play a very important part in the transmission of the disease. In the second article above referred to the results obtained in the treatment of trypanosomiasis in various animals are very remarkable. The treatment with atoxyl first suggested by Thomas and Breinl was used. This was followed by treatment with perchloride of mercury. Both drugs were given subcutaneously. The authors point out that the solution of atoxyl (5 per cent. in sterile water) deteriorated rapidly, particularly when exposed to light. The deteriorated solution is highly toxic in its effects. The experiments show that in rats infected with *Trypanosoma brucei* and treated with atoxyl alone, the trypanosomes, after disappearing from the peripheral circulation, reappeared in from 16 to 25 days. Of 113 rats treated, only three remained alive at the time the paper went to press. In 25 rats the perchloride of mercury was used after the trypanosomes had disappeared from the peripheral blood under the action of atoxyl. Of these 13 were still living (after from 56 to 181 days), while all the controls which received at the same time the same quantity of atoxyl alone were long since dead. In several cases, however, among the 25 the treatment was not commenced until the animals were almost moribund and so these might probably be neglected. Others, again, probably died from the effects of the drugs. These results are most encouraging and it seems eminently probable that when this treatment is used upon cases of sleeping sickness it will be found satisfactory. An automatic oiler for the destruction and prevention of mosquito larvæ in cesspools and other collections of water is described by E. H. Ross and H. C. Ross. The apparatus is of the simplest nature and could be made in any part of the world without difficulty. It saves a large amount of the waste necessarily involved by using paraffin in the ordinary manner, and as its action continues over many months it also saves a vast amount of labour. The cost of each oiler is about sixpence. A contribution on the Anatomy of the Proboscis of Biting Flies, Part II., Stomyxs (Stable Flies), by J. W. W. Stephens, M.D. Cantab., and R. Newstead, A.L.S., F.E.S., is of considerable interest. The accounts of the mouth parts of stomyx hitherto available have been incomplete and inaccurate, and now that it is known that parasitic infection is so often brought about by the bites of arthropods it is desirable that accurate accounts of their anatomy should be available. The value of the contribution is considerably enhanced by numerous admirable illustrations. Another contribution deals with Cattle Trypanosomiasis in the Congo Free State.

# New Inventions.

## AN IMPROVED LAPAROTOMY PAD.

THE accompanying illustration shows an improved form of pad which I have designed to take the place of the flat sponges used to prevent exposure of, or injury to, the abdominal viscera during laparotomy. It consists of a flat sheet of moderately thin rubber, A, inclosed in a bag, B, which is made of four layers of sterile gauze and left open at one end to allow of the introduction of the rubber sheet. During the



course of an operation if the pad becomes soiled it can be removed from the abdomen and the rubber sheet inserted in a fresh sterilised covering, a number of which are kept ready at hand. In suturing the abdominal wall it very effectually protects the intestine and omentum from becoming caught in the sutures and can, owing to its elasticity, be easily removed through as small an opening as a marine sponge. The advantages claimed for it are: 1. The ease with which it is rendered aseptic. All that is necessary before using is to boil the rubber and as many bags as may be required in the steriliser. They can then be used as they are or placed in lotion previously according to the method of the operator, contrasting favourably with the tedious and difficult cleansing of marine sponges. 2. It overcomes the difficulty often experienced in using plain gauze or gauze-covered wool pads of their becoming wrapped up and entangled in the omentum and coils of intestine, nor does it leave behind small particles of wool to interfere with healing. 3. It is unaffected by ordinary antiseptics. 4. By reason of its elasticity and moderate rigidity it effectually prevents the intestine from obscuring the field of vision, especially in deep operations in the pelvis or in the region of the gall-bladder. The rubber sheets are made in different sizes, each with a number of covers; the size I find most convenient for general use is 7 inches by 8 inches. The pads completed may be obtained from Messrs. Mayer and Meltzer who have carried out my suggestion in a neat and efficient manner.

G. W. KILNER CROSLAND, M.R.C.S. Eng., L.R.C.P. Lond.,
Honorary Surgeon, Huddersfield Infirmary.

### "THE WATCH-POCKET" ASEPTIC HYPODERMIC SYRINGE.

Messrs. Allen and Hanburys have submitted to us an all-metal hypodermic syringe which has some new features that should recommend it to the medical profession. The plunger is of metal, with engraved minim graduations; the top and bottom mounts are fitted with bayonet catches instead of screw threads, thus insuring easy sterilisation, things which go to make up a simple and trustworthy instrument, but which other inventors have equally made use of. The really novel device is in connexion with the needles, six of which are contained in a sterilised glass tube which fits inside the hollow metal plunger; the head of this part is made broad so as to allow of the syringe standing upright on it whilst a "hypodermic tablet" is dissolving in the barrel. The instrument is inclosed in a neat plated metal cylindrical case three inches long, with a ring to affix to a chain. Its price is 10*s.* 6*d.* with six needles; spare tubes containing six sterile needles are sold for 1*s.* 6*d.* per tube, or with platinum iridium needles for 7*s.* 6*d.* per tube.

## MEDICINE AND THE LAW.

### "*The Usual Medical Attendant.*"

INSURANCE offices are entitled to the opportunity of consulting with the medical man who has been last in attendance on the insured. No doubt the most perfect *bona fides* is to be observed in life insurances as in other contracts; and should the referee make a wilfully untrue statement or collude with the party making the proposal, he may, although not personally interested in the contract, render himself liable to an action if loss should ensue; for if a man will wickedly assert that which he knows to be false and thereby draws his neighbour into a heavy loss, even though it be under the specious pretence of serving his friend, he makes himself liable for the damage, and that even if no fraud was intended by him. A statement false in fact, but not known to be so by the party making it, or not made with intent to deceive, but, on the contrary, believed to be correct, will not render him liable in an action, although it may have induced the insurers to undertake the insurance and they may have suffered pecuniary loss thereby, since to support an action of deceit the scienter must be proved. In Wheelton *v.* Hardisty (5 Jur. N.S. 14) the court decided that "in cases where the representations of the referees are made the basis of the policy the answers of the referees are binding upon the insured, so as to make the falsehood of their representations an answer to an action on the policy, but in the present case, considering that the parties insuring were only required to state their belief as to the matter under discussion and that the life and referees were really acting in fraud, both of the plaintiffs and the defendants, and that they were not at all in the capacity of persons negotiating the contract, we can see no pretence for making them the agents of the parties insuring, so as to render their fraud that of the plaintiffs. The insurer and the insured being equally ignorant of material facts to influence their contract, if the insurer asks for information and the insured does his best to put the insurer in a situation to obtain the information and to form his own opinion whether the information is sincere, can it be permitted that when the insurer, without any blame being attributed to the insured, has allowed himself to be deceived he shall be able to say to the insured, 'you warranted all the information I received to be true, and having received your premiums for many years, now the life drops, I tell you that I was incautious and the policy I gave you a nullity'?" All insurance offices are naturally desirous to consult with the medical man who has been last in attendance on the life to be insured; and when the reference was made to a person who had been the ordinary medical adviser, but no mention was made of the person attending at the time of the insurance the policy was vacated. At the same time a reference to a person who, immediately before the time at which the policy is effected, has been casually consulted for trifling maladies, will not satisfy the requisition for a reference to the *usual* medical attendant, although the person who had formerly attended may have retired from practice at the time. "Who is your usual medical attendant?" involves a question of considerable importance. "Now," said Lord Abinger, in Hackman *v.* Fernie (3 M. & W. 505), "let it be considered for a moment what is the grammatical sense of the question. It is in the present tense. Suppose a person goes to effect a policy on his life who had no medical attendant in the last year; if the answer to the question were, 'I have no such medical attendant,' must not that question of necessity be followed by another question, which is, 'Who was your former medical attendant?' The terms and nature of the question show that it was designed to extract from the person who is the medical attendant, best able to give an account of her constitution at that time; and if she has no medical attendant in the precise grammatical sense of the question, it appears to me that she is bound to mention who is the medical attendant who could give that information." Also, "the word 'usual,'" said the same authority, "implies having attended more than once." In Everitt *v.* Desborough (5 Bing. 503) the plaintiff, wishing to insure the life of a man named House, referred the agent of the company to him for the necessary information for filling up the declaration, and he stated: "I have never had occasion for a doctor: sometimes I have taken Harvey's quack pills, but Mr. V. knows as much of me as any man." The agent therefore drew up the proposal, which was signed by the plaintiff, stating that Mr. V. was the usual medical attendant. It was proved on the trial that Mr. V. had not attended House for nearly 20 years, but that he had been occasionally attended after fits of intemperance, in which he was wont to indulge, by a quack doctor named Harvey. Of this the plaintiff was unaware. The court decided that it was no matter whether Mr. Harvey was a good medical attendant or not, he was the person actually attending him; that the circumstance that the plaintiff was ignorant of the error did not affect the question, but that the policy was void. Hence, it seems that it is not necessary that the usual medical attendant should be a regularly qualified practitioner; the person who acts in that capacity, whether qualified or not, is the person to give the required information.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM, N.—A vacation course will be held at the hospital during the coming September, commencing on the 9th of that month, the arrangements for which have been adapted to the requirements of those engaged in active practice. They include daily cliniques in the wards, demonstrations in the out-patient departments, classes on clinical methods, other practical clinical demonstrations, and clinical lectures with lantern demonstrations. The fee for the course, which will last a fortnight, is 1 guinea. Further particulars may be obtained from the Dean at the hospital.

THE LANCET.

*LONDON: SATURDAY, AUGUST 3, 1907.*

## The Addresses before the British Medical Association: A Plea for Accuracy in Medicine.

WE report on other pages of this issue the three addresses delivered in plenary congress at the seventy-fifth annual general meeting of the British Medical Association at Exeter. We are enabled to do this by the courtesy and assistance of the editor of the *British Medical Journal.* The Presidential address of Dr. HENRY DAVY deals with Science in its application to National Health, Dr. W. HALE WHITE in his address in Medicine puts forward a plea for Accuracy of Thought in Medicine, whilst Mr. H. T. BUTLIN has chosen as the subject of the address in Surgery the Contagion of Cancer in Human Beings, especially from the Point of View of Auto-Inoculation. In considering these discourses, with no disrespect to Dr. DAVY's excellent and timely address, we propose to discuss first the strong appeal made by Dr. HALE WHITE for accuracy of thought in medicine, as in some sense pointing the moral of the trilogy. The general effect that the reading of Dr. HALE WHITE's address will probably leave on most medical men is one of salutary humiliation, for he irresistibly brings home the truth that only too often does the voice of authority seek to expound a mystery by giving it a name, and only too readily does contemporary medical thought abase itself before the words of the oracle.

He begins his indictment by considering that nebulous clinical scapegoat which is known as "irregular gout," and insists that not a few practitioners when confronted with certain unexplained symptom-groups, instead of humbly confessing to ignorance of their nature and seeking by increased diligence to search out their causes, think to explain them away by assuming that such symptoms would be caused by an excess of uric acid in the patient's blood and by further assuming that such an excess of uric acid exists in that blood; their next step is to assume that this state of things is brought about by consuming "red" meat or by not consuming "white," and so the chicken is allowed and the beef-steak forbidden. When we see the premisses of these not infrequent clinical and therapeutical deductions thus exposed we are constrained to support Dr. HALE WHITE's suggestion that in certain matters we have not advanced beyond the tenth century, although in many more the progress of our science has been so remarkable. The next example of inaccuracy in medicine that comes under Dr. HALE WHITE's scourge is the slovenly diagnosis of a "liver out of order"; and had he been again historically minded, he might have traced that diagnosis *de convenance* at least as far back as the fourteenth century. He proceeds to show how by the blind acceptance of the symptom of hæmatemesis in a young woman as the inevitable witness to an ulcer in her stomach many patients have been submitted to a severe and useless treatment, while it is clear that the plain evidence of the post-mortem room to the existence of "gastrostaxis" as a clinical entity has been overlooked by clinicians for a needlessly long time. The next object of attack was the doctrine of "selective action" of diseases on different tissues, and here again Dr. HALE WHITE does good service in reminding us that the name does not explain the fact. His warning against making a diagnosis which implies a cause, unless that cause has been verified as really present, is worth quoting: "We shall often have to say that we do not know, but at any rate our reticence will not retard but will rather advance the progress of medicine." He might have cited the whole history of mediæval medicine in support of the mischief wrought by an inability of its practitioners ever to confess their ignorance. The last word of this stimulating sermon is directed against the blind belief in authority, and no better instance could have been given than the abuse of venesection, though Dr. HALE WHITE does not forget to add a plea for the disregard of the reactionary voice of modern authority that has attempted to abolish bleeding entirely. Let us give another instance of the abuse of authority that readily occurs, and one which tends most terribly to inaccuracy in medicine. The copying of time-honoured errors and unfounded speculations from text-book to text-book is a practice of which modern writers have by no means purged themselves. Here we are addressing mainly the leaders of the profession, and it is good that salutary words should be addressed to them as much as to the rank and file. We all want accuracy, and the longest step towards gaining it has been taken when we recognise how easy it is to be inaccurate.

Dr. DAVY, at the outset of his Presidential address reminds his audience that the enormous changes which had occurred in the practice of medicine since the British Medical Association met 65 years ago at his ancient city were due to "the growth of knowledge founded upon systematic experiment—that is to say, scientific knowledge." Systematic experiment has only one object, the accurate observation and recording of facts and the deduction of principles from their sequences, and if at the outset accuracy be wanting then the deductions drawn can only leave confusion worse confounded. He would be a bold man who would deny that in some instances this has happened in modern medical progress, but the solid mass of scientific truth which these 65 years have given us rests entirely upon the foundation of accurate method and accurate thought. We may read the same lesson into much of Dr. DAVY's address, although he concerns himself rather with the state of the national health than the advance of experimental science in the present day. Thus when he discusses the advantage of physical exercises as a means of training the body he laments that the instruction of the people in such means of attaining to and preserving its health should be left to "professors of Swedish exercises" instead of being directed by its medical advisers; this surely means that it is in the accurate adjustment of such training to the needs and limitations of the individual that the greatest good will be obtained from physical exercises and the possibility of harm from them prevented. The utility of the next measure that he advocates entirely depends on the thoroughness and accuracy of those responsible for its administration: we refer to the medical examination of school children with a view to the control of their work and play. Dr. DAVY quotes the example originated by Dr. C. DUKES at Rugby School as a model for the system which should be adopted; such a system must depend on the thorough examination of each child, the methodical record of its result, and the subsequent observation of the course of work and play allotted, with a view to the attainment of that accurate science of educational hygiene which the International Congress to be held next week in London aims at constructing. Dr. DAVY insists on the importance of giving school children some knowledge about the structure of their bodies, and the justification of this measure, which we have systematically advocated, is simply that they may be given an accurate basis on which to found the physical conduct of their lives, instead of having to rely upon such haphazard and slipshod notions of the "laws of health" as their parents may or may not see fit to impart to them. The end of the address under review gives a striking object lesson from Japan, where the training of the medical profession in accurate methods has led to an equally scientific spirit of hygiene being widely spread through the country.

Turning now to Mr. BUTLIN'S address in Surgery we are reminded of the hopeful fact that there is a growing national appreciation of the necessity of accurate and patient research into all the great mysteries of disease. The systematic manner with which the problem of cancer is being investigated is largely owing to public interest, and of this method of research Mr. BUTLIN'S address forms an excellent instance. He has set himself the task of investigating the possibility of the contagion of cancer in human beings, and it has occurred to him that the establishment of the occurrence of auto-inoculation of a non-cancerous part of a cancerous patient's body by direct contact with the cancerous part will be an important step towards demonstrating the possibility of the contagion of the disease between different persons. He first formulated certain stringent conditions to which every case must conform before he would admit the occurrence of auto-inoculation as proved for it, and then with extreme care he investigated the facts of all such cases to which he could gain access. This research is an apposite example of the advantage of accurate observation for the cases depend in many instances for their validity on the recording of the exact spot, sometimes within a fraction of an inch, at which the supposed auto-inoculated tumour started. It should be a stimulus to accurate habits in all clinical recorders, especially those who are working at hospitals where the case-papers for which they are responsible will be filed for reference, never to describe a phenomenon in writing unless they have for it the evidence of their own senses, for a neglect of this principle may render them guilty of mercilessly misleading some future inquirer. Mr. BUTLIN has been happy in being able to assure himself of the accuracy of the records which he quotes, and they make a strong case in favour of the auto-inoculation of cancer; we trust that they will serve to lead him and his fellow explorers in this dark country many steps along the road.

# The Qualification for the Office of Physician in Provincial Hospitals.

WE published in THE LANCET of July 20th, p. 203, a note on the recent decision of the governors of the Hastings, St. Leonards, and East Sussex Hospital to rescind the rule which made it obligatory for a candidate for the office of physician at that institution to hold the Membership or Fellowship of a College of Physicians. The rule has now been changed so as to allow a medical graduate of any British University to fill such a post, and no restriction will be placed upon the class of private practice which may be conducted by the physicians of the hospital. The matter opens up considerations of far wider import than is at once apparent, and in calling attention to a few of them it will be as well to mention briefly the decisions which within the last two years have been reached by the governors of the Royal Berkshire Hospital and of the Cheltenham General Hospital respectively when called upon to give their verdicts in similar contingencies to those which have recently occurred at Hastings. Events at the Hampstead General Hospital, which we have reported, may arise in this connexion in some of our readers' minds, but as there are here other issues we propose only to discuss the simple case as it has occurred at the provincial hospitals which we have mentioned.

At the Royal Berkshire Hospital the rule for the office of physician originally provided that the holder must be a medical graduate of Great Britain or Ireland, and that he should not practise, or be connected in partnership with anyone practising, surgery, pharmacy, or midwifery. This meant that although the hospital did not insist on its physicians holding the Membership or Fellowship of a College of Physicians (to which we may conveniently refer as the "Membership qualification"), yet it did insist that they should be exponents of pure medicine, in its limited sense, and as such presumably skilled above the ordinary in its practice. There is nothing in the rule to indicate that they should be what was originally meant by the word "consultants"—i.e., that they should only see patients in consultation with other practitioners. In the autumn of last year two assistant physicians were appointed at the Royal Berkshire Hospital whose private practice did not conform to this rule, the sanction for their election being provided by a deletion of the clause forbidding the practice of midwifery. At that time [1] Dr. FRANCIS HAWKINS wrote to ask for our opinion as to whether this was fair treatment of the physicians appointed under the former restriction, and we replied that, if in the opinion of the authorities the change was of the nature of a reform which they believed would be for the good of the institution which they administered, it was right that it should be made. We also said, as we still hold, that "any modification of hospital rules which tends to break down artificial barriers, purporting to divide the medical profession into classes and sections, is for the good of the profession and the public."

---

[1] THE LANCET, Sept. 8th, 1906, p. 678.

Turning now to the Cheltenham General Hospital, we find that although that institution relaxed its original rule so as to throw open its physicianship to any registered British graduate or Fellow, Member, or Licentiate of a College of Physicians of the United Kingdom, yet the practice of surgery, pharmacy, or midwifery was made a disqualification for the appointment. In this instance, then, we find a very rigid rule adopted, and it is, we understand, strictly administered, so that presumably the opening of an empyema would be held to be beyond the physician's pale. Moreover, he is, of course, entirely debarred from the private pursuit of general practice. This restricting regulation is strictly comparable to the "Membership qualification" which has been rescinded at Hastings, wisely as we think. The only difference between them is that the one lays down the written law that the hospital physician shall practise "medicine" only, and the other relies on the restrictions attached to the possession of the "Membership" that its holder shall confine his practice in like manner; the latter qualification also prevents its owner from practising in partnership, from buying or selling a practice and from suing for fees, all of which must tend to force him into consultant practice. But the demand for pure consultants in the smaller provincial towns which have no medical schools is getting less and less, and the great proficiency to which in the course of the last 20 years the general practitioner has attained, together with the improved facilities of travelling for consultations to London or some other large centres, sufficiently explains this change. Many provincial hospitals, indeed, have never demanded consultant rank of their physicians, but there seems every likelihood that in the future more of those which now insist on the "Membership qualification" may have to follow the example of Hastings, and we think that in so doing they will be ill-advised to add such a restricting clause as has been done at Cheltenham. The situation that is likely to arise in such towns is that which the Hastings, St. Leonards, and East Sussex Hospital has had to face, that no Fellow or Member of a College of Physicians is available to fill a vacancy at the hospital; the only alternative to abolishing the "Membership qualification" would then be the importation of such a Fellow or Member into the town. In probably every case the feeling of the local medical men, many of whom would surely be skilful and competent physicians, would set dead against the latter course, and it is not very likely that the newcomer would prove very successful as a pure consultant.

Supposing that the "Member" should be imported or that there should happen to be a "Member" living in the town who would accept office, it is at least possible that these gentlemen might not be the best men available for the post. The Membership of a College of Physicians is an honourable estate and is the hall-mark of a high standard of professional knowledge attained at one period of its owner's life, but it is no proof that he has kept in touch with the advance in medicine or that he has the love of his work or the tact and address that are all so desirable in a hospital physician; all these, in truth, he may have, but a dozen general practitioners in the town—excellent physicians and surgeons—may have them in yet greater degree, and it surely would be wiser for a body of governors to appoint a man who, of its own knowledge, possessed them than to import a stranger simply because he presented the academic qualification to act as hospital physician. In one other respect the convention is quite illogical; although the surgeons of the metropolitan hospitals and those of the large towns practise "pure surgery," yet they do so by virtue of their opportunities and not of the Fellowship of their College; many of their provincial compeers who act as surgeons to the hospitals of their own towns are general practitioners in the best sense of the word, and neither their College nor their hospital says them nay. Why, then, should their medical colleagues be hampered by an obsolete restriction? We more than suspect that this is a relic of the old-time vaunt of superiority of medicine over surgery, and we cannot refrain from recalling Professor CLIFFORD ALLBUTT'S forcible indictment of ancient prejudices, to be found in his address on "The Historical Relations of Medicine and Surgery," delivered a few years ago at St. Louis—"To maintain separate Colleges to intensify schism ...... to distribute half of a malady to one practitioner, to another the remnant ...... is contrary to art, nature, and common sense." When we consider the excellence of those exponents of medicine, the general practitioners of our provincial towns, it seems unreasonable that regulations made before the present standard of proficiency was attained should hinder their election to the staff of those hospitals which they are so well qualified to serve.

## "Miner's Phthisis" at Bendigo.

IN the report of an investigation of the incidence of miner's phthisis at Bendigo, prepared by Dr. WALTER SUMMONS under the direction of the Bendigo Hospital Committee at the cost of the Trustees of the EDWARD WILSON estate, some valuable observations on the prevalence, nature, causes, and prevention of that disease are to be found. A statistical study of the death registers from January, 1875, to July, 1906, showed that there had been a marked increase in the number of miners dying from diseases of the respiratory tract, notably tuberculosis. The number of quartz miners at Bendigo has varied during that period from 2850 to 3990. During the period investigated the total deaths from all causes amounted to 2810, of which 1402 were due to respiratory diseases, 891 being recorded as due to tuberculosis and 280 as chronic bronchitis, although it is probable that the majority of these would be more correctly included as tuberculous. A study of the quinquennial mortality rates brings to light the striking figures that the mortality from respiratory diseases calculated as per 10,000 has risen from 77·0 to 191·6, that from tuberculosis alone having increased from 48·5 to 129·6, the latter figure being six times as great as the mortality rate amongst adult males from pulmonary tuberculosis in Victoria generally. The ill-effects of this prevalence of that disease are shown also among the non-mining inhabitants of Bendigo, who likewise show an excessive death-rate from it in spite of the healthy climate of Bendigo.

It is noteworthy that during the same period the number of fatal mining accidents has steadily diminished owing to the greater care exercised in regard to the use of explosives and to the supply of safety appliances. The great increase in the death-rate from tuberculous disease, Dr. SUMMONS maintains, clearly shows that the same concern is not manifested in the maintenance of the miner's health as for his safety. It is generally admitted that one of the main factors in this increased mortality has been the introduction of machine rock-drills which have enabled mining operations to be carried on with much greater rapidity but with the production of a greatly increased amount of dust. Dr. SUMMONS summarises the clinical features as observed by himself in 192 cases of "miner's phthisis" in all stages. The onset is most insidious and, as a rule, only after years of work in the mines are symptoms apparent, such as frequently recurring coughs and mild attacks of bronchitis, the general health remaining good or, at any rate, such slight malaise occurring that there is no interference with the men's capacity for work. Even before tuberculous infection is superadded the expectoration may be profuse, muco-purulent in character, and teeming with staphylococci and putrefactive organisms. Often it is coloured by the dust particles constituting the "black spit." Sooner or later the affected miner complains of shortness of breath, greatly augmented by the attacks of bronchitis, and this condition increases till he is quite incapacitated for work, the slightest exertion producing hurried breathing and stridor. This dyspnœa is not associated with any signs of cardiac weakness and does not cause cyanosis. Such is the usual history of a case of pure fibrosis, the general health remaining satisfactory and the appetite good; a few of the patients, if kept from going to the mines, improve but are unable to carry out any occupation requiring exertion. They usually show an increase in the number of red blood corpuscles with a high percentage of hæmoglobin. Associated with the bronchitic attacks there are as a rule pleuritic pains and generally signs of pleurisy are discoverable, notably in the region of the fifth and sixth ribs in the axillary region. On physical examination of an ordinary case of fibrosis the hurried breathing and diminished chest expansion are noticeable and the vocal fremitus is often increased but local areas of diminution are not uncommonly found. Dulness, especially towards the bases and in the axillary regions, results from pleural adhesion and from the fibroid changes in the lungs. The auscultatory signs comprise prolongation of expiration and various degrees of bronchial breathing, with signs of bronchitis and also creaking sounds audible on inspiration and expiration. Cardio-respiratory sounds, especially a series of short puffs synchronous with the heart beats, are common as also are fine pleural friction sounds.

As already pointed out, with such signs there may be little or no constitutional disturbance; the disease is purely a local disease of the respiratory organs, with respiratory symptoms only. When, however, tuberculous infection develops there are progressive weakness and loss of weight, with drenching night-sweats and a slight rise of the evening temperature. The symptoms show some slight variations from those of ordinary pulmonary tuberculosis—viz., hæmoptysis is rare owing to the peri-bronchial and peri-arterial fibrosis, and pneumothorax is extremely uncommon owing to the pleural adhesion which is the rule in these cases. The dyspnœa is out of all proportion to the extent of lung involved in the tuberculous process. Some of the cases present an appearance strongly suggestive of Addison's disease. The physical signs of consolidation and excavation are usually imposed upon those of the fibrosis, but in some cases tubercle bacilli are found in the expectoration when the signs are those of simple fibrosis only. In the tuberculous group of cases there is usually a secondary anæmia, with reduction of corpuscles and hæmoglobin, and an increase in the leucocyte count up to 25,000 per cubic millimetre. As a result of his observations Dr. SUMMONS therefore divides the cases into two groups: firstly, simple, non-tuberculous fibrosis—in other words, a silicosis of the lung; and secondly, the mixed type, with a tuberculous infection in a fibroid lung. Of 204 cases positive evidence of tuberculosis was obtained in 95—that is, in 47 per cent.—but in several other cases there was a strong probability of their being of tuberculous nature, though actual proof was not forthcoming. In all fatal cases, however, tubercles were found and Dr. SUMMONS concludes that tuberculosis is the almost invariable cause of death in these cases. He records the results of the necropsy in 19 cases, of which ten are described in detail. The main changes induced by the sharp angular particles of silica appear to be peri-bronchial and interlobular pigmentation, chronic catarrh of the fine bronchioles, filling up of the alveoli with catarrhal products, subsequent fibrosis, and great increase of fibrous tissue around lymphatic and vascular channels. By the combining of areas of fibroid alveoli larger pigmented fibrous patches are produced in which no remains of alveolar wall can be recognised. When infection by the tubercle bacillus takes place caseation and cavitation occur, the process being somewhat modified by its incidence in fibrotic instead of normal lung tissue. The dust is first taken to the peri-bronchial lymphatic and thence to the bronchial glands; in sections of lung the dust particles are seen to be in lymphatic spaces, which are often blocked by them, and also in the subpleural lymphatics. Chemical analysis of the ash of the lungs of a Bendigo miner dying with a moderately advanced condition of silicosis gave 40·5 per cent. of silica, compared with 13·4, the amount found by HAMMARSTEN in the ash of normal lung tissue. The silica obtained in the ash proved on microscopical and chemical examination to be identical with the country rock of Bendigo, which is to be regarded as the sole exciting cause of the ordinary non-tuberculous "miner's phthisis," other factors, such as vitiation of the air and noxious fumes, being merely minor predisposing causes. To investigate the further implantation of tuberculosis in these cases Dr. SUMMONS measured the opsonic index in ten cases of non-tuberculous fibrosis and found it to vary between 0·7 and 1·16—i.e., practically within the normal limits of variation; in ten cases with superadded tuberculosis the index varied between 0·5 and 1·3. He infers that the great incidence of tuberculosis is caused by the diminished vitality of the damaged lung and not due to any general lowering of resisting power.

In regard to the prophylaxis and treatment some important recommendations are made in this report: firstly, to endeavour to prevent infection by the tubercle bacillus and, secondly, to prevent the vitiation of the air in the mines by dust and noxious fumes. In regard to the former it is suggested that indiscriminate expectoration and carelessness in the destruction of tuberculous sputum should be penalised, that a home for advanced tuberculous patients and a sanatorium for early cases should be established in the vicinity of Bendigo, that provision should be made for the relief of invalid miners by the Government, and that all miners affected with respiratory diseases should be under medical supervision. It is further recommended that a Medical Inspector of Mines should be appointed. The recommendations as regards ventilation and the prevention of dust are given in a separate report, presented by Dr. SUMMONS to the Department of Mines of Victoria. It is here suggested that certain rules of the Mines Act regarding the allaying of dust shall be rigidly enforced and that the air of the mines shall be tested by inspectors and that where necessary improvements in the construction of air courses shall be enforced. In regard to the dust question, it is shown that dust is formed in most of the operations of mining—viz., in blasting, in shovelling, in throwing the rock and quartz down the shoots, and, above all, in rock drilling. It is essential that in regard to all of these operations the formation of dust shall be minimised or prevented and since water under pressure and compressed air are available in all the mines this should not be difficult to attain. It appears that for some unexplained reason the ordinary miner dislikes using a water jet. We have on a former occasion, in referring to "miner's phthisis" in the South African mines,[1] drawn attention to the importance of the use of a water-jet in connexion with rock drills and this report emphasises the necessity. As in the case of ankylostomiasis an important factor in regard to prophylaxis is to educate the miner himself in regard to the importance of taking precautions respecting his own health. Dr. SUMMONS'S reports constitute a valuable and important contribution to the literature of "miner's phthisis" and represent a serious attempt to grapple with a matter of vital importance to the mining community, among whom he has worked. We hope to hear that some, if not all, of his suggestions have been put into effect.

# Annotations.

"Ne quid nimis."

## THE MIDWIVES ACT, 1902: PAYMENTS SUGGESTED TO THE MEDICAL PRACTITIONERS CALLED IN.

CERTAIN new rules, or modifications of the existing rules, made by the Central Midwives Board in superintending the practice of midwives have been recently approved by the Privy Council and are now being issued by the Local Government Board in a circular to the boards of guardians. The modifications relate largely to midwifery practice in Poor-law establishments, the certified midwives exercising their calling in workhouses or infirmaries under the supervision of a duly appointed medical officer being relieved from the legal compulsions in respect of patient, child, and instruments that are obligatory upon certified midwives attending patients upon their own responsibility. Many of these regulations are, of course, not appropriate in the case of a midwifery nurse in a Poor-law establishment, working under the supervision of a medical officer, nor do some of them apply to midwives exercising their calling in hospitals. The circular of the Local Government Board sets forth the exemptions which would naturally be made in the case of the nursing staff of a hospital. The second section of the circular deals with the appointment of certified midwives in workhouses and infirmaries, which the Board is now prepared to allow, provided that application be made to it, that the proposed midwives be duly qualified under the Act, and further, that the consent of any medical officer entitled to fees for attendance on such cases be first obtained. The last section of the circular states the views of the Local Government Board on the question of payments to medical practitioners called in on the advice of midwives. These views do not constitute a definite instruction on the subject, but the Board suggests that under existing enactments and Orders (Articles 182 and 183 of the General Consolidated Order and Section 2 of the Poor-law Amendment Act, 1848) it is competent to guardians to pay the fee of any medical man called in on the advice of a midwife to attend upon a poor person in case of difficulty. This amounts to little more than a pious opinion, although the further suggestion is made that guardians shall notify to medical men practising in their union willingness to accept the responsibility of fees for attendance on poor women, of whose qualification for such relief the guardians are to be the judge, the payments being on some definite scale suitable to local circumstances. All this does not seem to clear the issue and we are inclined to think that the Board is over-sanguine in its opinion that "the exercise by boards of guardians in a careful but liberal spirit of their powers" should leave no reasonable ground of complaint to the medical profession. We fear that not a few guardians will be inclined to let their carefulness overshadow their generosity, even now that their powers have been more clearly defined by authority.

## THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

WE have already announced many of the arrangements connected with the forthcoming Congress on School Hygiene but it may be convenient to our readers that we should give some final information. The Congress will be formally opened at South Kensington in the buildings of the University of London on Monday next, August 5th, by Lord Crewe, Lord President of the Council, who undertakes the duty at the request of His Majesty the King who is Patron of the Congress. The inaugural address will be delivered by the President of the Congress, Sir Lauder Brunton, at 9 P.M., on Monday, but proceedings in connexion with the Congress will begin on Saturday, August 3rd. Informal receptions will take place on that day at the University buildings from 12 noon till 3 P.M., while from 5 to 7 on the afternoon of the same day there will be a reception at Londonderry House by the Marchioness of Londonderry, the President of the Ladies' Reception Committee. In the evening of August 5th, after the inaugural address has been delivered, there will be a reception and conversazione at the University of London. The sectional meetings will begin on August 6th and will be continued each day from 10 A.M. till 2 P.M. until August 9th. During the afternoons various excursions will be made to places of educational interest, while the evenings, with the exception of August 7th, when official business will be discussed, will be devoted principally to lectures. On August 10th there will be excursions to the University of Cambridge, to the Educational Museum at Haslemere, to Brighton, and to Eton College and Windsor Castle. An exhibition of school building and furnishing appliances, which has been arranged by the Royal Sanitary Institute, will be held at the University of London during the week. It will illustrate the whole range of school hygiene both historically and according to everyday practice. For the convenience of delegates and members arrangements have been made with Messrs. Cook and Sons of Ludgate-circus, E.C., with regard to the provision of hotel accommodation. The capital of the British Empire having been chosen as the place of meeting for this congress it is eminently fitting that the buildings of the University of London should have been selected for the home of the Congress. Although South Kensington, where the university is now situated, is not quite so central as Burlington Gardens, Piccadilly, from which place it was removed a few years ago, still with the recent improvements in the means of intercommunication in London it is easily accessible from almost any part of the metropolis. Visited as the Congress will be by representatives from all civilised countries, by men of science and experts in educational methods, we look forward with hope to the results of its labours. We trust also that no bad impression will be left upon our foreign guests by any feeling that the Board of Education has not shown proper sympathy with the Congress. It must be explained to them that in this country no social or scientific movement ever waits for official sanction or support, because of the intimate knowledge that such assistance will probably be withheld, at any rate until the movement can do without the assistance. We are glad to see that the Education Committee of the London County Council has extended a general invitation to the Congress to visit all schools of the Council that are open during the session and has also appointed its chairman and vice-chairman, as well as the chairmen and vice-chairmen of the special schools and day schools subcommittees, to represent it at the Congress.

---

[1] THE LANCET, Oct. 24th, 1903, p. 1181.

## THE MISUSE OF PRESCRIPTIONS.

A CORRESPONDENT has sent to us a specimen of a label issued by a dispensing druggist in Port Adelaide. The label sets forth that the contents of the bottle or packet to which it is attached are "The Original Dr. Jackson's Compound Sarsaparilla Blood Purifier and Reviver." Further, the label states that the nostrum is "Strongly recommended by the 'Lancet' and 'British Medical Journal.'" The label is a very good example of the way in which advertising druggists and quack medicine sellers contrive to give a little truth and to imply a great deal more than they have any right to do. It is not at all improbable that at some time or other some Dr. Jackson prescribed sarsaparilla, a drug which at one time had a great reputation as an "alterative." It forms the basis of most, if not all, of the so-called "blood-purifying" mixtures, and is generally made up with a certain proportion of potassium iodide. But to say that any particular preparation of this drug is "strongly recommended by THE LANCET" is an untruth. Unscrupulous persons to whom prescriptions are handed over, both dispensing druggists and patients, sometimes exploit a prescription for their own use. The dispenser makes a note of a prescription signed by some well-known medical man and in process of time, preferably after the death of the medical man, the dispenser issues the mixture, or whatever it may be, as "Dr. Diafoirus's celebrated mixture for ——. Prepared solely by ——." The condition for which the mixture is given will vary according to the fashionable complaint of the moment. With regard to patients we gave a striking example in our issue of Jan. 15th, 1898, p. 174. A patient had consulted a well-known specialist for wrinkles which had appeared on her face. He gave her a prescription which she handed on to many of her friends, after which she is reported as saying to the writer of the article in the lay paper from which we took the story, that she "thinks seriously of putting it on the market, so that it may have in the future a wider field of usefulness!" Another way in which prescriptions are misused is as follows. A patient is given a prescription for some complaint. He or she meets a friend who imagines that he or she is suffering from the same complaint. Patient No. 1 implores Patient No. 2 to try "the prescription that did me so much good." It is quite possible that No. 2 is suffering from quite a different complaint to that from which No. 1 suffered, in which case the prescription will certainly do no good and may very possibly do a great deal of harm. But the child-like faith in drugs and the ignorance of the general public about its health and the way in which its members will swallow anything, provided it be puffed enough, either in the columns of the daily press or by a friend, are astounding and would be ludicrous were the matter not so serious.

## THE ACOUSTIC LIMITATIONS OF THE BINAURAL STETHOSCOPE.

THE *New York Medical Journal* of July 13th contains an important paper on the acoustic limitations of the binaural stethoscope by Professor Lewis A. Conner of Cornell University, who finds that for the perception of certain sounds the naked ear has advantages over the stethoscope. A fact of interest in this connexion may be remembered. When the British physicians and surgeons visited Paris in 1905 our Special Commissioner was struck by the fact that the stethoscope had fallen into disuse even at the Hôpital Laennec and that auscultation was performed by applying the ear to a napkin placed upon the chest.[1] Only when exact localisation was desirable a stethoscope was used and this was a monaural wooden or metal one. The French physicians said that they could better appreciate the finer departures from the normal by immediate auscultation. Professor Conner has made a careful study of the sounds heard better by the naked ear than through the binaural stethoscope. He finds that the great majority of sounds arising in the heart are heard somewhat more distinctly through the stethoscope. But certain high-pitched whizzing or blowing diastolic murmurs may be clearly heard with the naked ear when inaudible through the stethoscope. The following is an example. A man, aged 51 years, had a good pulse with quick rise and fall and capillary pulsation on the forehead and lips. The first sound at the apex was somewhat impure, faint, and ill-defined; the second pulmonic sound was accentuated, and over the aortic area the sounds were fairly normal. With the stethoscope no murmurs were audible, but with the naked ear a faint, long, high-pitched diastolic murmur was heard over the sternum opposite the third rib and in the third left space. The patient was in hospital for weeks, during the whole of which time the peculiarity existed. Professor Conner has not been able to discover any other cardiac murmurs which fail to be transmitted through the stethoscope, but he thinks that some mitral or tricuspid regurgitant murmurs of the same blowing quality may not be transmitted. Thus the class of cardiac sounds better heard with the naked ear is small and of no great clinical importance. On the other hand, a large and important group of pulmonary sounds are best heard with the naked ear. This comprises a considerable proportion of all bronchial and amphoric breath sounds. Faint and high-pitched sounds show this peculiarity most. In many cases the difference is startling; a sound inaudible or barely recognisable through the stethoscope is heard clearly and sharply by the naked ear. With louder bronchial sounds, especially with those of medium or low pitch, this difference in audibility is less or may be absent. But when the breath sounds are high and faint, as they often are at the beginning of pneumonic consolidation or in pleuritic effusion, the greater sensitiveness of the naked ear is obvious. The same is often true of amphoric breathing. For example, a man, aged 40 years, had fever, pain, and signs of fluid at the right base extending up to one inch below the angle of the scapula. With the stethoscope only absence of all breath sounds and a few fine râles were noted. But with the naked ear distinct amphoric breathing was heard by everyone who listened. The disease proved to be a large subphrenic abscess. Thus sounds best heard with the naked ear, whether pulmonary or cardiac, have in common high pitch, slight intensity, and a blowing or whizzing quality. What is the explanation of this fact? Most cardiac and many pulmonary sounds, such as the normal vesicular murmur and many râles, are best heard through the stethoscope. The reversal of this rule must be due either to the stethoscope transmitting certain types of sound less than others or to a selective action of the ear when in contact with the chest. Of the latter there is no evidence. On the other hand, it is well recognised in acoustics that high-pitched sounds are conducted along closed tubes less perfectly than are low-pitched ones and that the deadening effect is increased if the tubes have elastic walls. When the ear is applied directly to the chest sound is conveyed not only through the auditory meatus but also through the bones of the skull. With a flexible stethoscope this bone conduction is lost. For sounds of low pitch the intensification produced by the stethoscope more than compensates for the loss of bone conduction, but this is not true for faint sounds of high pitch.

---

[1] THE LANCET, May 20th, 1905, p. 1356.

## OLD BOTTLES AND THE PUBLIC HEALTH.

THE National Glass Bottle Workers' Trade Union sent last week a deputation to the President of the Local Government Board to call his attention to the indiscriminate manner in which old bottles are utilised to the danger of the public health. The spokesmen pointed out that these old bottles are frequently collected from ashpits and other receptacles for rubbish and sold for use after being imperfectly washed out with hot water. It was further stated that many of these bottles came from places where infectious disease existed and that they afforded a possible channel for its dissemination. It was urged that some system of sterilisation should be enforced in the case of such bottles before they were allowed to be sold and used again. Mr. Burns replied that he was in sympathy with the object of the deputation and promised to give his careful attention to the possibility of carrying out the practical suggestion placed before him. It is only necessary to read this protest to be in accord with it; there is no doubt that the practice complained of may well be a source of infection. We should like to think that no one purchasing such bottles would fill them with any liquid for public consumption without first satisfying himself of their cleanliness, but unfortunately our experience of other unchecked industrial processes, as witness the use of loathsome bed stuffing, does nor make us too sanguine in the matter. It is surely not too much to demand that these old bottles should undergo a prolonged and efficient scalding either at the hands of the sellers or the buyers before being refilled and we trust that official action will be taken to secure this or some equally effectual precautionary measure. The National Glass Bottle Workers' Trade Union, even though its action was undertaken with one eye to its own interests and one eye to the public's, has done good service in calling attention to the matter.

## THE COVENTRY AND WARWICKSHIRE HOSPITAL

WE have received a communication from the authorities of this hospital which appears to indicate that in the minds of medical men the institution has been confused with the Coventry Dispensary, concerning which there has been a good deal of discussion in our columns and elsewhere. The erroneous feeling has among other things caused doubt in the minds of young medical men who might otherwise have offered themselves as candidates for the resident appointments in the Coventry and Warwickshire Hospital. We beg to refer young medical men to the advertisement which will be found in another column of this issue for a junior house surgeon at this institution and we hope that the hospital will speedily receive suitable applications for the post. We must point out, however, that other circumstances may operate in making candidates for the post scarce, as many similar institutions are finding it difficult to secure resident officers. The reasons for the reluctance of young medical men to take small hospital appointments are not very obvious to us, for although the work is hard and the pay small the experience is extremely valuable. The reluctance, however, exists and may become a matter of serious importance to hospital authorities.

## LIQUID PREDIGESTED FOODS.

THE Council on Pharmacy and Chemistry of the American Medical Association has recently published a report by a subcommittee which was appointed to examine the various "liquid foods," "medicinal foods," or "predigested foods," as found on the market in large numbers.[1] These foods are solutions containing as the essential constituents small amounts of protein substances and carbohydrates preserved by alcohol. In the preparation of such foods the protein substances should be converted into soluble peptones and proteoses by means of enzymes. The protein content of the various liquid foods examined ranged from 0·5 to more than 6 per cent. The carbohydrates present, amounting t from 0·55 to more than 15 per cent., included sucrose, maltose, glucose, invert sugar, and dextrin. The amount of alcohol varied from 12 to 19 per cent. Some of the foods contained a large proportion of glycerine. Their nutritive value depends on the amounts of protein and carbohydrate present, and these in many of the cases examined represented only one-third the calorific value of milk, while but a few possessed twice the calorific value of milk. The council has concluded that none of the commercial liquid medicinal foods examined contain sufficient food material to maintain normal nutrition. A man doing moderate work requires an amount of food capable of supplying energy equal to 3000 calories per day and in sickness about one-half this amount. The average daily dose of the "liquid foods" supplies only from 10 to 111 calories, based on the protein and carbohydrate present. It is calculated that to sustain the vitality of a patient during a serious illness about two litres of milk, giving 1430 calories, are required. Even if the alcohol is considered to have direct food value it would be necessary to administer from 700 to 1500 cubic centimetres of the "medicinal foods" to supply the same amount of energy. But in many cases the amount of alcohol exhibited by these quantities would keep the patient in a continuous state of alcoholic stupor. From these considerations it is clear that a patient would starve when these preparations are given in the doses that are recommended. Unless the advised daily dose of a

---

[1] Journal of the American Medical Association, May 11th, 107, p. 1612, and June 1st, p. 1866.

"liquid food" contains at least 100 calories, exclusive of alcohol and glycerine, it should not be depended on to sustain life even for a limited period. The council recommends that "liquid foods" should yield at least 8·8 per cent. of solids on evaporation and should possess at least as much nutritive value as milk. One-fourth of the nutritive value, exclusive of alcohol and glycerine, should reside in the nitrogenous matter. Further, the protein matter should be converted by enzymes—e.g., pepsin and pancreatin—and not by acids or by heat, as it is held by some observers that the products in the last-named cases may be toxic and dangerous.

## THE STAFF OF THE JOHANNESBURG HOSPITAL.

WE learn from the *South African Medical Record* that the governing board of the Johannesburg Hospital has recently deprived the assistant staff of seats on the board. This has been accepted without opposition but another change that it has proposed is being vigorously opposed by the medical staff. This is that the board shall have power at any time to appoint outside practitioners directly to the senior medical and surgical posts of the hospital. It is claimed that this rule would not ordinarily be exercised but would be held in reserve for the case of some European celebrity who might happen to settle in Johannesburg and whose services should not be lost to the hospital because he was unwilling to pass through the usual period of the drudgery of out-patient work. Our sympathies are with the staff who are hostile to this change; it seems very unfair that those who have borne the burden and the heat of the day should be ousted from the clinical reward of their labours by the chance advent of a "European celebrity" who is unwilling to follow in their industrious footsteps.

## RUPTURE OF AN AORTIC ANEURYSM IN A CHILD AGED THREE YEARS.

IN the *Journal of the American Medical Association* of July 6th, Dr. R. N. Willson and Dr. A. Marcy have reported the following remarkable case. A male child was born of apparently healthy parents five years after marriage, on Oct. 19th, 1903. The father admitted that he had twice had gonorrhœa but denied that he had ever had a sore on the genitals. But his nose was suggestive of the saddle type and at the age of 21 years he suffered from convulsive seizures resembling those of epilepsy. At the age of six weeks the child had bronchitis and while Dr. Marcy was examining the chest he heard a systolic murmur over the aortic cartilage which was so loud that it was audible over the whole chest, front and back. The circulation was good. On Nov. 17th, 1906, the child became ill with vomiting and rigors which recurred again and again. Malaria was suspected and quinine was given but without result. The rigors recurred irregularly and the temperature rose to about 102° F. and occasionally as high as 106°. The intervals were afebrile and then the child was bright and playful. But when the temperature rose he was dull and listless. At times he complained of distress in the epigastrium, occasionally in the upper chest. Sometimes he complained of pain in the neck; at other times the pain would shoot to his feet. He became anæmic and gradually weaker. On Dec. 13th Dr. Willson saw him in consultation with Dr. Marcy. The skin was sallow, almost of a lemon tint, and the mucous membranes were blanched. The cervical, submaxillary, axillary, epitrochlear, and inguinal glands were enlarged. In the episternal notch expansile pulsation was evident and a systolic thrill was felt, which extended over the whole upper chest. The upper part of the sternum and adjacent chest were absolutely dull on percussion. A loud, double, almost continuous murmur was heard with greatest intensity over the second right interspace and was transmitted over the entire præcordia and especially to the right scapular region. The abdomen (including the liver and spleen) seemed normal. Blood examination showed: red corpuscles, 2,000,000 per cubic millimetre; white corpuscles, 28,000 per cubic millimetre; and hæmoglobin, 40 per cent. The pallor deepened to a dusky hue, the face became puffy, and the left radial pulse almost disappeared. Congenital syphilis was diagnosed. A mass of enlarged bronchial glands, syphilitic or tuberculous, and congenital syphilitic endocarditis were suspected. Aneurysm was considered and but for the age would have been diagnosed. Death occurred on Dec. 26th. The necropsy showed an aneurysm of the ascending and transverse arch of the aorta which had ruptured into the pericardial cavity, advanced stenosis of the aortic orifice, and atheroma of the aorta. The liver was large and hard; the spleen was large but only congested. Dr. Willson and Dr. Marcy suggest that the aneurysm was of intra-uterine origin and due to syphilis.

## THE ROYAL SOCIETY OF MEDICINE.

THE medical section of the Royal Society of Medicine is now fully constituted and is ready to receive papers for reading and discussion in the winter session. The section will hold its first meeting on Oct. 22nd, when Dr. Hector W. G. Mackenzie will open a discussion on the Complications and Sequelæ of Pneumonia and the Treatment of Pneumococcal Infections by Serum or Vaccine. The list of officials of the Royal Society of Medicine is as follows:—President: Sir William Selby Church. Honorary treasurers: Dr. F. H. Champneys and Mr. A. Pearce Gould. Honorary librarians: Mr. Rickman J. Godlee, Dr. H. Head, and Dr. Norman Moore. Honorary secretaries: Dr. Arthur C. Latham and Mr. H. S. Pendlebury. Members of council: Sir R. Douglas Powell, Mr. Henry Morris, Mr. J. Warrington Haward, Mr. G. H. Makins, Sir Shirley F. Murphy, Mr. T. L. Read, Sir Felix Semon, Dr. Frederick Taylor, and Dr. T. J. Walker, together with the presidents of the sections and the officers who are *ex-officio* members of the council.

## A NOBLE FOUNDATION.

UNDER this heading the *Times of India* gives an interesting account of the Parsee Obstetric Hospital which was founded in Bombay about 20 ago by Dr. R. Temulji Nariman. Until this energetic and determined reformer led the way the treatment of Parsee women in their hour of travail was lamentable. They were isolated on the ground floor, usually in the most insanitary part of the building, and were attended by ignorant old women whose methods can only be described as barbarous. The infantile mortality in these circumstances was naturally very high; even now it is 11 per cent. outside the hospital, whereas inside, where the inmates enjoy all the advantages which the advance of Western science in the hygiene of obstetrics can place at their disposal, it is only 3 per cent. The institution is so highly valued by the Parsee community that the accommodation is always fully taxed. "We draw attention to these facts," says our contemporary, "not because there is anything new in them, the success of the hospital being familiar to the present generation, but because in these hurried days none should forget what lies behind them. This good work was not easily effected. There was a long battle against prejudice and custom in which, although he had the moral support of some leading members of the community, Dr. Temulji Nariman was always in the forefront. The hospital marks the bursting of the social fetters which were keeping the whole of the Parsee community in paralysing subjection; the advantages, direct and indirect, which it has conferred upon the race are incalculable. Most of those who were associated with Dr. Nariman in the early days of his enterprise have passed away, but he is with us still, full of enthusiasm and vigour. This is a man whom Government and his own community should delight to honour and Hindus and Mahomedans to emulate." The enthusiasm of the *Times of India* is no doubt well founded. The Parsees of India, although a conservative and self-contained race, are full of energy and quick to recognise the material advantages of Western civilisation. In commerce they have no superiors; in the East there are few towns of importance where Parsees are not to be found ministering to the requirements of the less astute natives, and at the same time absorbing their spare cash. Parsee manners and customs were formerly open to criticism in many respects. It is satisfactory to find that reformation has now established itself upon such a secure foundation.

## LEPROSY IN NEW SOUTH WALES.

THE annual report on leprosy in New South Wales, dealing with the events of the year 1906 and signed by Dr. J. Ashburton Thompson, President of the board of health, states that seven persons were admitted to the lazaret, one died, and four were discharged, one of whom was an Englishman recovered from the disease, and three were Chinese returned to their own country; on Dec. 31st, 1906, there were 20 persons remaining in the lazaret, of whom 10 were white and 10 were coloured. The lazaret is at Little Bay, near Sydney; the average daily number of patients for the year was 19·5 and the average cost per head was £79. The report, which fills 29 large pages of small print, with eight full-page plates of portraits, contains excellent clinical descriptions of all the new cases as well as of nine patients who had been in the lazaret for some years. In this latter group the first patient, who is now in the fourteenth year of his illness, had for one and a half years received intramuscular injections of one-fourth of a grain of perchloride of mercury dissolved in 20 minims of water, which were administered almost continuously for 65 weeks, once a week during some terms and twice a week during other terms. The disease, however, made uninterrupted progress. The second patient received for about four months bi-weekly injections identical with the preceding but the disease did not suffer any modification. The third patient began to take 30 minims of gurjun oil daily in July, 1904; this was gradually increased until he took 300 minims daily. In the middle of March, 1905, he began to take 45 minims of chaulmoogra oil daily in gelatin capsules, and the dose was increased until it reached 270 minims daily. The fourth patient was treated similarly. The fifth patient took free phosphorus and arsenic alternately during terms of about three weeks each. After four months of this treatment it was evident that the paralytic distortions of the fingers had diminished and that the fingers could be more freely and promptly moved by voluntary effort. Chaulmoogra oil was then substituted for the phosphorus and arsenic. The sixth patient was treated with the same drugs but without any evident result. The seventh patient, who was a female, 19 years of age and in the fifth year of illness, had made several attempts to take chaulmoogra oil but without success; the dose never exceeded 30 minims a day. In 1905 she suffered from a secondary infection with staphylococcus pyogenes aureus, attended by superficial ulcerations and serious ill-health. In the first week of 1906 she began to take ten grains of cuprol (a combination of copper with nucleinic acid) twice a day in cachets and a 10 per cent. ointment of cuprol and lanoline was applied to the ulcerations. At the end of August, when the cuprol was relinquished, she was treated with chaulmoogra oil and strychnine. The eighth patient was treated with gurjun oil, chaulmoogra oil, and strychnine. The ninth patient was treated with chaulmoogra oil and strychnine. Another patient, already referred to, after treatment with gurjun oil, chaulmoogra oil, and strychnine, recovered and was discharged from the lazaret.

## EPIDEMIC CEREBRO-SPINAL FEVER.

THE gradual decline in the prevalence of epidemic cerebrospinal fever still continues. In Scotland during the week ended July 27th there were seven deaths from this cause registered in Glasgow, three in Dundee, and one in Leith. In Glasgow the weekly report issued on July 26th showed that there were at that time 50 cases under treatment. In Belfast during the week ended July 27th there were 12 deaths registered as being due to this cause.

## METROPOLITAN HOSPITAL SUNDAY FUND.

THE council of the Metropolitan Hospital Sunday Fund at its meeting on August 1st, after considering the report of the committee of distribution, received a recommendation of the finance and general purposes committees to accept a proposition of the executors of the late Mr. George Herring, that a sum of £30,000 on account of the residuary bequest should be paid over. It is understood that this sum is about equivalent to one year's interest on the bequest, the size of which may be gauged by the fact that the same sum will be added to the collection for distribution yearly. Mr. Herring's magnificent liberality to the Metropolitan Hospital Sunday Fund will keep his name famous for ever among the charitable benefactors of the capital.

## INDIAN HOSPITAL ASSISTANTS.

THE hospital assistants of India are a highly respectable and important body of public servants, numbering several thousands, who for a relatively small wage perform duties requiring both education and intelligence in a manner which is quite beyond praise. Though they belong to various nationalities and divers creeds, including Christianity, they have recently united to establish an All-India Hospital Assistants' Association and to issue a monthly journal which already bids fair to make its mark as a valuable and well-conducted publication, the contents consisting entirely of original matter written by the members themselves and not of transcriptions borrowed, with or without leave, from American and other medical papers. The association is under the patronage of several distinguished officers of the Indian Medical Service who desire to encourage originality of thought in their subordinates and have contributed funds to institute yearly prizes for original theses upon given subjects. This year the subject is "Plague," and Lieutenant-Colonel W. B. Bannerman, I.M.S., Major G. Lamb, I.M.S., and Major W. E. Jennings, I.M.S., have consented to act as judges. The journal for May opens with a paper on Dysentery, which was read before the Madras branch of the association by Mr. P. Vakulabaranam Chettiar. The writer modestly disclaims aiming at originality and calls his contribution a compilation, but nowadays those who produce absolutely original articles are not very numerous, so that he has plenty of company. "Many have written grand and eminent works on this subject," says Mr. Chettiar in his preface, "and I know it would be standing on slippery ground to attempt to write on the same, but I go with the satisfaction of having done something to relieve the suffering humanity, especially the Indians, and something in the shape of a very poor attempt to set forth my collected thoughts and experience in writing for the benefit of my professional brethren." The English language is truly full of pitfalls, but notwithstanding the handicap of a strange tongue Mr. Chettiar has produced a very fair *résumé*, so far as it goes, of modern learning in the matter of dysentery. His article is to be continued, so that further criticism had better be reserved. In addition to the journal of the All-India Hospital Assistants' Association we have also received another monthly publication entitled *The Hospital Assistant*, which has reached the sixth number of its second volume. The editor pathetically inquires, "What are our brethren doing in this matter? Out of thousands of hospital assistants in India how many are ready to spend a paltry sum of Rs. 2 for the sake of this journal, which is conducted in their own interests by a single individual?" Notwithstanding this lamentable state of affairs the little paper is decidedly meritorious, and doubtless deserves a more numerous *clientèle*. As the editor puts it, "Sincerity of work and uprightness of conduct must win in the end."

THE Nettleship medal, founded in 1902 to commemorate the work of Edward Nettleship and to encourage research in ophthalmology, was presented at the annual general meeting of the Ophthalmological Society to Mr. J. Herbert Parsons for his monograph on the "Pathology of the Eye."

Sir James Reid, Bart., M.D. Aberd., has been appointed a director of the Clerical, Medical, and General Life Assurance Society in the place of Sir John Williams, Bart., M.D. Lond., who has resigned.

# THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-sixth annual meeting of this association was held at the rooms of the Medical Society of London on July 25th and 26th, the early part of the meeting being under the presidency of Dr. ROBERT JONES who later inducted to the chair the new President, Dr. P. W. MACDONALD, of the County Asylum, Dorchester.

The first morning was devoted to the internal business of the association. On reassembling the new PRESIDENT delivered his address which consisted principally of an examination of the social aspect of insanity in a purely rural district untouched by the influence of large communities. His inquiry extended over half a century of the history of the county of Dorset, during one-half of which time he had supervised the administration of the county asylum. In the "fifties" there were in the county scores of feeble-minded persons of all ages living free and simple existences in the villages unknown to Blue-book statistics and lunacy laws. But since the "seventies" the weak and defective persons had been gathered into the institutions of the country until the public had become alarmed at the cost of keeping these hordes of persons. 25 years ago the first admissions were in the ratio of 1 to 307 of the population; to-day the rate was 1 to 200. But in making the comparison it was essential to remember that since 1851 the birth-rate of the county had fallen from 30 to 23 per 1000 and that migration had resulted in a net loss in that county of 82,000 persons. The types of insanity shown by first admissions exhibited no startling change, yet the change which did occur was significant of what had been happening in the county. In the agricultural boom of the "seventies" the percentage of mania among the admissions was as high as 65. In melancholia there was an advance from 18 per cent. in the "fifties" to 25 per cent. in the "nineties"; and the increase had been much more pronounced in the decades ending 1896 and 1906 than formerly, and in this he believed that intoxicating causes had played a conspicuous rôle, if only by rendering the individual hypersusceptible to every extraneous influence. But the really important point was the close association between the type of melancholia as met with in Dorset and the all-absorbing question of heredity. The dementias were not so easily dealt with, for ideas had changed and the whole aspect of things had altered in regard to the early dementias. He did not think the only reason for the high proportion of senile cases of dementia in rural communities was the lack of brain activity in those districts. The proportion in that type had risen from 5·8 per cent. in the "fifties" to 8·8 per cent. at the present time. That was not an alarming increase, but what about the residuum? He believed that it was due to causes other than lack of brain activity. The Poor-law authorities in the country districts failed to make provision within their walls for the aged mentally sick and by a process of devolution the Lord Chancellor, through the Lunacy Acts, ordained that those people should be gathered into homes. But in the early dement a different condition of things was met with. The dementia præcox school ridiculed the homely terms "primary" or "early" dementia and some used "adolescent insanity" in preference to either. The question of primary dementia was full of interest in any attempt to study the phases of mental disease as exhibited by the admissions from the districts under consideration. In Dorset that class of case had advanced from 1 per cent. to 3 per cent. of the first admissions during the period under review. That was an alarming increase of the most hopeless type of mental disease. Probably educational pressure, unhealthy environment, and passionate indulgence in various directions were important side issues, but the increase was really grafted on to an instability associated with the scourge of heredity. There had been an increase of 2 per cent. in general paralysis but it was not one of the common types in rural districts. The proportion of cases of epilepsy with congenital defect among the admissions had, however, risen from 4·7 per cent. to 8 per cent. during the fifty years, and that was one of the problems to be solved in any attempts to grapple with the question of race degeneracy. For the increase of these congenital cases the social life of depopulated villages was answerable. Summed up, it meant that melancholia, early dementia, and congenital defect—especially the last—had increased beyond comparison with any increase in the admissions, and the gravamen of those changes lay deeply buried in the social life of the people and help or relief must come from the root. In reference to the connexion between occupation and insanity he said that the increase had been in the group "no occupation," which had advanced from 6 per cent. to 12 per cent. His inquiry had established no clear connexion between certain occupations and special types of insanity. Still, there was an interesting state of things in reference to occupation and melancholia. The lack of interest and of direct stimulus to thought in large numbers of the peasant homes in Dorset had resulted in a state of gloom and despondency likely to be followed by melancholia, especially in people badly nourished. Whereas formerly the unmarried woman was engaged in laundry and dairy work, much of that was now carried on in factories and the simple peasant was therefore driven to eke out an existence in a variety of ways, many of which were not conducive to health. With regard to intemperance he included in that term far more than the abuse of alcohol, and suggested that the total abstinence school should greatly enlarge their list so as to include black tea and the pocket phial. He did not regard alcohol as even one of the greatest causes of insanity. Intemperance in alcohol could not be proved to account for more than from 3 per cent. to 5 per cent. of all cases of insanity in the county of Dorset; yet the Dorset peasant was as fond of his cider or ale as was the Lancashire miner. Dorset had one of the highest county rates in insanity, but one of the lowest in regard to alcohol as a factor. Dealing next with heredity, he said that in the sixtieth report of the English Lunacy Commission Dorsetshire was credited with the highest percentage of heredity as a factor in the production of insanity. His 50 years' inquiry led him to say that heredity was the main predisposing cause of insanity, and that the proportion of cases of hereditary origin had increased until it was now between 50 per cent. and 60 per cent. He concluded by urging the universal dissemination of a knowledge of those laws and facts which were the basis of personal well-being and expressing his high appreciation of the institutions for the insane in the United Kingdom.

Dr. G. H. SAVAGE proposed, and Dr. T. S. CLOUSTON seconded, a hearty vote of thanks to the President for his address, which was duly acknowledged.

Dr. C. C. EASTERBROOK (Ayr Asylum) read an elaborate contribution, illustrated by photographs, on the Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air. He discussed the advantages and disadvantages of the outdoor exercise treatment of active insanity and those of the indoor rest treatment of it. He advocated an initial period of rest in bed for newly admitted patients of asylums. He had had much success from the outdoor rest treatment of active insanity in all newly admitted patients and in resident patients during relapses or phases of active insanity, including the difficult and dangerous cases. At Ayr there were both isolation verandahs and association verandahs. He contended that the open-air rest treatment of active insanity secured the advantages without the disadvantages of the outdoor exercise and indoor rest systems combined. The idea had originated from the open air treatment of the tuberculous insane, and it not only quickly improved the general condition and appearance but the regularity of the bowels, so that laxatives were but little needed.

The paper was very fully discussed by the President, Dr. D. Yellowlees, Dr. W. J. MacKeown, Dr. Albert Wilson, Dr. Thompson, Dr. Clouston, Dr. E. Goodall, Dr. Stoddart, and Dr. C. Hubert Bond, and Dr. Easterbrook replied.

In the evening the members and guests dined in the Whitehall Rooms, Hôtel Métropole, under the presidency of Dr. Macdonald, when there was a large and distinguished company. Among the guests were Lord Digby, the Bishop of Salisbury, the Ven. Leslie Dundas, Sir James Crichton-Browne, Dr. D. Nicolson, Sir Victor Horsley, Sir John B. Tuke, M.P., Sir Henry Craik, M.P., Sir R. Douglas Powell, Sir Patrick Manson, Mr. Thomas Hardy, Professor T. Clifford Allbutt, Professor D. Ferrier, Colonel Mount Batten, Dr. John Macpherson, Mr. J. Bland-Sutton, Dr. H. W. Hurd (Baltimore), and Lieutenant-Colonel Symes.

After the usual loyal toasts had been warmly pledged, Dr. Clouston proposed "The Houses of Parliament," and pleaded for a system of pensions for asylum medical officers as in the case of other civil servants. The toast was responded to by Lord Digby and Colonel Williams, M.P. "The Medico-Psychological Association" was proposed by Sir Victor Horsley who, in paying a high tribute to the pioneer work done by the association, referred to the recent occasion on which he acted as spokesman of a medical deputation to a Minister, when he was told that his request was tendered in a peremptory manner. He justified his action and contended that such was shown to be necessary by the history of similar efforts. The President replied. "Science and Sister Societies" was eloquently proposed by Sir James Crichton-Browne. He said that the association might well do honour to science, for during his 45 years' membership it had advanced in usefulness just in proportion as it had become scientific. Indeed, in the inmates of asylums one could sometimes see the lurid reflex of great and glowing orbs of science and the hallucinatory images kept pace with science itself. Professor Clifford Allbutt replied, and after a graceful tribute to the work being accomplished by the association he lamented the fact that there was no Ministry of Public Health, despite the enormous importance of the subject to the community. He pleaded for a proper correlation of the various agencies of the kind to be concentrated in a definite Government department. "The Visitors" was proposed by Dr. Urquhart, and responded to by Sir Richard Douglas Powell, Dr. Macpherson, and Dr. Hurd (Baltimore), the last named gentleman acknowledging the indebtedness which American psychologists were under to the members of that association. "The President" was proposed in highly eulogistic terms by Dr. Nicolson and Dr. Macdonald replied.

The meeting was resumed on Friday, when Dr. Clouston introduced a discussion on "Psychiatry as a part of Public Medicine." He urged that preventive psychiatry should be made a part of general hygiene and suggested that the Local Government Board should extend its sphere to include that, the speech constituting a strong plea for coöperation for the good of the community. The discussion revealed a unanimity of view as to the importance of the subject but differences as to the remedying of the defect.

At the afternoon sitting two remarkable papers were read, one by Dr. Wilson (a clinical demonstration) on "The Psychology of Crime," and the other by Dr. W. Ford Robertson and Dr. G. Douglas McRae on "Observations on the Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Antisera." Dr. Wilson exhibited a number of notorious criminals who under the agency of the Salvation Army had become reformed. He traced their histories and achievements and dealt with the whole subject in a very thorough manner. After a few words of appreciation from the President, Dr. Savage, and Dr. Clouston, the discussion was by agreement deferred until the November meeting of the association. Dr. Ford Robertson's and Dr. McRae's contribution, which was illustrated with microscopic slides, was discussed by the President, Dr. Clouston, Dr. Mickle, Dr. Goodall, Dr. Dixon, Dr. Rows, Dr. Orr, and Dr. Mercier, and Dr. Ford Robertson and Dr. McRae replied. In closing the meeting the President said the importance of the last communication was equal to that of any contribution which had ever been brought before the association.

# OPENING OF THE NEW PREMISES OF THE CITY OF LONDON LYING-IN HOSPITAL.

The new premises of this hospital were recently opened by Her Royal Highness the Princess Christian of Schleswig-Holstein in the presence of a representative company. The charity was founded in 1750 and the necessity for rebuilding the hospital arose out of the construction of a tube railway station opposite. The construction of such stations, as pointed out by The Lancet[1] prior to the opening of the Central London Railway, must inevitably be attended with damage to adjacent property when the subsoil is of a porous nature or contains much water, and our foreboding was justified.

From its position the patients of the hospital are drawn from the purlieus of St. Luke's, Hoxton, Clerkenwell, Shoreditch, and Bethnal Green, perhaps the poorest and most densely crowded district in London. During the past ten years—1897 to 1906—5903 women were delivered in the hospital, giving birth to 5976 infants, 142 of whom were twins while three were triplets. The average weight of each child at birth was between 7 and 8 pounds; only one child reached 12 pounds, weighing 12 pounds 2 ounces. Of outdoor patients during the same period delivered by the hospital midwives at the patients' homes, 21,114 gave birth to 21,394 infants, of whom 272 were twins, 12 were triplets, and four were the result of one birth. The physique of the patients generally is very poor.

The work of rebuilding cost £36,000 and has absorbed all available funds, leaving the management encumbered with a debt of £29,000, but the money has been thoroughly well spent as the following detailed description of the new buildings will show. The exterior of the new building is an unassuming elevation of red brick and terra-cotta; though occupying a prominent position at the north-west corner of the City-road and Old-street it is dwarfed by being placed between the huge blocks of the Leysian Mission and St. Luke's Hospital. The architect, Mr. Collins, R.I.B.A., is to be complimented in that he has successfully devoted his talent and the money placed at his disposal to secure efficiency rather than an imposing elevation and elaborate architectural details.

On plan each block of wards radiates from a common centre formed by the administrative block to which they are connected by short corridors; by this arrangement the maximum amount of light and air is obtained and each block isolated; indeed, each ward may be said to be the same, there being a well-ventilated space between the ceiling of one and the concrete floor of the ward above. There are eight ordinary and two labour or operating wards, an isolation ward with offices, only accessible by crossing an open space on the roof, also a small detached ward for cases of acute mania, which is especially provided with means for air flushing. In addition there are bathrooms, waiting- and consulting-rooms, besides the administrative block. Every new hospital adds something in advance of its predecessor in the direction of aseptic construction and the present instance forms no exception. Simplicity of detail and the absence of facilities for the lodgment of dust predominate; the doors, formed of one solid piece of teak, are without joints or mouldings. The ceilings, walls, and floors present one continuous unbroken surface and all angles are rounded. The steam coils swing out from the walls for cleaning. There is a specially constructed external aseptic shoot for soiled linen. Incinerator, steriliser for clothes, &c., all are there. The lift, which is electric and automatic, is capable of taking a bed. There are the usual ventilated cupboards for the reception of bed-pans the contents of which await inspection. The operating room skylight is provided externally with a large plate-glass shield, the open air-space between being fitted with a steam coil to prevent cold air falling on the operating table; it also protects the skylight from condensation and snow. The windows are of special construction so as to obviate draught and the accumulation of dirt. The subjects of ventilation, protection against fire, and the sanitary appliances have received great attention from the architect and are deserving of more extended notice.

---

[1] The Lancet, May 12th, 1900, p. 1373 and p. 1385.

*Ventilation.*—140 feet of floor space per bed have been provided, with an allowance of 2000 cubic feet air space, six beds being placed in each ward. This is a liberal allowance when compared with some general hospitals, but here each bed is accompanied by a cot, so that the allowance to the patient is somewhat reduced, while the presence of students renders the 140 feet of floor space desirable. Four of the wards are ventilated by means of electric motors, working four especially powerful fans in connexion with a system of metal flues. A separate flue is connected with each ward at the ceiling level and regulated to extract 36,000 cubic feet of air per hour (though capable of extracting a much larger quantity), thus changing the air of each ward three times every hour. There being six beds in each ward mother and child have an allowance of 6000 cubic feet of air per hour from this source alone, while in addition to this there is the cross ventilation from the windows. The air flues are fitted with inspection chambers for the collection and removal of any dust. In the four remaining wards the air is extracted by a different process; certain specially constructed glazed 12-inch flues are carried up in the thickness of the wall terminating in short turrets, which last are formed to create an upward current in the flues, independently of the direction of the wind. Into each of these flues a smaller one is carried from the ward to be ventilated, bending upwards a short way into the larger one, where a vacuum can be created by means of a jet of steam admitted in the lower part. It has been found possible to change the air of these wards within ten minutes. The labour wards are ventilated by means of the furnace shaft of the boilers. All ventilating shafts are distinct one from the other. Only in the isolation wards situated on the roof, is natural cross ventilation relied upon, augmented by short flues carried up from the ceiling, fitted with talc louvres to counteract any down draught. In every ward fresh air is admitted at four points through external gratings at the floor level; here it is filtered through worsted screens. The use of worsted threads was suggested by the hairs present in the nose, which forms nature's air filter. The incoming air is heated as may be necessary by passing through a steam-jacketed coil, where by a simple contrivance of covered channels and baffle plates the air can be deflected at varying temperatures to deliver under each bed and distributed generally. The whole system is well under control, while every part, coils included, is accessible for cleaning. A system of telephones communicates with the boiler house from each ward, where means of regulating heat and ventilation are under the control of the engineer.

*Fire.*—The building is of the usual fire-proof construction, the use of all inflammable material being reduced to a minimum, the floors being of a new cement composition and jointless. They are impervious to wet and are capable of receiving considerable polish, are soft to the tread and fairly warm, resembling asphalte, while the red colour adds a look of comfort to the wards. It would seem an ideal material for the purpose, but time is required to prove if it fulfils its promise. The whole of the roof is accessible from two iron external staircases and is connected throughout by guarded causeways. Teak doors of ample size lead to the staircases from each corridor and are fitted to open from the inside with push-bar latches and externally by a master key. These staircases not only offer a ready means of escape in the event of a fire but of access to any part of the building for the engineer or workmen without having to pass into any other part than the one desired, not an inconsiderable advantage. There is a complete system of hydrants, each one of which is, sealed by the Metropolitan Water Board which imposes a charge of 20*s.* for the fracture of any seal, and this seriously militates against the efficiency of the hospital fire staff and the security of the inmates. A less charge should suffice to permit the occasional testing of the hydrants and to accustom the staff to their use.

*Sanitary work.*—This has evidently been planned and executed with thought and care. New departures principally consist of the following:—The sinks. These are fixed away from the walls and are almost oval in shape; every portion inside and out is rounded and accessible for cleaning. They are made of exceptionally good white glazed porcelain. The floors being impervious there are no overflows, neither are there any traps to the sink wastes, which are short, discharging into white glazed open channels let into the floor, and these discharge externally. The gun-metal valves are operated by the foot, the elbow, or the knee on the pattern of Messrs. Davis and Bennett who are responsible for the plumbers' work. In the isolation ward the pipes are independent of those in other parts of the building. The infants' washing wards are specially warmed and are fitted with a double row of small white porcelain baths down the centre. They have the same finish as the sinks and are fixed some 2 feet 3 inches from the floor. Each pair of baths is supplied with hot and cold water by a rotating crane douche. The nurse sits at the bath having both hands free, the valves being controlled by a pedal and the waste by a knee lever. The labour wards are fitted with two similar baths for hot and cold water for use in cases of suspended animation occurring at birth. The pipes passing through these wards are fitted externally with a very ingenious air-trap charged with glycerine preventing air from passing along outside the pipe from ward to ward. The closets, baths, lavatories, and ward sinks are all of the most approved design.

*Water-supply.*—A store-room on the roof contains two large iron tanks connected together to hold two days' supply, which is constant from the main. The down services are drawn from the tank at the farthest point from the inlet to insure circulation, but in the event of repairs the service can be diverted and drawn from either tank or both tanks can be shut off and the rising main and down services short-circuited. The waste-preventing cisterns supplying the closets, &c., are almost devoid of accessories. They are fixed clear of the wall by two long iron lugs cast on the cistern, which lugs are built into the wall in place of brackets, and the whole finished in white porcelain enamel. The drains have no special feature of interest. They are of heavy cast iron and automatically flushed from their upper end, thoroughly ventilated, and disconnected. Every soil pipe is fitted with brass inspection eyes at each branch or bend and some special copper draught excluders fixed on the overflow pipes supersede the usual flap valve.

The architect, the builders, and others concerned have produced a building which is admirably adapted for the purpose intended. It remains for the management to see that the several provisions are rightly understood and properly maintained. Especially is this the case with the ventilation and fire appliances, it being important that the air-flues and screens should be kept clean and the air-traps charged with glycerine. The swing coils also should be frequently moved. Fire drill should be maintained and dummy patients carried down the external staircases and beds run from the wards to the nearest landing as would be necessary in the event of a fire.

To celebrate the completion of his work the architect promised a donation to the first child born within it. The mother, however, was more than equal to the occasion and brought forth twins!

## EPSOM COLLEGE.

FOUNDER'S day was commemorated at Epsom College on Saturday, July 27th, special importance being attached to the function this year in consequence of the dedication of a handsome jubilee memorial window in the College chapel. The attendance of parents of boys and of friends of the College was very large and it was gratifying to note that there were many old Epsomians amongst the visitors, several of whom entered at the opening of the school in 1855. The Dean of Winchester dedicated the window and gave away the chief prizes, and amongst those present were Sir William S. Church (chairman of the council), Mr. Henry Morris (President of the Royal College of Surgeons of England), Mr. Stanley Boyd, Dr. Clement Godson, Dr. F. de Havilland Hall, Mr. Reginald Harrison, Mr. W. F. Haslam, Sir Constantine Holman, Mr. H. W. Kiallmark, Dr. F. Needham, Mr. Frederick Propert (the only surviving son of the founder, who gave away the "Propert" prize), Dr. Guthrie Rankin, Mr. C. L. Smiles, and Dr. Frederick Taylor. The proceedings commenced with a service in the chapel, in the course of which the Head Master requested Mr. Morris, treasurer of the College and an old Epsomian, to unveil the window.

Before doing this Mr. MORRIS addressed the congregation as follows: "Founder's day which annually brings us here together, is this year a special occasion, because of the Jubilee Memorial window which is now about to be unveiled, and which immediately afterwards will be dedicated with all the sacred ceremony of a religious rite. The thought of celebrating the Jubilee of the College by beautifying the chancel of our chapel by this new East window was originated, I believe, by Mrs. Smith-Pearse, and certainly she has bestowed a great deal of time and labour in accomplishing her object. The idea was that the window should be the product of an appeal made chiefly, if not exclusively, to old Epsomians, and this idea has been fairly well realized. The window itself will, I think, be regarded by all as a tribute worthy of the occasion, as a great ornament to the chapel, and as a pictorial expression of the veneration and reverence suitable to the solemnity and sanctity of a House devoted to Divine service. The window and the sentiment which it embodies would have delighted the spirit of the humane and warm-hearted founder of the College. As a work of art, in its conception and execution, it cannot fail to be a permanent source of gratification and satisfaction to the donors; whilst it will recall to the minds of those who examine it, and think upon it, examples in life of self-sacrifice and courage, of benevolence and fortitude, of charity and loving-kindness. May we not expect that this beautiful window will be an incentive to, and a forerunner of, the reconstruction of the body of this chapel in a size of greater dimensions, and in a style consistent with the eastern or chancel end of the chapel. May we not hope that present and future Epsomians looking upon this window will see there a witness of the fact that the old Epsomians of the pre-jubilee period came back to their *alma mater*, as it were, to erect it as an emblem of the love and gratitude they carry in their hearts towards their old school. May we not also express the hope that those here now and those who will follow in the times to come will find in the subjects which are portrayed in this window promptings to guide them rightly in their careers in life. In the words of our president, Earl Rosebery, which he used in an address delivered several years ago when referring to the thousands of emigrants who annually leave our shores to settle in different parts of the world, may we not express the hope that those who now and in the future come to study in this school, and to worship in this chapel with this superb window in front of them may pass forth from here as a broad and bright and beneficent river of life, fertilising as the Nile, beloved as the Ganges, and sacred as the Jordan; and that like the fabled fountain Arethusa, which passing under the sea from Greece into Sicily yet retained its original source in Arcadia, so the old Epsomians of the future may be able to trace back the source of their useful and honourable careers to the impressions they received at school, and to the inspirations they derived from the contemplation of such actions and motives as are illuminated in the window which I will now unveil to you."

After the unveiling of the window the Dean of Winchester dedicated it "To the honour and glory of Almighty God and in gratitude for all His mercies vouchsafed to this school during the 50 years since it was founded......," in accordance with the form of service fixed for the occasion.

The window has been erected at a cost of £700 by contributions from old Epsomians and other friends of the school in commemoration of the jubilee of the opening of the College which was celebrated two years ago. Mr. J. B. Lamb, the secretary of the College, has kindly given us the following full description of it:—

The window measures 21 feet 6 inches in height and 19 feet 6 inches in width, and has been made by the firm of Messrs. Powell and Sons, of Whitefriars, under the supervision of Mr. James Powell who arranged the design. General satisfaction was expressed by the numerous visitors who inspected the window, and it was felt that the artists had dealt very satisfactorily with a difficulty resulting from the deep colour of the brickwork inside the chapel, this heaviness having been in a great measure overcome by concentrating the varying tints of red in the centre of the window, retaining the lighter colours for the outside parts. The central subject is the divine love of man as proved by the Atonement, Christ being represented as hanging on the cross, whilst the distant walls and towers of Jerusalem, lighted by the deep rays of the setting sun, are symbolical of His death. On the left hand side of the main subject are figures of Melchizedek, Solomon, Noah, Daniel, and Job, and in front there is a group of boys, including Joseph as a shepherd boy, Isaac carrying the wood for the sacrifice, and the boy Samuel. On the opposite side are figures of St. Stephen, St. George, St. Swithun, Bishop of Winchester, St. Edmund, King and Martyr, and St. Alban; and in front there is another group of boys, including St. Pancras, St. Cuthbert as a shepherd boy, and a kneeling figure of St. Prisca. St. John is shown at the foot of the cross about to lead away the Blessed Virgin, and behind are groups of Roman soldiers.

One interesting and uncommon feature is specially worthy of notice—namely, the eight seraph angels shown on winged wheels, two above and six below the cross and crown in the centre quatrefoil, the idea for these having been taken by Mr. Powell from the fourteenth century glass in Hitcham Church, Buckinghamshire. In the bases of the three central lights the conquered dragon is represented, symbolical of the victory of the cross of Christ over sin. In the outside lights there are single figures of healers from the Bible, on the left being Moses and Elijah, representatives of the Old Testament, and on the right St. Luke and St. Paul, representatives of the New Testament. Moses is shown as holding up the brazen serpent for the healing of the Israelites, whilst above is shown the angel in the burning bush. Elijah is shown with the widow's son whom he restored to life, and above there is the angel that directed the ravens to bring him sustenance. St. Luke, the "Beloved Physician," is shown holding the rod of Æsculapius in his hand, his emblem, the bull, being behind him, whilst above is the angel that appeared to Christ in the garden to strengthen Him during His agony; over the figure of St. Paul is to be seen the angel who showed to St. John the river and trees of life for the healing of the nations. In the Predella subjects to the four side lights are shown two incidents from the Old Testament referring to the boyhood of David, the ancestor of Christ, and two from the New Testament relating to the boyhood of Christ Himself. These four subjects have been wisely selected for the purpose of keeping before school boys the value of practical virtues, those chosen being "Courage," represented by David killing the lion which attacked his father's sheep; "Brotherly Kindness," shown by the love of Jonathan for David; "Wisdom," the incident selected being Christ in the Temple in the midst of the doctors; and "Obedience," Christ being shown in the carpenter's shop at Nazareth, thus ennobling manual work. In the tracery lights over the four side lights are coats of arms, the four principal ones being those of the King as patron of the College, of the Bishop of Winchester as Visitor, of the Earl of Rosebery as President, and of Mr. Propert as Founder. The smaller coats of arms, representing the school houses, are those of the late Dr. William Carr, who was a zealous honorary local secretary (Carr house); of the late Mr. Robert Forest, who was a generous benefactor (Forest house); of the late Earl Granville, who for many years held the office of President (Granville house); of the late Sir Erasmus Wilson, who presented to the College the head-master's house (Wilson house); of the late Sir Joseph Fayrer, who was for many years chairman of the Council (Fayrer house); and of Sir Constantine Holman, M.D. St. And., who held the office of treasurer for 19 years and is a Vice-President of the College (Holman house).

At the distribution of the prizes the head-master gave his customary report on the working of the school year and drew attention to the honours which had been won directly from the school since the last Founder's day. Among these are an open junior studentship in classics at Christchurch College, Oxford; an open exhibition in natural science at Clare College, Cambridge; and open scholarships at St. Mary's and Charing Cross Hospitals. In distributing the chief prizes the Dean of Winchester selected as the subject of his address to the boys the importance of cultivating habits of observation and imagination and of training the mind, reminding the boys that whilst few persons had ability all could with perseverance acquire a trained mind. His impressive address was greatly appreciated and was warmly commended by the treasurer who moved a vote of thanks to the speaker. During the afternoon the cadet corps paraded and there was a gymnastic display in the college grounds. Plans of the important alterations and additions to the college buildings which are about to be commenced were on view, the actual places where the buildings are to be erected being pegged out with flags. These extensions comprise a new science block containing physical and biological laboratories and class rooms, a lecture room, three more general class rooms, and a day-boys' common room; also further lavatory and water-closet accommodation; with covered ways between the present covered way and the lavatory block, &c., and between the present chemistry block and the new science block.

# ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 25th, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The PRESIDENT announced that the Bradshaw lecture would be delivered on Nov. 5th by Sir James Barr on Pleural Effusions and their Treatment and the FitzPatrick lectures on Nov. 7th and 12th by Dr. P. H. Pye-Smith on the History of Medicine.

The following nominations to lectureships during 1908 and

1909 were then announced: Dr. H. S. French to deliver the Goulstonian lectures, Sir James Sawyer the Lumleian lectures, Dr. Pye-Smith the FitzPatrick lectures, Professor E. A. Schäfer the Oliver Sharpey lectures, and Mr. L. S. Dudgeon the Horace Dobell lectures for 1908, and Dr. W. S. Lazarus-Barlow the Croonian lectures for 1909.

Arthur Shadwell, M.A., M.D. Oxon., and Thomas Macrae, M.D. Toronto, who were elected to the Fellowship on April 25th, were admitted as Fellows of the College.

The following gentlemen having passed the required examination were admitted as Members of the College: Arthur Wellesley Falconer, M.D. Aberd.; Vincent Sutherland Hodson, M.B. Oxon.; Bernard Hudson, M.A., M.B. Cantab., L.R.C.P.; Harold Charles Corry Mann, M.D. Lond., L.R.C.P.; Reginald Henry Miller, M.D. Lond., L.R.C.P.; Harold Pritchard, M.D. Lond., L.R.C.P.; Ernest Athole Ross, M.D. Cantab.; George MacIver Campbell Smith, M.A., M.B. Aberd.; Frank Edward Tylecote, M.D. Vict.; and Samuel Alexander Kinnier Wilson, M.A., M.B. Edin.

Licences to practise physic were granted to 114 gentlemen who had conformed to the by-laws and regulations and passed the required examinations.

Diplomas in Public Health were granted to 13 successful candidates.

Communications were received from:—

1. The London County Council thanking the College for the report of a committee convened to discuss the notification of cases of posterior basic meningitis and cerebro-spinal fever and inclosing certain recommendations made by the Public Health Committee of the London County Council as a result of that report.

2. The committee of the International Congress on Psychiatry, Neurology, &c., to be held in Amsterdam from Sept. 2nd to 7th next, inviting the College to send delegates.

3. Sir Dyce Duckworth, representative of the College at the funeral of Sir Joseph Fayrer.

4. Dr. G. A. Heron, representative of the College at the funeral of Dr. Robert Barnes.

These were received and ordered to be entered on the minutes.

5. Dr. James Ramsay of York, offering to the College an autotype copy of a portrait of James Atkinson, 1759–1839, author of Medical Bibliography, letters A—B. It was directed that the thanks of the College should be given to Dr. Ramsay for his gift.

6. The Registrar of the General Medical Council, communicating the revised recommendations of the Council with regard to the instruction of students in practical midwifery. This was received, entered on the minutes, and referred to the Committee of Management.

7. The secretary of the Royal College of Surgeons of England (3) reporting proceedings of its Council on May 9th, June 13th, and July 11th. These were received and entered on the minutes.

The following Censors, other College officers, and examiners were elected on the nomination of the President and Council:—Censors: Dr. David Ferrier, Dr. John Mitchell Bruce, Dr. Thomas Clifford Allbutt, and Dr. James Frederick Goodhart. Treasurer: Sir Dyce Duckworth. Emeritus registrar: Sir Henry Alfred Pitman. Registrar: Dr. Edward Liveing. Harveian librarian: Dr. Joseph Frank Payne. Assistant registrar: Dr. Oswald Auchinleck Browne. Elected members of the library committee: Dr. Norman Moore, Dr. William Osler, Dr. Humphry Davy Rolleston, and Dr. Charles Arthur Mercier. Curators of the museum: Dr. William Cayley, Dr. William Henry Allchin, Dr. Seymour John Sharkey, and Dr. William Hunter. Finance committee: Dr. David Bridge Lees, Dr. Francis Henry Champneys, and Sir Edwin Cooper Perry. Examiners: Chemistry—Mr. John Millar Thomson, F.R.S., and Mr. George Senter, Ph.D., B.Sc. Physics—Dr. Dawson F. D. Turner and Mr. Alfred W. Porter, B.Sc. Materia Medica and Pharmacy—Dr. Cyril Ogle, Dr. Joseph John Perkins, Dr. Robert Arthur Young, Dr. James Purves Stewart, and Dr. Otto Fritz Frankau Grünbaum. Physiology—Dr. William Dobinson Halliburton and Dr. Ernest Henry Starling. Anatomy—Dr. Peter Thompson. Medical Anatomy and Principles and Practice of Medicine—Dr. Joseph Arderne Ormerod, Dr. Sidney Harris Cox Martin, Dr. William Collier, Dr. Hubert Montague Murray, Dr. Norman Dalton, Dr. Humphry Davy Rolleston, Sir Edwin Cooper Perry, Dr. Frederick John Smith, Dr. Arthur Pearson Luff, and Dr. Walter Essex Wynter. Midwifery and Diseases Peculiar to Women—Dr. John Phillips, Dr. Herbert Ritchie Spencer, Dr. William John Gow, Dr. Thomas Watts Eden, and Dr. George H. Drummond Robinson. Public Health—Part I., Dr. William Henry Willcox; Part II., Mr. Alexander Grant Russell Foulerton. Murchison Scholarship—Dr. Seymour John Sharkey and Dr. William Hale White.

The Baly medal was awarded to Dr. Ernest H. Starling, F.R.S., Jodrell professor of physiology, University College, London, as having pre-eminently distinguished himself in the science of physiology.

A report was received from the representative of the College on the General Medical Council on the proceedings of the Council during its session in May last. This was adopted and directed to be entered on the minutes.

On the motion of the REGISTRAR, seconded by the SENIOR CENSOR, the following by-law was enacted for the first time, viz.:—

> That Daniel Colquhoun, M.D. Lond., and George Edward Rennie, M.D. Lond., elected Fellows on April 25th, residing in New Zealand and Australia respectively, be admitted *in absentiâ*, any by-law to the contrary notwithstanding.

The REGISTRAR moved for the first time that alterations be made in certain by-laws relating to Licentiates to make them conformable to the revised regulations of the Conjoint Board, adopted on April 25th last. This was seconded by the SENIOR CENSOR and carried.

On the recommendation of the committee of management Dr. H. H. Tooth and Mr. A. G. R. Foulerton were appointed assessors to the examinations of the London School of Tropical Medicine for the year ending June, 1908, and the following institutions which had been visited by a member of the committee and reported as fulfilling the requirements of the board were added to the list of institutions recognised by the examining board in England for instruction in chemistry and physics: Municipal Technical School, Birmingham; Alleyn's School, Dulwich; and Aldenham School, Elstree.

The quarterly report of the College finance committee, the annual report of the library committee, and the annual report of the curators of the museum were received and adopted.

A list of books and other publications presented to the library during the past quarter was submitted and the thanks of the College were directed to be conveyed to the donors.

The quarterly report of the examiners for the Licence on the results of the examinations in April last was received and adopted.

The PRESIDENT then dissolved the Comitia.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the committee reference was made by the chairman to the recent death of Sir William H. Broadbent, the President, and a resolution was passed to express the committee's deep regret and sympathy and to record its sense of the invaluable services rendered by him to the Fund. The banking account was reported to show a deficit and it was therefore necessary, having regard to the urgent nature of the applications, to draw upon a small reserve fund created after the last special appeal. No less than 32 cases were considered and grants amounting to £256 were voted in relief, one applicant only being passed over. The sums given were in most instances smaller than usual and much disappointment has consequently been caused. Appended is an abstract of the cases assisted:—

Daughter, aged 62 years, of late M.D. St. And. who practised in Devonshire. Only income an annuity of £11 and has been obliged through ill-health to give up post as companion. Voted £12.

Widow, aged 71 years, of M.R.C.S. Eng., L.R.C.P. Edin. who practised in Lancashire. Is at present penniless, but has a chance of receiving an allowance if certain unavoidable expenses can be met. Voted £20.

Daughter, aged 66 years, of late M.R.C.S., L.S.A. who practised in Wales. Has a small annuity and a little help from relatives, but means are insufficient to bear the unavoidable expenses of moving from unsuitable lodgings. Voted £2.

Widow, aged 61 years, of M.D. Edin. who practised in Liverpool. No income; a small weekly allowance received from a Lancashire benevolent institution will shortly cease. Health delicate. Two children, unable to help. Voted £12.

Widow, aged 50 years, of M.B., C.M. Aberd. who practised in Fifeshire and has recently died from pulmonary tuberculosis after a long illness. Expects to have an income of about £20 a year and proposes to take boarders. Three children, the eldest 13. Voted £12.

Widow, aged 37 years, of M.B., C.M. Aberd. who practised in Pembrokeshire. Quite unprovided for at recent death of husband. Slight.

help from relatives and is endeavouring to obtain boarders. Two children, aged nine and seven years. Voted £5.

Widow, aged 67 years, of M.R.C.S. Eng. who was a surgeon in the Indian Emigration Service. No income, no children. Voted £12.

Widow, aged 51 years, of M.R C S., L S.A. who practised in Lincolnshire and London. No income; a little assistance from a struggling son-in-law; children unable to help. Voted £12

Widow, aged 62 years, of L.S.A. who practised in Derbyshire. No income, dependent on a son earning a small weekly wage. Health very indifferent. Relieved six times, £66. Voted £12.

Widow, aged 56 years, of L.R.C.P. Lond. who practised in Wales. Income £13 a year and receives a little help from a Masonic charity. Relieved twice, £10. Voted £5.

Widow, aged 62 years, of M.R.C.S. who practised in Liverpool. Earns a few shillings a week by giving music lessons. Relieved nine times, £77. Voted £5.

Daughter, aged 26 years, of late M.D. who practised in Middlesex. Physically and mentally unable to learn a living. Relieved twice, £15. Voted £5.

Daughter, aged 57 years, of late M.R.C.S., L.S.A. who practised in Hants. Income £15 a year and receives a little help from brothers. Failing eyesight interferes with needlework, by which applicant has supplemented her small means. Relieved twice, £12. Voted £5.

Daughter, aged 37 years, of M.D. who practised in Gloucestershire. Has been a cripple for many years and recently has been compelled to incur some extra and quite unavoidable expenses. Relieved twice, £12. Voted £5.

Daughter, aged 39 years, of late M.D. Edin. who practised in London. No income; is a governess but finds increasing difficulty in obtaining posts. Relieved six times, £25. Voted £5.

Daughter, aged 37 years, of late L.F.P.S. Glasg. who was a surgeon in the Royal Navy. Is a nurse but has been incapacitated for nearly two years and for several months will only be allowed slight and occasional occupation. Relieved once, £12. Voted £5.

Widow, aged 53 years, of M.B. Cantab. who practised in London. No income; endeavours to support herself by washing, needlework, &c. Slight help from children, three of whom are in service. Relieved four times, £53. Voted £12.

Daughter, aged 55 years, of late M.R.C.S., L.S.A. who practised in Buckinghamshire. Income £5 a year; does a little teaching but earnings decrease each year. Relieved six times, £68. Voted £5.

Widow, aged 38 years, of M.R.C.S., L.R.C.P. who practised in London. No income; supports herself as a working housekeeper, but earnings are insufficient to cover unavoidable expenses for herself and two children at institutions. Voted £5.

Widow, aged 57 years, of L.S.A. who practised in Yorkshire. No income; no children; unable to get work; health indifferent. Relieved once, £5. Voted £5.

Widow, aged 55 years, of L R.C.P., L.R.C.S. Edin. who practised in Staffordshire. Income less than £10 a year; slight help from a brother-in-law. Two children, aged 16 and 12 years. Relieved twice, £20. Voted £10.

Widow, aged 76 years, of M.R C.S., L.S.A. who practised in Buckinghamshire. Has a small income, but insufficient for the maintenance of herself and four children, three of whom are deaf and dumb and one epileptic also. Relieved five times, £40. Voted £5

Widow, aged 60 years, of L F.P.S. Glasg. who practised in Glasgow. Only income £10 a year from a charity. No children; broken down in health. Relieved five times, £50. Voted £10

Widow, aged 67 years, of M.D. Aberd., M.R.C.S. who practised in London. No income; slight help from children. Relieved six times, £78. Voted £12.

Widow, aged 61 years, of L.R.C.P., L.F.P.S. Glasg. who practised in Sunderland. Only income a small annuity. Children unable to help. Relieved ten times, £106. Voted £10.

Widow, aged 63 years, of L.R.C.S., L.R.C.P. Edin. who practised in London. No income; dependent on earnings from needlework. Relieved once, £10. Voted £10.

Daughter, aged 61 years, of late L.S.A. who practised in Sunderland. Has a small annuity and is obliged to help an invalid sister. Relieved eight times, £72. Voted £10.

Daughter, aged 63 years, of late L S.A. who practised in London. No income; receives a home in exchange for services and a small payment. Relieved once, £10. Voted £10.

Daughters, aged 70 years and 66 years, of late L.R.C.P., L.S.A. Edin. who practised in Clackmannan. Have maintained themselves for many years since father's death but now dependent on small pensions amounting to £35 a year. Relieved once, £18 Voted £10.

Widow, aged 46 years, of L.R.C.P., L.R.C.S. Edin. who practised in Sheffield. No income; dependent on a son earning small wages as a labourer. Relieved 11 times, £121. Voted £10.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on July 25th, Mr. HENRY MORRIS, the President, being in the chair.

It was resolved that diplomas of Membership should be issued to 112 successful candidates and that, jointly with the Royal College of Physicians of London, Diplomas in Public Health should be issued to 13 successful candidates.

Mr. L. A. Dunn was elected a member of the Court of Examiners; Mr. A. Pearce Gould was re-elected a member of the Board of Examiners in Dental Surgery; and Mr. W. B. Paterson was re-elected a member of the Dental Section of the Board of Examiners in Dental Surgery.

A letter was read from Mrs. Bennett thanking the Council for its sympathy in connexion with the death of her husband, Professor E. H. Bennett.

It was resolved that the revised edition of Part I. (Man) of the Catalogue of Osteological Specimens in the Museum should be offered for sale at 10*s.* per copy.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, August 1st, 1829.

### MEDICAL BENEFIT SOCIETY.

*To the Editor of* THE LANCET.

SIR,—You have been kind enough to insert my former notes, relative to the formation of a Medical Benefit Society in this metropolis. Permit me to inform your readers, and the profession generally, that among the several communications I have received, *two of the writers have promised very munificent donations* towards the establishment of an institution of the nature I propose. I now beg to state on what plan I should like to see it founded; viz. that of clubs or friendly societies, so that by each member contributing one or two guineas per annum, he should be allowed *two* or *three guineas* weekly, when incapacitated from attending to his professional duties; the sum to be fixed by a managing council or committee, elected by the members without favour or affection, whose duty it should also be to confer other privileges when required; as in case of the death of a member or his wife, or if his property have been destroyed by fire, or he be in prison for debt, &c. The rules to be prepared by a committee elected for that purpose, confirmed by the members at large, and enrolled according to Act of Parliament. I trust the profession will perceive the necessity of forming an institution for these purposes; and when a member requires assistance, he will have the gratification of obtaining it as his *right*, and not as a matter of *favour*, nor with the chance of experiencing the frowns or reflections of cold-hearted charity, in his applications for relief. These are urgent reasons; I trust the profession will come forward and aid my humble endeavours, and give their assistance to my project, the benefits of which will, hereafter, be duly appreciated. We have seen the great advantages that have attended friendly societies in the humble classes of society, and I can only feel surprised that nothing of the kind should have been attempted before. However, let us verify the proverb, "better late than never," and form a Medical Friendly Society. Any communications and suggestions, therefore, addressed to me, post paid only, twopenny post-office, Brewer Street, shall be attended to. Let me impress on the reader, that however bright our prospects may be at the present moment, sickness and uncontrolled misfortunes may arise, that would render such an institution one of the greatest blessings the profession could experience. Trusting to your kindness in giving this early insertion,

I have the honour to remain,
Your faithful servant,
H. W. DEWHURST, Surg.,
July 20, 1829. Lecturer on Human and Comparative Anatomy.

P S.—I have omitted to mention that I would propose to throw open its advantages to all in the profession, whether the apothecary's assistant, or the presidents of the Colleges of Physicians and Surgeons, as well as practitioners, should they choose to embrace them; in fact, it should be open to all, and influenced by none.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8067 births and 3665 deaths were registered during the week ending July 27th. The annual rate of mortality, which had been equal to 12·5, 12·3, and 12·4 per 1000 in the three preceding weeks, declined to 11·9 in the week under notice. During the first four weeks of the current quarter the death-rate in these towns averaged 12·3 per 1000, the rate in London during the same period being 12·0. The lowest rates in the 76 towns last week were 1·2 in Hornsey, 4·9 in Northampton, 5·0 East Ham, and 5·8 in Walthamstow; the highest rates were 17·3 in Walsall, 18·4 in Rochdale, 19·4 in Hanley, and 19·7 in Great Yarmouth. The 3665 deaths in the 76 towns showed a decline of 149 from the number in the previous week, and included 396 which were referred to the principal epidemic diseases, against 366, 341, and 397 in the three preceding weeks; of these, 123 resulted from whooping-cough, 113 from measles, 73 from diarrhœa, 38 from scarlet fever, 35 from diphtheria, and 14 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Willesden, Brighton, Tottenham, Leyton, Birkenhead, Halifax, or in 11 other of the 76 towns; the annual rates from these diseases, however, ranged upwards to 3·5 in Wigan, 3·6 in Preston, 3·7 in Grimsby, in Derby, and Gateshead, 4·3 in Walsall, and 4·4 in Cardiff. The 123 deaths from whooping-cough were 16 in excess of the number in the previous week; the highest rates last week from this disease were 2·7 Walsall, 2·9 in Derby, and 3·1 in Cardiff. The fatal cases of measles, which had been 127 and 142 in the two preceding weeks, declined again to 113 in the week under notice, and caused death-rates ranging upwards to 1·8 in Wigan and in Preston, 2·0 in Great Yarmouth, and 2·2 in Grimsby. The deaths from diarrhœa, which had been 39 and 65 in the two preceding weeks, further rose to 73 last week, the highest death-rates being 1·1 in Walsall and in Bolton, 1·2 in Rhondda, and 1·3 in Devonport. Scarlet fever caused a death-rate of 1·5 in Grimsby and diphtheria a rate of 1·1 in Wigan. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospital and the London Fever Hospital, which in the 11 preceding weeks had risen successively from 2658 to 3387, had further increased to 3586 at the end of last week; 557 new cases were admitted during the week, against 504, 493, and 569 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had declined from 156 to 126 in the four preceding weeks, rose again last week to 136, and exceeded by 19 the corrected average number in the corresponding week of the five years 1902–06. The causes of 36, or 1·0 per cent., of the deaths registered in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, Bristol, West Ham, Newcastle-on-Tyne, Hull, and in 50 other of the 76 towns; the highest proportions of uncertified deaths were recorded in Liverpool, Manchester, South Shields, Coventry, and Burton-on-Trent.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·7 and 14·9 per 1000 in the two previous weeks, declined again to 13·6 per 1000 in the week ending July 27th, but was 1·7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·0 in Perth and 9·3 in Aberdeen, to 15·3 in Paisley and 15·8 in Edinburgh. The 474 deaths in these towns showed a decrease of 44 from the number in the previous week, and included 66 which were referred to the principal epidemic diseases, against 59, 60, and 63 in the three preceding weeks. These 66 deaths were equal to an annual rate of 1·9 per 1000, which exceeded by 0·6 per 1000 the rate from the principal epidemic diseases in the 76 large English towns; they included 30 which resulted from whooping-cough, 15 from "fever," ten from diarrhœa, five from measles, three from scarlet fever, and three from diphtheria, but not any from small-pox. The fatal cases of whooping-cough, which had been 18, 22, and 23 in the three preceding weeks, further rose last week to 30, of which 13 occurred in Glasgow, eight in Edinburgh, three in Dundee, two in Paisley, two in Leith, and two in Greenock. The deaths referred to different forms of "fever," which had been 14 in each of the two preceding weeks, rose to 15 last week, and included seven cases of cerebro-spinal meningitis in Glasgow, three in Dundee, and one in Leith. The fatal cases of diarrhœa, which had been 12 and 19 in the two preceding weeks, declined again last week to 10, of which four were registered in Glasgow, three in Dundee, and two in Edinburgh. The deaths from measles, which had been eight and seven in the two previous weeks, further fell to five last week and included four in Glasgow. Two of the three deaths from scarlet fever and two of the three from diphtheria also were registered in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, which had been 80, 88, and 72 in the three previous weeks, further declined to 63 in the week under notice, but were 11 in excess of the number in the corresponding week of last year. The causes of 12, or 2·5 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 1·0 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 21·0 and 21·5 per 1000 in the two previous weeks, declined again to 21·2 per 1000 in the week ending July 27th. During the first four weeks of the current quarter the death-rate has averaged 20·5 per 1000, the rate during the same period being only 12·0 per 1000 in London and 14·5 in Edinburgh. The 159 deaths of Dublin residents registered during the week showed a slight decline from the number in the previous week, and included 12 which were referred to the principal epidemic diseases, against 19, 14, and five in the three preceding weeks; of these, four resulted from whooping-cough, four from diarrhœa, three from measles, and one from "fever," but not any from small-pox, from scarlet fever, or from diphtheria. These 12 deaths were equal to an annual rate of 1·6 per 1000, the death-rate during the same week from the principal epidemic diseases being 1·4 in London and 2·3 in Edinburgh. The fatal cases of whooping-cough, which had been nine, seven, and four in the three preceding weeks, were again four in the week under notice; the mortality both from measles and diarrhœa, however, was in excess of the average for the three preceding weeks. The 159 deaths from all causes in Dublin last week included 35 of children under one year of age and 35 of persons aged upwards of 60 years; the deaths of infants slightly exceeded the number in the previous week, while those of elderly persons showed a marked decline. Five inquest cases and five deaths from violence were registered; and 54, or nearly 34 per cent., of the deaths occurred in public institutions. The causes of five, or 3·1 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths in London was 0·2 and in Edinburgh 1·0. The 117 deaths in Belfast included 12 which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeon: R. J. MacKeown to the *Thetis*, on re-commissioning. Civil Practitioner W. Drake to be Surgeon and Agent at Harwich.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Charles William Buchanan-Hamilton has been placed on the Retired List, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Charles R. Woods retires on retired pay (dated July 27th, 1907).

Captain A. H. Morris has joined the Scottish Command for duty as sanitary officer, vice Captain C. F. Wanhill who has joined at the Royal Army Medical College, London, for duty. Major C. E. P. Fowler, assistant professor of hygiene at the Royal Army Medical College, has been appointed for special duty at Gibraltar.

The following officers have been appointed to the Irish Command: Captain H. P. W. Barrow, Captain H. S. Taylor, Captain T. E. Fielding, and Captain A. D. Waring to Dublin; Captain W. Bennett and Captain G. Carroll to Cork; and Captain J. H. Barbour to Belfast.

### VOLUNTEER CORPS.

*Royal Garrison Artillery (Volunteers)*: 1st Kent: Surgeon-Lieutenant-Colonel R. R. Brown is granted the honorary rank of Surgeon-Colonel (dated July 1st, 1907). 3rd Middlesex: Thomas Jefferson Faulder to be Surgeon-Lieutenant (dated July 9th, 1907).

### DEATHS IN THE SERVICES.

Surgeon-General Alexander Francis Preston, A.M.S., honorary physician to the King, at his residence in Redcliffe-gardens, South Kensington, recently, at the age of 65 years. He joined the service in 1863 as assistant surgeon, became surgeon in 1873, and reached the rank of surgeon-general in 1896. He retired on half-pay in 1902. He served in medical charge of the 66th Regiment in the Afghan war of 1880 and was present at the affair at Ghirisk, the battle of Maiwand, where he was severely wounded, and throughout the siege of Kandahar (mentioned in despatches and promoted surgeon-major, with the relative rank of lieutenant-colonel, and awarded the medal). He was granted the distinguished service reward in 1901.

Surgeon-Colonel Edmund Greswold McDowell, C.B., A.M.S., on July 26th, at the residence of his son-in-law, at Portland. He entered the service as an assistant surgeon in 1855, became surgeon in 1870, surgeon-major in 1873, brigade surgeon in 1885, and surgeon-colonel in 1886, retiring on half-pay in 1891. He served with the 44th Regiment in the campaign of 1860 in North China, including the action of Sin-ho and the storm and capture of the Taku forts (medal with clasp), and in the Egyptian war of 1882 (medal, Third Class of the Medjidieh, and Khedive's star). He also served in the Sudan expedition under Sir Gerald Graham in 1884 as principal medical officer and was present in the engagements of El Teb and Tamai (twice mentioned in despatches, C.B., and two clasps.)

### THE CONVALESCENT HOME AT OSBORNE.

The report for the year ending March, 1907, by the house governor and medical superintendent of the convalescent home intended principally for officers of the Royal navy and army, which was the gift of King Edward VII. to the nation in memory of his mother Queen Victoria, has just been issued as a Parliamentary paper. Lieutenant-Colonel C. R. Kilkelly, C.M.G., in his report states that 330 officers and ladies were admitted during the year. The average duration of each case of illness was 40·3 days. The largest number of admissions (more than half) consisted of officers from the home army. Of the 277 officers admitted 37 belonged to the Royal navy and marines, 11 to the West African and Nigerian Forces, four to West Indian regiments, two to colonial forces, and 58 to the Indian army. The home army supplied 165 cases, most of whom were serving in and invalided from India. Of these cases 15 were from the Royal Army Medical Corps.

### INDIAN MEDICAL SERVICE EXAMINATION.

Thirty-four candidates entered for the recent examination for commissions in the Indian Medical Service. Of these 27 qualified, the first 14 being admitted as lieutenants on probation, while one candidate withdrew during the examination. The following is a list of the names of the successful candidates. The total possible number of marks was 5100. 11 of the successful candidates possessed university degrees.

| | Marks. | | Marks. |
|---|---|---|---|
| H. W. Acton, | 4120 | A. J. H. Russell | 3464 |
| V. B. Green-Armytage | 3834 | D. H. Rai | 3455 |
| A. N. Dickson | 3589 | F. S. Smith, | 3410 |
| A. B. Zorab | 3561 | A. T. Densham | 3403 |
| A. G. Coullie | 3549 | A. W. Howlett | 3349 |
| R. E. Wright | 3540 | F. A. Barker | 3316 |
| W. H. Riddell | 3510 | A. N. Thomas | 3283 |

### ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London for which 59 candidates entered. Of the 30 successful candidates 15 possessed university degrees:—

| | Marks. | | Marks. |
|---|---|---|---|
| T. McC. Phillips | 605 | C. T. Conyngham | 489 |
| H. S. Dickson | 591 | H. McC. Hanschell | 487 |
| G. F. Dawson | 586 | J. R. Lloyd | 486 |
| H. V. B. Byatt | 573 | H. W. Carson | 482 |
| R. E. Todd | 561 | R. G. S. Gregg | 481 |
| T. F. Lumb | 546 | H. T. Treves | 474 |
| H. Gibson | 544 | F. T. Dowling | 471 |
| C. P. O'Brien Butler | 518 | J. C. L. Hingston | 462 |
| G. Petit | 514 | F. J. Stuart | 457 |
| J. B. Hanafin | 512 | B. A. Odlum | 455 |
| J. A. Renshaw | 510 | W. R. Spong | 448 |
| R. F. O'T. Dickinson | 496 | J. F. Grant | 447 |
| W. R. O'Farrell | 494 | P. H. Hart | 441 |
| R. De V. King | 493 | A. E. B. Jones | 440 |
| D. B. McGrigor | 490 | A. Hendry | 430 |

His Majesty paid a surprise visit to King Edward VII.'s Hospital for Officers, Grosvenor-gardens, S.W., on July 24th.

---

AT a meeting of the Totnes (Devon) board of guardians held on July 19th it was decided to erect a new workhouse infirmary.

# Correspondence.

"Audi alteram partem."

## RICE AND BERI-BERI.

*To the Editors of* THE LANCET.

SIRS,—In your issue of June 29th, p. 1776, there is an interesting report on rice and beri-beri by Dr. W. Fletcher. Experiments on a small scale have led to varying conclusions. In the experiments in the Kwala Lumpur gaol by Travers and by Hamilton Wright it was shown that of two bodies of men fed from the same stocks of rice, one party might be free from beri-beri when in the other a large number of cases occurred. A close scrutiny of their figures and of the circumstances seemed to me to diminish the value of these experiments, as one party with an average strength of under 40 was too small and the possibility of infection direct or intermediate varied in the two parties. For similar reasons I consider that this experiment of Fletcher's in the lunatic asylum is inconclusive. The parties are not large enough and certain of the figures render it probable that the possibility of infection varied in the two parties.

It must be premised that if beri-beri is an infectious disease, it is not so when neuritis is well marked and that probably the period of infection is short and limited to the earliest stages of the disease, possibly before there are any nerve symptoms, and that even then conditions at present unknown (I suggested pediculi, *not* bed bugs) must also exist. One of the earliest recognised symptoms of beri-beri is an exaggeration of the knee-jerks; by the time this stage is over and the knee-jerks are absent the "poison" has been in action for some time. In Fletcher's table of those fed on Siamese rice 16 had exaggerated knee-jerks and ten of these, or 62 per cent., "developed" beri-beri, as against the general average of 25 per cent. in those in whom knee-jerks were "average" or "impaired," 93 with 22 cases. In my opinion, this points to a considerable number of admissions in the early or prodromal stages of beri-beri to this gang. Of those on the Bengal rice 14 had increased knee-jerks, and none of these developed beri-beri; that is, none of them were in the early stage of beri-beri, and none of the remaining 81 developed the disease.

I exclude from both those, 11 and 28, who had no knee-jerks on admission, as these would be old beri-beri cases in most instances.

There is, therefore, as in so many of these experiments, a possibility, accidental no doubt, of differing liability to infection in the two classes. More detailed information is required as to the occurrence of the disease in the class with increased knee jerks on admission and as regards other points.

The effect of transfer of persons from the one wing to the other is, of course, opposed to the hypothesis of "ground infection" or to infection by bed bugs: this last, I consider, can be excluded from probabilities, as it would not explain the practical immunity of the Tamils from the disease. It does not exclude the possibility of transfer of the disease by parasites that usually remain attached to their hosts, such as pediculi. I think it is to be regretted that Braddon's terms "cured" and "uncured" should be used instead of say "Indian" and "Rangoon," as they tend to cause a prejudice. The rice used in England is the "uncured" rice.

I am, Sirs, yours faithfully,

July 22nd. C. W. DANIELS.

## CHILDREN'S COUNTRY HOLIDAYS FUND.

*To the Editors of* THE LANCET.

SIRS,—Now the holiday season is with us once more, and all those who are able to are leaving London, may I venture to remind your readers of the vast child population which, if unassisted by the public, will spend the month of August in the heat of London? The public elementary schools are now closed and a great majority of the 800,000 children that attend them will spend their month's holiday in stuffy and over-crowded rooms. Many of them are delicate and are little fitted to withstand the strain which is inflicted upon them by the heat and incessant noise. It is the aim of the Children's Country Holidays Fund to send as many of these as possible into the country where they spend a happy fortnight amid country scenes with country hosts. Last year the public enabled the fund to send away over 43,000 children. This year still more are asking for the holiday, and for months past have been saving up their pennies towards the cost of it, while their mothers have done their best to equip them with the simple outfit required.

The first party of 20,000 started on Thursday last, all bearing distinctive labels showing their destination, and thanks to the kindliness of the railway companies all have arrived safely at their destination. There are still another 20,000 hoping to go on August 8th, and to pay for them the fund requires at least another £8000. Subscriptions at present are behind those of previous years so the need of support is urgent. The risks of the holiday are so small, the results so beneficial, that I earnestly hope the generosity of the public will secure that as few as possible of these children will be disappointed. The offices of the fund are at 18, Buckingham-street, Strand, W.C., and the honorary treasurer is the Earl of Arran. One guinea will send away two children for a fortnight.

Your obedient servant,
A. F. London.

18, Buckingham-street, Strand, W.C., July 27th, 1907.

## EXPERIMENTS ON PROLONGED PROTEIN FEEDING.

*To the Editors of* The Lancet.

Sirs,—In your issue of to-day is a letter from Dr. Chalmers Watson in which he raises certain points in connexion with the experiments recorded in my paper with the above title that was published in The Lancet of July 20th last. With your kind permission I should like to reply briefly to these points.

Dr. Watson is of opinion that my experiments are not comparable to his own because he notes two points of difference in their details. In his experiments which "were directed to ascertain the effects of an exclusive meat dietary ...... the food was given in an uncooked condition in order that all the nutritive juices and soluble salts of the meat should be consumed by the animals," whereas in my experiments the meat diet was supplemented "by the addition of inorganic salts and possibly other foodstuffs and the meat was cooked." When I first read Dr. Watson's original paper I was at once impressed by the fact that he had made insufficient provision for his birds in the matter of lime and it seemed to me that many of the effects he ascribed to excess of meat were possibly due to this omission. In repeating his experiments special care was therefore taken to provide, in addition to the meat, an ample supply of lime (but absolutely no other foodstuff) with the result that no symptoms of leg weakness appeared and no changes in the bones resulted. The two observations that fowls fed on meat alone developed changes in their osseous systems and that fowls fed on meat plus lime developed no such changes can, I think, be most profitably compared, inasmuch as they show that the bone changes are the result not of excess of meat but of want of lime. It is important that this deficiency which an exclusive meat diet necessarily entails should be fully recognised and provided for. I am glad to hear from Dr. Watson that he recognised from the first this result of his diet, because the fact that in none of his original contributions on the subject is the lime factor mentioned is apt to leave his readers in doubt as to whether its importance had been realised at all.

As regards the partial cooking of the meat in my own experiments, it was stated in my paper that at first butchers' trimmings (i.e., raw meat) were given, but that on the score of expense half-raw horseflesh was substituted. On referring to Dr. Watson's original paper it appears that he administered at first raw ox meat but later gave cooked horseflesh for a time, abandoning the latter because it was difficult to obtain and was not readily taken by his animals. In his experiments Dr. Watson clearly attached but little importance to the raw state of his food. I do not think that this single distinction can be responsible for the differences in our results and I believe that Dr. Watson will agree with me in this, seeing he has applied the results of his raw-meat experiments to the question of meat eating in man with whom, of course, this food is practically always fully cooked.

In dealing with the hypertrophy of the thyroid glands Dr. Watson admits that his observations are not as complete as they should be and that the various fallacies mentioned in my paper had suggested themselves to him. Yet without supplementing the former or excluding the latter he holds that his is the only possible conclusion. It is disappointing that Dr. Watson should be content to draw a definite conclusion under these conditions, for his work on the subject has been of great interest not only from an experimental but also from a clinical point of view and one cannot but feel that he may needlessly endanger the value of his results by leaving his data thus insecure from criticism. I hope, however, that the importance of the question may induce him to repeat his experiments with a view to confirming, or if necessary modifying, his conclusions which differ from those obtained by all other investigators.

Dr. Watson believes that "more than one of the five appearances illustrated" in my paper "are pathological." Though I have examined the thyroids of more than 70 different species of animals I had not been able to recognise any pathological changes in the specimens selected as illustrations but have found that variations in structure between the Elenora falcon type and the ostrich type are by no means rare either in mammals or in birds. I should, however, be very glad if Dr. Watson would give me the benefit of his own experience, showing which specimens are pathological and how the changes can be recognised as such. I may add that I have had the opportunity of examining the thyroids of three full-grown two-spotted paradoxures (Nandinia binotata), in the first of which the thyroid was vesicular, in the second partly vesicular and partly non-vesicular, and in the third non-vesicular, yet all three animals had been kept under identical environmental conditions as regards climate, atmospheric temperature, cleanliness, character and quantity of food, water-supply, &c.

I am, Sirs, yours faithfully,
Harley-street, W., July 27th, 1907. David Forsyth.

## SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.

*To the Editors of* The Lancet.

Sirs,—I am obliged to Dr. S. Sloan for the data he has so kindly given regarding his apparatus in The Lancet of July 13th, p. 111. With regard to the application of high-frequency currents to the body, apart from the state of the latter, it is essential that five factors be considered—viz., voltage, ampèrage, wattage, time, and frequency—if a true estimate of their physiological effects upon the body is to be obtained, and in order that the latter be correctly computed it is essential that the wattage be based upon ampèrage. Dr. Sloan, however, has not considered this necessary. The frequency of the current is simply a condition to enable the current to be applied to the body with safety. If the particulars he has given as to the voltage and ampèrage of his apparatus are to be adhered to, then I contend that it is impossible for the body to withstand the wattage of the apparatus. The apparatus takes a voltage of 250, with an average of five ampères. This reduced to ordinary formula equals 250 × 5 equals 1250 watts on the primary side of the apparatus. This is transformed to 500 milliampères at 80,000 volts equal to 80,000 × 500 divided by 1000 equals 40,000 watts.

From a purely physical standpoint no one would contend that this wattage could be safely applied to the body. Should it still be contended that the voltage on the secondary side is 80,000, then the ampèrage is equal to approximately 16 milliampères and not 500. On the other hand, if it is held that 500 milliampères are taken out of the secondary circuit, then the voltage is only 2500 as the following equation will show: 2500 × 500 divided by 1000 equals 1250 watts, which is equal to the wattage on the primary side of the apparatus without taking into consideration the possible loss in efficiency of 15 per cent. by transforming.

The question naturally arises, under which of these three conditions have Dr. Sloan's experiments been carried out? It is evident that Dr. Sloan has either been working with virtually a low potential current or if a high potential, that little or no current was being passed through the body, regardless of what was being registered on the milliampèremeter. With reference to the drop of potential observed by him when carrying out his experiments, I respectfully submit that this is impossible, as no relation exists between the resistance of the body and the tension of the current on the spinthermeter. For example, if in place of the body a spinthermeter was substituted it would be found that the distance between each of the points of the spinthermeters would be equal to one-half the distance measured between the points of the first one. Again, if the body was placed in circuit with the spinthermeter and the resistance of the former gradually reduced to a short circuit, it would be found that the voltage on the spinthermeter would be reduced to *nil*. The voltage is annulled in consequence of a short circuit having been made, showing that resistance bears no relation to the potential difference. Consequently, whatever the resistance of the body may be, when placed in circuit, the same voltage would be measured between the apparatus and earth as that on the body. The body when thus placed in circuit would take the difference in current which could be registered on a meter if it were connected in series, the voltage remaining constant. If the current measured on this meter was added to the current measured on a second meter, the latter being connected to zero, it would be found that the total of the two readings on the meters would be equal to the current passing to zero when the body was short-circuited.

The above would be in ratio to any resistance placed in the external circuit, showing that resistance does not cause a drop in potential or annul voltage. The contention that 25 feet of No. 14 copper wire cause a large drop of potential is, I venture to assert, not tenable, as the resistance of this length of wire equals approximately 0·15 ohms. The copper wire short circuits the apparatus, and the apparent drop in potential on the spinthermeter is due to this short-circuiting. The physical data given by Dr. Sloan under which his experiments were carried out are such as to question the conclusions arrived at by him as to the physiological effects of high-frequency high potential currents upon the body. In order to study the physiological effects resulting from the action of high-frequency currents on the body it is essential that a given wattage acting over a given-time be maintained on it, the wattage being obtained from amperage and not from voltage. Further, it is necessary that the electrodes be kept at the normal temperature of the body, otherwise no accurate records can be made, and this is particularly the case when observations are being taken regarding the increase of temperature due to these currents.

As to the query what effects would be observed if the same amount of current was maintained but at different voltages, the answer to this is, as the voltage is increased a corresponding fall in current will take place, and contrariwise until a minimum voltage of from 80 to 100 is obtained. At this voltage the maximum current which can be tolerated by the body without injuring it is five ampères, or 400 watts. My contention is that it is the quantity of current which passes through the body that produces the physiological changes in it, but the wattage must be obtained by current and not voltage. Should my statement be challenged the matter can be easily set at rest by a comparative study of the effects of these currents upon the body under the following conditions. Let the body be subjected to 300 watts, the wattage being made up as follows: first, 60,000 volts at five milliampères; and secondly, 100 volts at three ampères.

In conclusion, I may say that those who hold that when the body is subjected to these high voltages only a very small quantity of current is passed through it are fully justified in their contention. I agree with Dr. Sloan that it would be well if a scientific investigation committee was appointed to consider the whole matter relating to the administration of these high potential currents in order that the subject may be placed upon a sound scientific basis.

I am, Sirs, yours faithfully,
Cardiff, July 26th, 1907. J. CUNNINGHAM BOWIE.

## TRYPSIN IN THE TREATMENT OF CANCER.

*To the Editors of* THE LANCET.

SIRS,—I have read with the greatest interest the able and impartial leading article on the above subject in THE LANCET of July 27th in which the independent theories of pancreatic treatment by Dr. J. Beard and by Dr. J. A. Shaw-Mackenzie are clearly differentiated. In view, however, of your statement that "so far theory only has spoken but Dr. Beard proceeded to test his theory by the injection of trypsin into some mice which had been inoculated with Jensen's mouse tumour," whatever the value of the treatment may be, I desire to draw your attention to the fact that on the publication of Dr. Beard's communication in THE LANCET of Feb. 4th, 1905, p. 281, suggesting pancreatic treatment, Dr. Shaw-Mackenzie had already proceeded to put his own theory into practice by injections of trypsin, originally prepared for him by Mr. F. W. Gamble, and by pancreatic preparations, orally and locally, as noted and first published in THE LANCET of Feb. 11th, 1905, p. 386. I am, moreover, in a position to speak with authority in this matter, inasmuch as Dr. Shaw-Mackenzie was associated with me in the treatment of some cases of inoperable cancer under my care in the Royal Hospital, Chelsea, and when his researches were being made. To my knowledge more than one patient had apparently derived advantage from the trypsin treatment before any experiments on mice were made, nearly a year later.

I am, Sirs, yours faithfully,
THOS. LIGERTWOOD, C.B., M.D. Aberd.
Chelsea, S.W., July 27th, 1907.

## THE MEDICAL USES OF ESPERANTO.

*To the Editors of* THE LANCET.

SIRS,—An International Congress of Esperantists is to be held at Cambridge in the month of August. Necessary preparations are bringing the great auxiliary language into the ken of many English folk who have hitherto been blind to its existence, and it is certain that in two months' time very few newspaper readers will retain their vague impression that Esperanto is a sort of grass. Even already, it may be, most British medical men will be interested to learn how Esperanto can be of use to them in their profession.

*Its uses.*—Medical work, more than most kinds of work, embodies the principle of universal brotherhood. The human frame has been much the same in all historic ages; health, all the world over, is to be had by obeying the same few laws; disease, in all known races, arises from similar causes and is amenable to similar treatment. And the grand impulse which prompts our service in the cure of disease and the preservation of health is happily common to all peoples. Surely, then, the medical worker, of all workers, needs an international tongue which can effect an understanding between him and all who need his help, as well as between him and all those who can assist him to greater helpfulness. That there is use for such a language in the relationship between patient and medic (and why not medic? *cf.*, cleric, mechanic, stoic, &c.) even the most stay-at-home practitioner must feel. Travel is easy nowadays, and people are so enterprising that it is common enough for foreigners to come to this country with little or no knowledge of English. In my own small experience I have had to deal with French, German, Italian, and Japanese patients who could not speak my mother tongue. The medic who travels abroad is, of course, much more liable to be thus handicapped. In such a predicament Esperanto becomes increasingly available. Already there are 35,000 Esperantists who have taken the trouble to register their names. And others without number, in over 100 different countries, have acquired the *lingvo*. That there is use for such a language in international medical congresses is even more obvious. Few English medics can understand a French, or German, or Italian speaker; and still fewer can discourse in these tongues. When it comes to Norwegian, Russian, or Dutch the case is worse. Thus our polyglot medical gatherings, which ought to be so helpful, must surely be an exasperating linguistic Babel. That there is use for such a language in international medical literature is more evident still. At present valuable work is being recorded in all manner of languages. Much of it is translated and re-translated into a variety of different tongues, but at what an expense of time and labour and printed space! Surely it would be an economy for all if every writing that promotes the health of man were accessible in one easy language. One translation would then serve for the whole world—nay, before long no translation would be required; the worker would himself record his results in the international language.

These considerations are so evident that for centuries men have been trying to select or invent an international tongue. Three plans have been possible: 1. Selection of a dead language, such as Greek or Latin. This plan has had a fair trial for centuries and it has failed. These languages are too difficult for the average man. 2. Selection of an easy living language. This also has the experience of centuries against it. No living language is easy enough. No living language can surmount the barrier of international jealousy. 3. Invention of an easy and neutral language. This has been attempted some hundreds of times. Naturally, all these artificial languages have been neutral enough, but so far only one has been easy enough. And this unique language is Esperanto.

*Its easiness.*—That Esperanto is easy anyone may prove to himself at the cost of a few pence and a few minutes. Its inventor says, "My whole grammar can be learned perfectly in one hour." Leo Tolstoy says that in two hours he was able to read Esperanto fluently. Sir William Ramsay says that an English child in six months can read, speak, and write it. My own experience is confirmatory so far as reading is concerned, but, of course, accurate writing is more difficult and fluent speaking is more difficult still. Yet by dint of teaching a class I have satisfied myself that illiterate Englishmen can acquire the language in an astonishingly short time.

The simplicity of Esperanto depends on the following facts: 1. All international words are transferred to Esperanto with merely a phonetic modification—e.g., teatro, telefono. This practice is an especial boon to the reader of medical literature, for in such writings international words bulk largely. 2. There is a groundwork of easy root words (about 2000), most of which are known already to an educated man. 3. These are varied by the addition of about 36 affixes, whereby extraordinary precision and most copious diction are attainable. 4. Grammatical inflections are cut down to the minimum, and, being based on the vowels a, e, i, o, and u, they are easily remembered as well as euphonic. 5. Pronunciation is unmistakeable. It is rigidly phonetic. Each letter is sounded. The word-stress is always on the second-last syllable.

*Its adequacy.*—That Esperanto is adequate for converse between doctor and patient follows from the fact that it is adequate for all the ordinary relations of life. Recently on being introduced to a young German who knew no English, I found that we were mutually comprehensible in Esperanto. Here is another testimony: "Yesterday a young man comes to my house and asks to speak with me. I meet him, and he greets me forthwith in Esperanto. It is a young Russian. He knows not a word of French, I cannot speak a syllable of Russian. But we had our dear *lingvo internacia* in which we conversed for a good hour without even noticing any difference in our mode of pronunciation. And yet we had learned it by ourselves, from a little text-book, thousands of miles from one another." (M. d'Eyssautier.) Here is yet another witness: "I can prove to our sceptical friends that, without knowing a single foreign language, I am corresponding with persons of 17 different nationalities, amongst whom are to be found Frenchmen, Germans, Englishmen, Swedes, Norwegians, Italians, Spaniards, Portuguese, Americans, Africans, &c." (Dr. J. Ostrovski.) Moreover, those who have taken part in the various international Esperanto congresses aver that they have had no difficulty in conversing on all imaginable subjects with Esperantists of most diverse nationality. That Esperanto is adequate for use in international medical congresses follows also from its success in the various Esperantist congresses. At Dover in 1904 five nations took part; at Boulogne in 1905 22 nations took part; and at Geneva in 1906 23 nations took part. Speeches, debates, and business, as well as concerts and plays and social gatherings are all easily practicable in Esperanto.

That Esperanto is adequate for the purposes of medical literature can be learned from the study of one number of the *Internacia Revuo Medicina*.[1] Thanks to the number of international words in medical writings any practitioner ought to be able to read this *Revuo* with no better aid than a halfpenny key to Esperanto. Then he will see that Esperanto can express all that English or French can convey and the parallel columns will prove to him that it is more terse than either. Indeed, considering that the inventor of Esperanto, Dr. Ludovic Zamenhof, is a practising medical man, it is only to be expected that the language should be suitable for medical purposes. Growing numbers of practitioners have been learning it in Britain and far greater numbers have mastered it abroad. An Esperanto medical dictionary is in preparation.

*Suggestions.*—I have tried to show that Esperanto may prove useful in the course of medical practice, that Esperanto must prove useful at international medical congresses, and that Esperanto has proved useful in the publication of international medical literature. I would suggest, in conclusion: 1. That Esperanto should be made a compulsory subject in our medical preliminary examinations, and that in all medical schools the students should be encouraged to read, and write, and speak in Esperanto. This, with their native tongue, will suffice them for scientific purposes all the world over and will save them their laborious yet unfruitful study of the other modern languages. 2. That Esperanto should be adopted as an official language at international medical congresses. It will speedily oust its rivals. 3. That, as a preparatory measure, each nation should appoint a standing medical literature committee, which would annually decide what among the records published in its mother tongue are of permanent value, and would forward that material to an international committee for republication in Esperanto.

*As a hobby.*—But it would be unfair to close without a word or two on the attractiveness of the study of Esperanto as a hobby for medical men. It is a quiet and clean occupation; it can be pursued in the pauses of one's practice; it is in itself a keen intellectual pleasure; it opens up a wide and curiously varied range of literature; it throws a marvellous light on our English language, on grammar, and on points of style. Withal, proficiency in this language is rapidly attainable; every one may reasonably count on mastery; and then there comes the strong delight of wielding skilfully this brilliant, supple, clear, and comely mental tool. Further, Esperanto broadens a man's outlook; it can give to the loneliest country doctor correspondents and human interests in every quarter of the globe; it can make him indeed a citizen of the world and a universal brother. More than that, it has realised to such an extent the vague, expectant aspirations of our time that for many a man and woman, even now, it shadows forth the coming world religion.

I am, Sirs, yours faithfully,

W. WINSLOW HALL, M.D. Edin.,
Diplomito de la Brita Esperantista Asocio.

July 20th, 1907.

# BEES' STINGS AND RHEUMATISM.

*To the Editors of* THE LANCET.

SIRS,—In connexion with the correspondence which has appeared in your columns upon the subject of bees' stings and rheumatism, it is interesting to recall that several years ago a patient wrote me asking whether physicians of to-day continued to use bees for stinging the inflamed joints in rheumatism as a curative measure, stating that he had read in an ancient classic, the reference to which I have forgotten, that such treatment was practised along the eastern shores of the Adriatic, I believe, at some time prior to the Christian era.

I am, Sirs, yours faithfully,

EDWARD F. WELLS, M.D.

Chicago, June 17th, 1907.

# THE SHADOWGRAPH BOUGIE IN URETERIC SURGERY.

*To the Editors of* THE LANCET.

SIRS,—Few surgeons, I take it, who are working at renal or ureteric surgery would care to operate without the advantage of a good shadowgraph ureteric bougie. In a small number of cases the bougie is indispensable, for it enables the surgeon to detect false radiographic shadows and thus to avoid an extensive exploration upon the pelvic part of the ureter.

Unfortunately, a foreign firm has placed upon the market a shadowgraph ureteric bougie which exactly resembles the bougie used in England, the Marshall shadowgraph bougie. A foreign specimen was handed to me and to prove its value I placed it and a Marshall bougie on a radiographic plate. The foreign-made bougie left a faint shadow but the Marshall a strong black shadow. To obtain the best results it is necessary to secure the Marshall or one which casts an equally strong shadow.

I am, Sirs, yours faithfully,

E. HURRY FENWICK.

Savile-row, W., July 22nd, 1907.

---

[1] Paris: 33, Rue Lacepède; monthly, 1*s*.

## A MODEST PROPOSAL FOR SOLVING THE ECONOMIC DIFFICULTIES OF THIS KINGDOM AND PREVENTING IT BECOMING OVER-POPULATED WITH NECESSITOUS AND MISCHIEVOUS PEOPLE.

*To the Editors of* THE LANCET.

SIRS,—It is a melancholy object to those who walk through this town of London or travel in the country when they see the streets, the roads, and the wayside commons crowded with tramping persons of both sexes, followed by two or three small children, all in rags and unable to obtain work which they probably could not perform if they could find it. I think it is agreed by all parties that this prodigious number of children in the arms, or on the backs, or at the heels of their mothers is in the present condition of the kingdom a very great additional grievance, and, therefore, whoever could find a fair, cheap, and easy method of passing these children out of existence would deserve so well of the public as to have his statue set up as the preserver of the economic status of the nation. But my intention is very far from being confined to provide only for professed beggars and their children. The project which I am about to recommend will not only provide for the natural (and therefore humane) extinction of that class, but also for the extinction of a class of persons who affect a violent sedition against any and all rules and regulations which may have been laid down for their control by the Government of the State.

If any person could suggest a method by which all the children of the poorest classes who are unable to support themselves or their families should be destroyed when under five years old, and that one quarter at least of the adult portion of that class should in each year perish, and this by a distemper rapid and comparatively painless when once acquired, it would be the obvious duty of the controllers of this kingdom to allow them to acquire this distemper if it can reasonably be shown that they do prefer to do so, which we are told none can doubt. That there was 200 years ago such a distemper is well known to those who have read the books written at that period or who have studied the parish registers or the "bills of mortality" which have recorded the deaths. It is well known to those students of past records that this distemper would at intervals take off annually half the population of any one village or township and destroy without fail every child under five years of age.

To provide for a return of this ancient and salutary state of things it is only necessary to repeal an Act of Parliament which is expensive in its administration, abhorrent to the bulk of the population, and is only useful and desirable because it affords a means of securing votes at Parliamentary and municipal elections for a certain section of professional politicians. It is not even necessary to repeal the Acts of Parliament, for it is within the power of one of the Ministers of State to sweep away this wicked interference with natural laws by "a stroke of the pen," as this Minister has himself declared. But as to myself having been wearied out for many years combining with others to offer the Government of this country good advice as to protecting the people from this distemper, and at length utterly despairing of success, I have fortunately fallen upon this proposal, which, as it is wholly new, so it has something solid and real, of no expense and little trouble, full in our own power, and since the essence of good government is to seek the favour of the most ignorant and least educated we can incur no danger in disobliging England.

I profess in the sincerity of my heart that I have not the least personal interest in endeavouring to promote this necessary work, having no other motive than the public good of my country by providing for infants and relieving the poor. For myself, I shall be a loser of nearly £20 sterling per annum, having for many years exercised the infamous profession which has succeeded in preventing the occurrence of this distemper and having been paid the same wages for my work as are earned by a common carpenter. I have no children whom I am likely to lose and mourn, as the youngest is 15 years old, and while all of them have been vaccinated every five years my wife is past child-bearing.

I am, Sirs, yours faithfully,

July 29th, 1907. J——N S——FT.

## CERTIFYING SURGEONS AND THE WORKMEN'S COMPENSATION ACT, 1906.

*To the Editors of* THE LANCET.

SIRS,—The important duties of certifying factory surgeons have been underpaid ever since the institution of the appointment, and the small fees to which your correspondent draws attention are only what one would expect from past experience. For instance, the fee which the Government in its wisdom regards as proper remuneration for the examination of a young person employed in a factory, with special reference to the work which such young person will have to do and the hygienic condition of the shop in which he has to work, is the sum of 6*d*., which, moreover, includes the keeping of a record of the examination for the purposes of an annual report, for which no fee is considered necessary.

As an example of "sweating" this would probably be unique were it not put completely in the shade by the fees allowed for reporting on cases of industrial poison, such as lead. On notice of such a case being received by the certifying surgeon the factory where the case occurs must be visited with a view to finding out the reason of lead being absorbed by the workman, the special exhaust ventilation must be overhauled to see whether it is in working order and in constant use, and the facilities provided for washing must be inspected. This being done the patient must be visited and thoroughly examined. The degree of anæmia must be ascertained, presumably by means of a blood count, and the exact amount of paralysis, if present, determined by means of electrical reactions. Having thus ascertained the facts of the case a detailed report covering one and half sides of closely written foolscap must be made out and forwarded without delay. For this work the fee of, not two guineas as one might reasonably expect, but 3*s*., is forwarded in the early part of the following year, provided that an account on the given form is duly sent up within the first week of the year.

The new Compensation Act increases enormously the responsibility of this work, as it is always liable to be reviewed by the medical referee, who, by the way, is not empowered to obtain a consultation with the certifying surgeon, and a careless or hasty examination might lead to faulty diagnosis, implying injustice either to the workman or his employer. The sum of 5*s*. paid under the Compensation Act is a small advance on this, but how is the certifying surgeon to afford the time necessary to do justice to himself in a case of ankylostomiasis, where it is essential to examine microscopically either the blood or the fæces, or in a doubtful case of anthrax when a bacteriological examination is necessary? The amount of careful work which certifying surgeons have to do is so great and is increasing so much year by year that it is almost impossible for a man earning his own living to do it conscientiously and in my opinion the time has come for the profession generally to come to the aid of the certifying surgeon in order to help him to get a remuneration in accordance with the time and trouble taken in his work.

I am, Sirs, yours faithfully,

July 27th, 1907. C. F. S.

---

WEST HAM HOSPITAL.—On July 27th the Duchess of Marlborough laid the foundation-stone of the new West Ham Hospital extension at Stratford. Replying to a vote of thanks to the extension committee, Dr. P. J. S. Nicoll, honorary secretary of that committee, referred to the help which the Duchess of Marlborough had rendered to the fund and on behalf of the committee presented to her Grace an illuminated address which expressed "sincere and heartfelt thanks to her Grace for her many acts of thoughtful kindness and invaluable assistance rendered." After the ceremony an "At Home" was held and an inspection of the buildings was made by the company. The new buildings will contain a casualty department, an operating theatre, two additional wards containing 20 beds each, and extra accommodation for the nursing staff. The estimated cost of the extension is about £20,000, and towards this amount nearly £14,000 have already been subscribed.

# THE ORGANISATION OF THE MEDICAL PROFESSION IN IRELAND.

(FROM OUR SPECIAL COMMISSIONER.)

Dublin, July 27th.

THE Irish Medical Association is well satisfied with the progress which it has accomplished during the last few years. Some 20 years ago it barely counted 500 members; it has now 884 members on its books, though some names may have to be struck off as 24 of these have not paid their subscriptions. The association has been in existence for more than 60 years and the subscription is one guinea per annum. It may be said that more than a third of the Irish medical practitioners are organised, and this in one single society. There are 2600 practitioners on the Register for Ireland but it is thought that not more than 2300 are in active practice. The Irish Medical Association is satisfied because its membership is increasing but, as it is a fighting organisation, it is much better pleased because it has been victorious in some notable contests. It is claimed that a sort of renaissance has taken place in the association. Formerly it met only in Dublin but in 1899 the annual meeting was held at Cork, and now every other year the association meets in a provincial town: thus it has been to Belfast, to Enniskillen, and to Portrush. By this means a much greater number of medical men living in the provinces and rural districts were enrolled. The propaganda was brought to their doors. Then during the alternate years, when the annual meeting is held at Dublin, much greater care has been taken to develop the social side of the gathering. At the evening receptions and parties medical practitioners from the provinces are placed in relationship with Government officials and various distinguished persons whom they might not otherwise have been able to meet. This is, at least, agreeable and sometimes useful. Then since 1901 a small journal, published monthly, is issued as the organ of the association and it keeps the members informed as to the contests and the meetings that are taking place. For now some ten years quite a number of branches of the association have been formed in the country and they keep in touch with each other through the central committee and by means of their journal.

One of the principal functions of the association was to act as a legal defence organisation. It was always endeavouring to improve the position of the poorest members of the profession but it did not succeed very often. It would take up a cause affecting at the time perhaps only one individual but in which the whole profession was interested. Thus the certifying for lunacy is a case in point. According to the law a fee of £2 is allowed but many boards of guardians contented themselves with paying only £1. Then, and so that this should not become the general practice, the Irish Medical Association endeavoured to interfere. Formerly the association was merely a fighting body; now, what with its publications, its congresses, and its branch and committee meetings, it has also become an educating body, striving to educate the medical men themselves as well as the members of the boards of guardians, on which so many of them depend, and the voters who elect the guardians. While thus not neglecting the humblest village elector, the association has been equally anxious to establish friendly relations with the Local Government Board for Ireland. By such action the association claims that during the last three years it has increased the income of the medical profession in Ireland to the extent of £30,000 per annum. In the main this result was brought about by bringing a variety of influences to bear on the boards of guardians who constitute in Ireland the chief employers of the medical profession. For instance, under the Education Act children must attend the elementary schools unless they have a medical certificate exempting them from such attendance. But there are not many parents who can afford to pay for such certificates and the boards of guardians in many places give the medical attendant £10 a year for signing the children's certificates. To many medical practitioners who as dispensary medical officers are probably not earning more than £100 a year this extra £10 is a matter of very great importance, but the money is given only as an act of courtesy and not of right.

As there is but little paying private practice to be had in Ireland the position of dispensary medical officer constitutes the economic basis on which the profession rests. In England dispensaries are private charitable or provident institutions. The term "dispensary" has quite a different meaning in Ireland, where the dispensary medical officer is a public functionary employed and paid by the local authority to attend to the poor, not merely paupers but any patient who is content to style himself as a "poor person." The difficulty has always been that of defining what constitutes a "poor person." In practice it seems to mean anyone who is not in exceptionally prosperous circumstances. But the wealthier classes are leaving the country. On the other hand, farmers and persons with small means who used to make an effort to pay their medical attendant are commencing to look upon medical attendance as a public service for which they pay in the form of rates. On the ground that the rates have increased they think that they need not give fees to their medical attendant but are willing to vote in favour of his obtaining an increase of salary. Thus taxation is gradually taking the form of medical insurance. Formerly the local practitioner often treated his appointment to the post of dispensary medical officer as a secondary consideration. His position depended much more on the local magnate and it was fortunate for him if he held the same political opinion. The pay as dispensary medical officer probably did not exceed £100 and the district would be so large that it could not be worked without the aid of a conveyance. But the guinea fees from a section of the population and the fees from the lord of the manor paid for the horse and car, and it was thus possible to do the dispensary work in spite of the smallness of the salary. To-day, however, the lord of the manor has gone and in many rural districts it is difficult to obtain a two-guinea or even a one-guinea accouchement fee. The Poor-law guardians themselves, who appoint the dispensary medical officers, sometimes do not hesitate to send an officer a red ticket, which is the regulation urgent form of summons that must be obeyed, and therefore he is compelled to attend on them gratuitously. Thus the dispensary appointment, instead of being a secondary has become the principal consideration, especially in poor and rural districts. Wages have risen, the expenses which a medical practitioner must incur have largely increased, but where the Irish Medical Association has not yet succeeded in bringing about an improvement the salaries paid to the dispensary medical officers remain the same as they were 45 years ago.

The Irish Medical Association is to be congratulated, inasmuch as it has managed to raise the rate of remuneration in 36 Poor-law unions and this affects some 300 to 400 medical men. The increase has also a retrospective effect. Thus it is arranged in many of these districts that the dispensary medical officer should be paid £80 for the first year, with an increase of £10 per annum till the sum of £110 is reached. Those dispensary medical officers who were receiving only £80 a year but had been in the service three years were at once given the £110 a year.

Another great advantage secured is the right to a holiday. Formerly a dispensary medical officer had to continue working till he fell ill and then only could he get away. To-day the majority of the boards of guardians give their dispensary medical officer a month's leave of absence and pay for his substitute, and this is not a sick leave; there is no question of ill-health except in this sense, that a regular holiday taken every year is an excellent method of preventing illness. At the same time a great deal has been done for the young practitioners and others who seek to act as locum-tenents. Formerly they were not paid more than two or three guineas per week. Now the boards of guardians have been induced to give £4 4*s.* a week and where a workhouse is included then it is £5 5*s.*

To obtain these advantages the country was divided into districts and a medical practitioner was appointed as canvasser for each district. He had to call on all the guardians and on all their electors and to explain fully the relative position of the medical profession and of the general public. It was a real educational process in which the medical practitioners were not always the teachers, for the discussion being once open they not infrequently had to hear complaints and criticism formulated against the profession by members of the general public. In spite of all these discussions and efforts the Irish Medical Association has not yet succeeded in effecting any settlement in regard to the superannuation fund. The object is to insure that every dispensary medical officer shall receive a pension on retiring from practice.

As matters now stand there is no law nor even any well-established custom. It is all optional. The guardians may or may not grant a pension. The worst of it is that the dispensary medical officer does not know beforehand what will happen. He must resign first, then if he is sufficiently popular and adroitly supported the guardians may perhaps vote him a pension. The unfortunate practitioner is not only in doubt whether he will get a pension but he is still more in the dark as to what the amount may be.

Many attempts have been made to obtain a legal settlement of this question and a law was actually enacted, but in consequence of a ridiculous error in its phraseology it has only been of benefit to some ten or 12 persons. The law said that to receive a pension the dispensary medical officer must be more than 60 years old and have been 20 years in service on the day the Act came into force—namely, Nov. 1st, 1898. The framers of the Act forgot to say what was to happen after Nov. 1st, 1898. Therefore, having securing pensions for the 10 or 12 medical men who happened to fulfil the stipulated conditions on that one and special day the law was taken as not applying to anyone else. There never was a better case of the letter killing the spirit, the purpose of an enactment. Then, again, the men who have now reached, or are nearing, the age when they ought to receive a pension were appointed to their posts under very different conditions from those that obtain to-day. These older men were selected by a few large ratepayers who generally constituted what was known as the dispensary committee. These committee-men were all personally acquainted with the candidate. But the Local Government of Ireland Act of 1898 has altered all this. The dispensary committees have been dissolved and the appointments are in the hands of the entire boards of guardians. Therefore the dispensary medical officer is now dependent on men who had nothing to do with his appointment, many of whom, perhaps most of whom, he does not know. It may also happen that some of the guardians live far away, at distances of even 20 or more miles, for some of the rural Poor-law unions cover a very large though sparsely inhabited area. The democracy governs much more than it did in the past and to a large extent consists of very ignorant poor cultivators and country folk, together with a few village tradesmen. These people vote at the elections and select from their own ranks guardians of the poor. They are not likely to understand the position and requirements of medical men.

Whether it be that medical men in Ireland are more active politicians than in England, there certainly does not seem to have been any particular hesitation shown in adopting the ways and methods of the ordinary electioneering agents. Indeed, I am told that some of the less creditable manœuvres were sometimes employed to secure an appointment. The Irish Medical Association, however, has endeavoured to teach the electorate that it was to their interest to secure the services of really competent and able medical men, adding that this could not be done unless the terms were such as would free the medical attendant from all money anxiety and trouble. The dispensary medical officer must feel secure in his position and know that he will not be left to starve in his old age. At present the pension is given as a favour, not as a right, and the guardians like to hold the dispensary medical officer under control by the threat that they may refuse to grant him a pension. This is undoubtedly a very great evil. Nevertheless, the electors are beginning to understand that it is to their advantage to secure the services of a really good medical officer, but they do not like giving pensions to officers whom they did not themselves appoint and whom they hardly know. In the south and east of Ireland the dispensary medical officers are better treated, and the North Dublin Union recently granted full pensions to two dispensary medical officers, though they were both of them Protestants. Then, again, there was a young dispensary medical officer who became the victim of a spinal disease. At first he was replaced by a locum-tenent but as his case became hopeless he had to resign. An agitation was started in favour of granting him a pension. Strictly speaking, he had served so short a time as not to be entitled to any pension, but the Irish Medical Association and the guardians persuaded the Local Government Board for Ireland to sanction the pension. In the north of Ireland, where Protestant is dealing with Protestant, there is less liberality shown. Perhaps this essentially commercial population has a keener relish for driving a hard bargain; in any case a Protestant board of guardians was mentioned to me which refused to give a pension to its dispensary medical officer, though he had served for 40 years. It is essential that the pension question shall be regulated by law and not depend on the fancies, the likes, or dislikes of a board of guardians. Then, and this is far more difficult, there should be a clear definition of what is meant by the term "a poor person," so that dispensary medical officers should no longer be called upon to attend gratuitously on patients who can well afford to pay medical fees.

The Irish Medical Association is also endeavouring to bring about a radical reform in regard to the sanitary administration of the country. Excepting in the large towns it may be said that there is no sanitary control in Ireland. In the country districts medical officers of health are appointed at merely nominal salaries. Very often the dispensary medical officer is given the post with an extra £10 a year. Of course, there is little or nothing that he can do. If he really attempted to enforce the existing sanitary laws he would be constantly prosecuting those who, by their votes, had given him his appointment and on whose votes he will again depend when the time arrives for him to retire and to ask for a pension. Therefore it is proposed to unite several sanitary districts into a smaller number of larger districts. Then it might be possible to employ at much larger salaries medical officers of health who would not need private practice, who would not be so dependent on local patronage of one form or another, and who could do their duty without fear or hindrance. This would, of course, include the prevention of the adulteration of food. In this respect nothing is done in the poorer rural districts. Diseased meat and all sorts of adulterated foodstuffs can be sold without interference and the law remains a dead letter.

The Irish Medical Association is also anxious to see that medical practitioners receive proper fees when called upon to give attendance under the Workmen's Compensation Act. Further, the association is endeavouring to get improved conditions for the medical staff of the Post Office and of the prisons. So it will be seen that there is much to do and that the association is not allowing the grass to grow under its feet. Then there are the usual professional cases and what this means may be judged by the fact that one of these cases lasted four years. It was in the early portion of the year 1902 that a medical officer was dismissed from the constabulary and the Irish Medical Association thought such dismissal unjustifiable. Protests were raised, petitions were drawn up, and a long correspondence ensued. The discussion was commenced in the locality and gradually reached Dublin Castle and the Royal College of Surgeons. Numerous inquiries were instituted and finally, after four years of agitation, the surgeon in question was reinstated and the Irish Medical Association carried its point, saving one of its members from ruin. Doubtless this organisation will continue to prosper. In its ranks Catholics and Protestants seem to forget their religious and political differences, and this is an excellent sign not only for the prospects of the medical profession but for the pacification and happiness of the entire country.

---

The After-care Association.—Two important meetings have just been held on behalf of this association, the object of which is to assist the readmission into social life of poor persons who have been discharged recovered from asylums for the insane. At one of these, which took place at New Southgate, the Bishop of Islington was in the chair, and the meeting was also addressed by Dr. G. F. Blandford, Dr. W. J. Seward, the Rev. F. Hall, the Rev. F. H. A. Hawkins, and Mr. H. Thornhill Roby. The second meeting was held at The Elms, Chelmsford. The High Sheriff of Essex presided and the speakers included the Bishop of Colchester, Dr. G. H. Savage, Dr. G. Amsden, and Mr. H. Thornhill Roxby, the secretary of the association. A good collection was made and several new subscriptions were promised. The number of cases assisted by the association during the present year shows an increase over those of any previous years and several branches are being formed in connexion with various asylums in different parts of the country. The offices are at Church House, Dean's Yard, Westminster, London, S.W., and the association's bankers are the Union of London and Smiths Bank, Limited, Argyll-place, London, W.

# SOME TURKISH LAZARETS

## AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(*With Reproductions of Photographs taken by the Author.*)

### XII.[1]

### EL WEJ: A RETROSPECT.

*History of the El Wej Lazaret.—The Constantinople Conference of 1866.—Creation of Camaran Lazaret for Pilgrims going to the Hedjaz and of those of El Wej and El Tor for Pilgrims returning from the Hedjaz.—Unsuitability of El Wej.—A Burst Condenser.—Final Transfer of Pilgrims to El Tor and abandonment of the El Wej Lazaret.—Its Revival proposed to the Paris International Sanitary Conference, 1894, but rejected by the Conference.—Present State of the Town and the remains of the Lazaret.—Conclusion of the Series of Articles.*

IF Yanbo is not often visited by Europeans, still more rarely so is El Wej. There is little reason, indeed, why they should go there at the present day. From the sanitary point of view the whole interest of El Wej lies in the past; as a trading port it offers but little importance, and as a port of pilgrimage, though a certain number of Hajjis do pass through it each year, it is not to be compared with either Yanbo or Jeddah. But at one time this small port was a good deal heard of and played a rôle of some consequence in the international prophylaxis of disease in connexion with the pilgrimage. It may be of interest to give, as briefly as possible, the history of the quarantine station there, and to add a few notes on the present condition of the town and on the melancholy ruins which alone remain to mark the site of that station.

The present system of sanitary defence in the Red Sea against the spread of plague and cholera by the pilgrimage dates essentially from the International Sanitary Conference held in Constantinople in 1866. Though not the earliest of these international meetings it was in many ways one of the most historically important, and all the later conferences, ending with that of Paris in 1903, have been but the logical development and continuation of its labours. The list of "conclusions" drawn up by the Constantinople Conference is full of interest even at the present day. They were divided into three groups as follows: (1) those relating to the origin of cholera and its endemicity in India; (2) those relating to its mode of spread; and (3) those relating to practical measures for its control. It is the last group of conclusions alone that need be considered here, and more particularly those relating to the sanitary measures recommended in connexion with the movements of pilgrims in the Red Sea. The most important of these measures was the proposed creation of a large lazaret at or near the entrance to that sea, which was to be under international control and to which all pilgrims coming from beyond the Straits of Bab-el-Mandeb were to be sent to perform quarantine before being allowed to land in the Hedjaz. That proposal ultimately took form in the creation of the Camaran lazaret, so fully described in the earlier articles of this series. It was, and is, intended to prevent the importation of disease *to* the Hedjaz. At the same time it was decided to have two similar institutions near the northern end of the Red Sea, which should protect Egypt, and indirectly Europe, from the danger of the spread of disease *from* the Hedjaz should it become epidemic there during the pilgrimage. One of these was to be established at El Wej and the other at El Tor on the Sinaitic Peninsula. The former port is situated on the Arabian coast, almost exactly opposite Kosseir on the Egyptian shores. The El Wej lazaret was to be employed for quarantining pilgrims returning from the Haj among whom cholera had broken out; that of El Tor for pilgrims free from cholera. Much confidence was placed at that period in long quarantines. Thus in 1867 (though the rules were somewhat modified later) even "clean" pilgrim ships were compelled to do seven days' quarantine at Tor, followed by seven days in the supplementary station of Moses's wells, before being allowed to land their passengers in Suez; infected ships and, if cholera had broken out in the Hedjaz, all ships coming from that province had to perform 15 days' quarantine at El Wej.

The El Wej lazaret appears to have been already in existence as early as 1867, the year after the Constantinople Conference. Then, or later, a stone landing-pier was constructed there, some masonry buildings were put up, and condensers, to supply drinking-water, were installed on a floating barge or lighter. For ten years the lazaret continued to exist and to receive pilgrims. But in the interval it had come to be recognised that its site presented many and serious disadvantages. The harbour is an exceedingly small one; not more than two pilgrim ships of any size could lie there at a time. It is, moreover, dangerous of approach and exposed to frequent stormy winds, so that ships lying there had to keep their fires up ready to run to a safer harbour in case of necessity. British ship-masters protested strongly to the home Government against the continued use of this port as a quarantine station, and their assertions as to the dangers it presented were confirmed by independent reports made to the Admiralty by British cruisers in the Red Sea. The crisis came early in 1877, when one of the condensers which had been put up to supply the lazaret with drinking-water suddenly burst. The local water-supply was wholly inadequate and unsuited for the many pilgrims quarantined there and consequently the latter were transferred to the lazaret at El Tor which has ever since been the principal quarantine station for pilgrims returning northwards from the Hedjaz.

The abandonment of El Wej appears to have given rise to a very lively and vigorous controversy at the time. Captain (later Sir Richard) Burton, who was then inquiring into the mineral resources of that portion of Arabia, was requested by the British Government to report upon the suitability of El Wej as a port of quarantine. His opinions as to the relative advantages of that port and of El Tor (which were later repeated at length in his "Land of Midian Revisited") were expressed with characteristic freedom and force. No praise that could be given to El Wej appeared to him to be excessive, while, on the other hand, no condemnation was thought to be too strong for El Tor. The former was described as almost a terrestrial paradise, while the latter was characterised as a hotbed of fever, as "inhabited by a ring of thievish Syro-Egyptian traders, backed by a wretched wilderness, alternately swampy and sandy, and comfortless to an extent calculated to make the healthiest lose health." "Tor is, in fact," Captain Burton continued, "an excellent medium for focussing and for propagating contagious diseases; and its vicinity to Egypt, and consequently to Europe, suggests that it should at once be abolished."

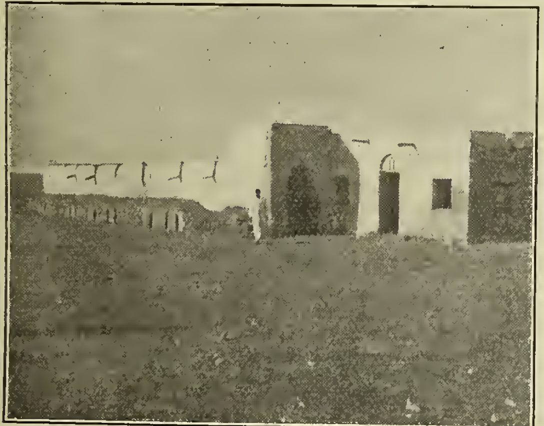
The experience of 30 years has in no way confirmed the above apprehensions as to the unsuitability of Tor for a quarantine station for pilgrims or as to the likelihood of its tending to spread rather than to arrest epidemic disease. On the other hand, the lazaret of El Wej, once abandoned, could never be revived and nothing of it remains to-day but some crumbling ruins. There was, however, some years ago a movement on foot to build another lazaret or to repair the old one at El Wej. In the interval the frontier line between Egyptian territory and the province of the Hedjaz had been transferred from the neighbourhood of El Wej to that of Akaba on the Gulf of that name. This time, consequently, it was the Constantinople Board of Health that proposed to establish or to revive the lazaret there. This proposal was mainly the result of the great European epidemic of cholera in 1892–93. Plans for the new institution were prepared by the French contractor who had carried out the new works at the Camaran lazaret. They would have involved an outlay of £T.57,000. The project, which was sanctioned by an Iradé from the Sultan, was submitted to the International Sanitary Conference held in Paris in 1894. The proposed lazaret was to serve, as before, mainly for pilgrims returning from the Hedjaz. The conference, however, preferred to enlarge and to improve the El Tor lazaret for this purpose and the project was therefore rejected. The Turkish delegation, nevertheless, made a formal declaration to the Conference to the effect that the Constantinople Board of Health had definitely decided to build a lazaret at El Wej; that this new institution was to serve mainly for quarantining pilgrims going *to* the Hedjaz from the north, acting in this way an exactly similar rôle to the Camaran lazaret for pilgrims from the south; that it could nevertheless also be employed for returning pilgrims as the old lazaret had been; and that finally the new project had been sanctioned by Iradé. Notwithstanding this declaration no practical steps were taken to carry out the project. From time to time the opinion has been expressed that a lazaret such as that foreshadowed in the above declaration ought to be created somewhere near the northern end of the Red Sea. There would be many practical difficulties, however, in the way of carrying out such a proposal, more particularly in finding a suitable site. El Wej has been shown by experience to be wholly unsuited for the purpose and no other site has been seriously recommended. Moreover, shipping would to some extent suffer since pilgrim ships would be compelled to lie at the new lazaret during the whole period of quarantine in order to re-embark their pilgrims and to carry them to the Hedjaz, whereas under present conditions they take the pilgrims straight to the Jeddah (Abu-Saad) lazaret, land them there, and are then free after disinfection to return and to start a fresh voyage. There would, indeed, be no need to consider the possibility of creating yet another lazaret were that at Abu-Saad large enough to receive all pilgrims from the north when they are subject to quarantine. But, as pointed out in Article X. of this series, the most satisfactory solution of that difficulty would be the enlargement of the Abu-Saad lazaret by means of an annexe on the mainland in the neighbourhood of the islands upon which it is now built.

---

[1] Nos. I., II., III., IV., V., VI., VII., VIII., IX., X., and XI. were published in THE LANCET of April 27th (p. 1188), May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), June 1st (p. 1518), 8th (p. 1607), 22nd (p. 1741), and 29th (p. 1810), and July 6th (p. 51), 13th (p. 114), and 20th (p. 190), 1907, respectively.

The small town of El Wej is rather attractively situated: the cliffs rise here to a height of some 50 or 70 feet, and the houses are built partly on the shores of the bay and partly on the cliffs. A large oasis, studded with palms and other trees, runs inland behind the town. Water is more abundant here than at Yanbo or Jeddah. The town has a Kaimakam or Turkish governor and a small garrison of soldiers is stationed here. On the south side of the bay is a high tower, apparently once a light-house, and at no great distance from this are the ruins of the lazaret. One large, roofless building remains the walls of which are slowly crumbling to pieces. It is shown in Fig. 39. At its back are the vestiges of a masonry reservoir, cemented inside some 20 yards long, five wide, and two deep. It was evidently intended to store drinking water. A short distance away is what remains of a stone landing jetty which is in a better state of preservation than the building just described. Near the northern shore of the bay there rises out of the water a black and monstrous object which looks strangely out of keeping with its surroundings; it is the relics of the distilling apparatus that once furnished the lazaret with water and the bursting of which led to the final abandonment of El Wej in favour of El Tor. The barge, or pontoon, on which it floated appears to have sunk or been run ashore. Portions of it can be seen above water, but the bulk of the black mass is formed by the iron shell of the distilling apparatus itself which still keeps its form in spite of 30 years' exposure to sun and wind and damp. (Fig. 40.)

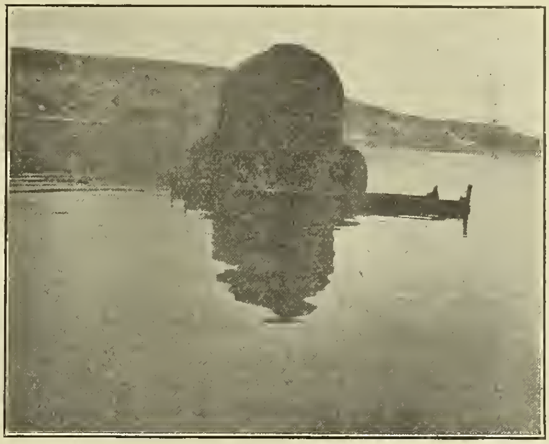
FIG. 39.



El Wej: remains of the lazaret.

With these brief notes of an extinct, and almost vanished, lazaret the present series of articles must close. It had been my intention, when starting to write them, to include a description of the other sanitary institutions visited by the Inspection Commission, notably the lazaret of Beirût and the disinfecting stations recently established at Jaffa and Rhodes. But, apart from considerations of space, these articles may be fittingly limited to a description of some of the Red Sea lazarets and the part they play in the control of disease extension in connexion with the pilgrimage to the Hedjaz. To describe the three institutions just mentioned would be to enter the Mediterranean and to touch upon the very much larger question of the network of sanitary defences at the eastern end of that sea, of which those institutions only form a small portion.

FIG. 40.



El Wej: the abandoned condenser and barge.

It should be added, however, that the foregoing articles have by no means exhausted the list of sanitary defences even of the Red Sea. There is a small lazaret at Aden; a new one has just been created at Perim; there is one at the Italian port of Massowah, another at Suakim, and a very large one at El Tor, on the Sinaïtic peninsula. The last two are under the administration of the Alexandria Sanitary, Maritime, and Quarantine Board. To deal, indeed, at all adequately with the entire system of international prophylaxis in the Red Sea alone, as it is carried out by the two boards of Constantinople and Alexandria respectively, would require a much longer series of articles than the present one. If these chapters, however, have succeeded in giving their readers some idea of the large and costly institutions which, under the name of lazarets, have been brought into existence under international auspices as the main instruments of that prophylaxis, as also of the many and complex problems which the two boards just named are called upon to solve—not only in connexion with the pilgrimage, but also in connexion with the entire sanitary defence of the Near East—they will not have been written in vain.

Constantinople.

---

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Professorship of Medicine.*

AS recorded in the last issue of THE LANCET Dr. Graham Steell has been appointed by the Council professor of medicine in the University of Manchester. In Dr. Steell the high standard kept up by the former incumbent of the professorship of medicine will be fully maintained. Clear and concise in diction, his teaching is accepted as the outcome of accurate, clear-sighted, clinical observation. His writings have been largely concerned with the diseases of the lungs and heart and his recently published text-book on the latter subject will enhance the reputation which he has already acquired. But it would be a mistake to consider Dr. Steell as a lung and heart specialist to the neglect of the other branches and he will be found an able and learned exponent of the science and art of medicine.

### *The Pharmaceutical Conference.*

The forty-fourth annual meeting of the British Pharmaceutical Conference has just been held in Manchester. The

Lord Mayor of Manchester and the Mayor of Salford welcomed the members. Many purely technical papers were read. In the afternoon of July 23rd a reception and tea were given by Vice-Chancellor Hopkinson in the Whitworth Hall at the University. Professor R. B. Wild, the head of the pharmaceutical department of the medical school, said that the practice at the Victoria University was to teach pharmacy concurrently with medicine and chemistry. They aimed at following out the precept laid down by Mr. Tyrer, the President, and endeavoured to advance the cause of science by research. About 200 members attended from all parts of the country.

### *The Flannelette Danger.*

Some correspondence has appeared in the papers on this question, and in a letter from Mr. S. Bradbury, F.C.S., of Ashton-on-Mersey, it is stated that at the inquest on the Rochdale burning case which occurred lately the mother said that the flannelette from which the child's night-dress had been made was sold to her as "non-flammable flannelette" by a travelling draper. A full investigation showed that it was of the ordinary kind. "A similar statement was made by a draper a couple of years ago and the man was traced and forced to publish an apology in the newspapers." Mr. Bradbury suggests that all flannelettes should be plainly stamped and the comparative safety or danger of the various sorts demonstrated. It is quite time that some steps should be taken to lessen the number of the children who are now burnt to death owing to wearing unsafe flannelette.

### *Novel Excuse for Assault.*

A peculiar excuse was given by a Wigan man the other day when charged with being drunk and assaulting the police. The man said he had recently undergone an operation "and they reckon after a man undergoes an operation it takes effect on him." The excuse did not avail and he was fined 20*s.* and costs.

### *Bradford Medical Men and the Watch Committee.*

The Bradford watch committee recently advertised for police surgeons at fixed salaries to fill vacancies. But the local branch of the British Medical Association objected to the terms and all the candidates withdrew. A few days since a meeting of the branch was held at which a letter was received from the watch committee stating that somewhat lower fixed salaries would be offered and the usual medical fees allowed. This was considered satisfactory and it was agreed that the vacancies should be competed for.

July 30th.

## WALES AND WESTERN COUNTIES NOTES

(From our own Correspondents.)

### *Water Supplies in Monmouthshire.*

The necessity for taking some steps to provide a proper supply of water for the increasing population in the mining districts of Monmouthshire has for some time been engaging the attention of the sanitary authorities of the county. There is little doubt as to the desirability of a general scheme being undertaken and it is anticipated that after the first few years such a scheme would be self-supporting. The initial expenditure, however, has to be met out of the general rates of the county and it has been difficult to persuade those who live in the purely rural districts that what is of advantage to a portion of the county is ultimately of advantage to the whole. There appears now to be some likelihood of an agreement being arrived at by the urban and rural sections of the county council. At a conference of sanitary authorities recently held at Newport resolutions were carried recommending the county council to introduce a Water Bill next session. The suggested provisions of the Bill would enable the costs of the Bill and the acquisition of lands to be a general county charge, the county to be recouped out of the profits of the undertaking when it reached a profit-earning stage. It is also proposed that the works should not be commenced until the county council has made such contracts with local authorities or water companies as would insure no loss to the county and that any water company taking water from the county council should be compelled under penalties to supply a given district under constant pressure. The county council has been advised by Mr. Baldwin Latham who recommended the construction of three reservoirs at an estimated cost of £730,000 which would supply 4,000,000 gallons daily.

### *Swansea Hospital.*

Allegations of abuse of the Swansea Hospital have of late years been very frequently made. The question has been discussed by the board of management of the institution. and although there has been considerable difference of opinion as to the extent to which the abuse exists a majority of the board decided that it was desirable to make a systematic inquiry into the means of every patient. At the annual meeting of the subscribers to the institution held on July 19th this recommendation of the board of management was considered and its adoption was very strongly urged by Mr. W. F. Brook and Dr. H. A. Latimer, but it was rejected by a large majority, and a suggestion that inquiries should be made in doubtful cases only met with little support.

### *Important Decision as to Inferior Milk.*

It has hitherto been considered a sufficient defence for a milkseller who is brought before a bench of magistrates for selling milk of an inferior quality to prove that the milk is poor as it comes from his cows. If a recent decision of the Bristol justices is upheld this defence will no longer be tenable. A milk dealer whose milk was found upon analysis to be deficient in milk fat proved to the satisfaction of the justices that his cows gave poor milk. He was, however, convicted, for the justices found that he was to blame. He had a good herd and knew the conditions of his farm and they considered that if he were to milk his cows at more equal periods, and to feed and house his cattle in a more husbandmanlike manner, there would be no difficulty in his getting milk of a proper standard.

### *North Devon Infirmary.*

The annual meeting of the subscribers to the North Devon Infirmary, Barnstaple, was held on July 23rd under the presidency of Earl Fortescue. The medical report was satisfactory and the financial statement showed a favourable balance of £184. It was reported that the structural alterations in the building, which had recently been carried out at a cost of £4905, were now finished, and that the whole cost of the undertaking had been defrayed by a special appeal with the exception of £810 which had been allocated by the committee of the infirmary from the funds of the institution. After a considerable amount of discussion it was decided to alter the rules of the infirmary so as to exclude cases of enteric fever. This matter had been under consideration for several months and a special committee has been appointed to deal with the subject.

### *The Paignton Urban District Council and its Medical Officer of Health.*

Some friction has recently arisen between the Paignton urban district council and its medical officer of health owing to the latter having opposed the application of the council at the recent Local Government Board inquiries respecting street improvements and the water distribution scheme respectively. At a meeting of the council held on July 15th the matter came under discussion and a motion was unanimously carried that the council should place on record its disapproval of the attitude taken by the medical officer of health at the two recent Local Government Board inquiries. Before the motion was put to the meeting the medical officer of health, who was present, protested that before this was done he should be allowed to reply but the chairman informed him that unless he intended to apologise for his action he could not be heard. The medical officer of health replied that he had no intention of apologising. It certainly seems somewhat arbitrary to condemn the action of any official in his presence without giving him an opportunity of reply.

### *British Dental Association.*

The annual meeting of the Western Branch of the British Dental Association was held at Bath on July 26th and 27th, Mr. E. L. Dudley of Bath presiding. Dr. C. A. Hayman (Clifton) opened a discussion on Why do People Lose their Teeth at such an Early Age? Some interesting demonstrations were given by several of the members. The annual dinner took place on July 26th at the Empire Hotel. It was decided to hold the next annual meeting at Newquay.

### *Devon and Exeter Hospital.*

On July 19th, in the presence of a large gathering, the new electrical department which has been added to the Devon and Exeter Hospital by Mrs. Sanders of Stoke Hill was formally opened. The cost of the apparatus was about £350 and the department will be under the direction of Dr. J. Delpratt Harris. A memorial tablet recording the opening of the department was unveiled by Lady Duckworth-King.

July 30th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *University of Edinburgh: Graduation Ceremony.*

THE summer graduation ceremony at the University of Edinburgh was held on Friday, July 26th. The Vice-Chancellor, Principal Sir William Turner, presided. Before the candidates for medical degrees were presented Sir Ludovic Grant presented the name of William Bayard, M.D., St. John, New Brunswick, for the honorary degree of LL.D. In doing so it was stated that, so far as was known, Dr. Bayard was the "patriarch of the whole vast tribe of Edinburgh graduates throughout the world." He graduated in 1837, and although 93 years of age is in vigorous health and still practising his profession. It was not, however, on account of his longevity alone that Dr. Bayard had been deemed worthy of academic recognition—"yet higher grounds were furnished by the rare wisdom, the probity, the dignity, and nobility of character which he had ever displayed in the practice of his profession and in social intercourse. He had long exercised by virtue of these qualities a salutary and ennobling influence amongst his medical brethren in New Brunswick, while by the entire community there he was greatly honoured and greatly beloved." Sir J. Halliday Croom presented the ordinary medical graduates. For the degree of M.D. 69 candidates were presented. Gold medals for theses (the subjects of which are appended) were awarded to Dr. Lesley Newton Hesketh Biggs, India (the Perfusion of the Mammalian Heart with Locke's Fluid, and Investigation of the Bundle of His): Dr. James Andrew Gunn, Scotland (a Contribution to the Pharmacology of Yobimbine); Dr. James Lochhead, Scotland (Some Problems of Fœtal Nutrition, with special reference to the Function of the Placenta); Dr. Stuart McDonald, Scotland (the Pathology of Epidemic Cerebro-spinal Meningitis); Dr. Hugh Angus Stewart, Scotland (Experimental and Clinical Investigation of the Pulse and Blood Pressure Changes in Aortic Insufficiency); and Dr. Henry Wade, Scotland (a Contribution to the Problem of Cancer Research Based upon the Results of an Experimental Investigation of Infective Sarcoma of the Dog). The degree of Master of Surgery was conferred on two candidates. The degrees of M.B., Ch.B. were conferred on 119 candidates, including three women. The diploma in Tropical Medicine and Hygiene was conferred on one candidate. The Ettles scholarship was awarded to Robert Hillhouse Jamieson, M.B., Ch.B. When the degrees had been conferred Sir Halliday Croom addressed the graduates. After the ceremony was concluded a house luncheon was held in the University Union when it was intimated that the sum of £6000 had been raised which entitled them to a like sum from Mr. Carnegie and from Sir Donald Currie, so that their buildings were paid for.

### *Enteric Fever at Peterhead.*

According to the report of the medical officer of health the total number of cases of enteric fever notified so far has been 250. During the past week 24 cases were reported, as compared with 33 in the preceding week. It is estimated that about 100 cases have fully recovered. The total number of cases treated in the hospital has been 75, 16 of which have been dismissed well.

### *Condition of the Fish-curing Yards in Aberdeen.*

At the last meeting of the public health committee of the Aberdeen town council attention was drawn to the statement made in the House of Commons last week with reference to the satisfactory condition of the fish-curing yards in Aberdeen, and gratification was expressed in the committee that public notice should be taken of this in view of the activity of the sanitary officers.

### *Royal Army Medical Corps: Aberdeen Companies at Barry.*

Contrary to what has been the case during the past few years the corps has remained in Scotland for its annual camp training. On June 28th about 170 men left Aberdeen for Barry under the following officers: Captain Fraser, Captain Rorie, Captain Wallace Milne, Lieutenant Innes, Lieutenant Howie, Quartermaster Cromar, and Chaplain the Rev. Jas. Smith. Colonel T. M. Corker, principal medical officer of the Scottish district, has visited the camp and inspected the men. He expressed himself as being very pleased with the condition in which he had found men and stores.

### *Pharmaceutical Conference in Aberdeen.*

The British Pharmaceutical Conference met in Manchester this week and on the invitation of the representatives of the Pharmaceutical Association of Aberdeen and the North of Scotland it was decided to hold its meeting next year in Aberdeen. Officers were elected for the ensuing year, Mr. R. Wright of Buxton being made President.

### *Inverness Infirmary: Gift of a Ward for Consumptives.*

A special meeting of the Inverness Infirmary managers was held on July 25th, Bailie John S. Fraser presiding. A letter was read from Dr. Mackay intimating an offer from an anonymous gentleman of £1000 or £1200 to provide a ward for isolating and specially treating consumptive patients in the Northern Infirmary. Mr. Shaw moved that the offer should be accepted and that it should be remitted to a committee to ascertain the cost of the proposed ward and to report, and this was agreed to.

July 27th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Belfast Health Commission.*

ON July 22nd several officials, a lodging-house inspector, and the superintendent of markets having been examined, Mr. H. C. Manley, dispensary medical officer of Whitehouse, on the western side of Belfast Lough, gave evidence as to his district. He said that the sanitary condition of Greencastle was far from satisfactory. In reply to one of the Commissioners (Dr. L. W. D. Mair) Mr. Manley said that the nuisance caused by sea-weed (ulva latissima) at Lower Whitehouse was terrible. He also said that people came to this part of the shore in crowds to collect cockles. On that very morning he had seen a large number of people arriving from the shore with bags of mussels and cockles. Such a practice, he thought, should be put a stop to. The new veterinary surgeon of the corporation (Mr. J. A. Jordan), who was appointed three months ago, said that the number of seizures of unsound meat in the city was not large. If the whole carcass of an animal was affected it was seized and destroyed, but if the tuberculosis was purely local the part affected was removed and the carcass was allowed to pass. He had no power to inspect cattle outside the district. He did not consider that the surroundings of the abattoir were good. The city surveyor having given further evidence as to the sewage outfall, the engineer-in-chief to the Harbour Commissioners produced maps and photographs in connexion with the much discussed chute through which the city sewage passes into the sea in Belfast Lough. The medical superintendent officer of health having been further examined the chairman of the public health committee referred to the reforms and improvements which had been effected by the corporation in regard to the drainage of the city and other matters. Mr. W. McGrath, K.C., addressed the Commission on behalf of the corporation, his main point being that the Registrar-General had not allowed for the increase in the population and that as a result the death-rate was reckoned as too high. He said that if the reforms suggested by the bodies which indicted the corporation were to be carried into effect it would mean increased expense to the ratepayers. The chairman of the public health committee having on behalf of the corporation given expression to its sense of the great ability, thoroughness, and patience with which the inquiry had been conducted, Sir John Byers said that on behalf of the medical profession he would like to endorse what had been said regarding the exceedingly thorough, careful, and fair manner in which the Commissioners had tried to elicit the truth in that inquiry. The members of the medical profession had no personal interest in the matter. All they wished to do was to try to bring the city, so far as public health was concerned, up to the standard of other large cities in England and Scotland. Mr. G. W. Ferguson, on behalf of the Citizens' Association, also expressed appreciation of the manner in which the inquiry had been conducted. The chairman before closing the public portion of their work said he would like to say that it had been a great pleasure to the members of the Commission to hear the expressions of opinion from the chairman of the public health committee, Sir John Byers, Mr. Ferguson, and Mr. McGrath, and they were pleased to think that that opinion might possibly be shared by the people of Belfast. He earnestly hoped that the inquiry would prove to have been sufficiently useful to warrant the labour and the time which had been devoted to it. The inquiry, which has taken up 33 days, has now concluded so far as the taking of evidence which the Commissioners will consider, and it is expected that their report will be presented in the autumn. Already an immense amount of good has been effected by the very existence of this Health Commission, the public health committee having displayed an abnormal activity since its sittings began. When the report is tabled the public will have to decide what is to be done with its recommendations. In the meantime the Health Commission has had a wonderful educational effect.

### *Cerebro-spinal Fever in Belfast.*

There is little change to report as to the prevalence of cerebro-spinal fever in Belfast. During the week ended July 20th there were seven cases as compared with eight in the previous week. Since the meeting of the public health committee on July 18th up to July 25th two cases of cerebro-spinal fever were notified to the health department, and during the week ended July 20th two deaths were registered as having been caused by this disease. At present there are in Purdysburn fever hospital 29 cases of cerebro-spinal fever.

### *Royal University of Ireland.*

At a meeting of the Senate held on July 26th the following proposition was moved by Sir Christopher Nixon, seconded by the Rev. Dr. Hamilton, and passed unanimously :—

> That, having regard to the injurious impressions produced by the adverse comments on the working of this University as a teaching and examining body made in the report of the Royal Commission on University Education in Ireland (1903), and in the Royal Commission of Trinity College, Dublin, and the University of Dublin (1907), the Senate earnestly desires to bring under the notice of the Government the serious injury to higher education in Ireland which will result from any further postponement of the settlement of a question so vitally bound up with the intellectual and material progress of the country.

The following were named as a deputation to wait on the Chief Secretary in reference thereto: Lord Castletown, Sir Christopher Nixon, the Rev. William Delany, the Rev. Thomas Hamilton, Dr. John R. Leebody, Mr. Alexander Anderson, Lord Killanin, Dr. B. C. A. Windle, and the Right Rev. Monsignor Mannix.

July 30th.

## PARIS.

(From our own Correspondent.)

### *The Liability of Medical Men.*

In the last number of The Lancet I referred to a lega case possessing considerable interest for the medical profession—namely, an action brought by Mlle. Peyronette agains Dr. Cormon on account of bodily injury sustained by her in consequence of a method of treatment which he had adopted. The judgment of the court was delivered on July 20th and was in Dr. Cormon's favour. In arriving at this conclusion the court took into consideration the fact that mere imprudence, inattention, clumsiness, or neglect of the police regulations might be a professional misdemeanour (*délit*) in a medical practitioner, but that the bringing of a formal accusation against such practitioners for every act which might have a result detrimental to the patient would be going beyond the intention of the legislature and would imperil the very interests which the latter wished to preserve, for it would naturally have the effect of destroying all initiative and all free choice in the treatment of disease and in the performance of operations involving danger. In order to avoid extremes in either direction it must be recognised that the practical application of well-supported (*sérieuses*) medical theories, in accordance with scientific knowledge and the teaching of the schools, does not make the practitioner responsible to the law. On the other hand, inattention to the general rules of prudence and common sense which must be observed in all professions, gross neglect, or ignorance irreconcilable with the possession of a medical diploma, may make a practitioner responsible to the law and, in fact, ought to do so. Since, firstly, in the present case the charges brought against Dr. Cormon by the public prosecutor resolved themselves into a want of foresight in not attaching sufficient importance to the well-marked symptoms premonitory of superficial sloughing; secondly, since the treatment was on the whole in accordance with the principles accepted by the best medical and surgical authorities; and thirdly, since the patient under Dr. Cormon's treatment had recovered from an illness which threatened her life, the acts complained of would not justify the condemnation of the defendant. Dr. Cormon was therefore acquitted.

### *Hospital Dietaries.*

At a meeting of the Hospitals' Medical Society held on July 5th M. Widal read the report of the committee to which had been assigned the duty of drawing up a salt-free dietary which it had been considered necessary to add to the other diets. The committee reported that it was impossible to lay down a hard-and-fast list of food (*menu définé*). The physician in charge of each case must decide upon the quantities of carbohydrate, protein, or fat which he should prescribe. All these various foodstuffs, however, will be prepared without salt.

### *Bequest by Professor Grancher.*

In the obituary notice of Professor Grancher which appeared in The Lancet of July 20th, p. 195, I mentioned that he had founded a society for the protection of children from tuberculosis. On the day after his funeral the committee of the society met at Madame Grancher's house and on the will being read it was found that the testator had left to the society a sum sufficient to produce an annual income of 20,000 francs. Madame Grancher has been made a member and vice-president of the committee. Dr. Roux, director of the Pasteur Institute, has accepted the position of president of the society.

July 29th.

## BERLIN.

(From our own Correspondent.)

### *Suicides of Children.*

Professor Eulenburg lately read a paper before the Verein für Schulgesundheitspflege (School Hygiene Society) on Suicides of School Children. These events are more frequent than is generally believed, as in Prussia from 1880 to 1903 there were no fewer than 1152 suicides of children attending schools, 340 of them being pupils in the higher schools and colleges and the remainder in public schools. In 423 cases punishment, non-success in classwork, and removal from school for misconduct were alleged to be the cause, so that about one-third of the suicides were attributed to reasons connected with the school. In about 10 per cent. mental and nervous troubles were present, while in 265 cases no cause could be found. In some cases the motives of the suicide were rather trivial, such as the refusal of the parents to allow certain games or recreations. The study of the works of some philosophers, especially of Schopenhauer and Nietsch, has induced some young men to take their lives, and in a number of cases love affairs have a preponderant influence in prompting the rash act. Professor Eulenburg, in concluding his address, a detailed report of which has appeared in the *Zeitschrift für Pädagogische Psychologie, Pathologie und Hygiene*, said that a good many suicides might be avoided if the individuality of the pupil were more considered by the school authorities and the parents.

### *Professional Unity.*

A remarkable example of professional fellow feeling was lately given by the medical men of Wiesbaden. One of the medical officers to the Wiesbaden post office had during the late Parliamentary elections not only voted for the Socialist candidate but had also publicly spoken in his favour. He was therefore denounced and the director of the post office asked him as a Government medical officer for explanations which he refused to give, saying that he was not obliged to justify his political opinions. Notice was then accordingly given to him and the vacancy was advertised in the medical papers. The medical man in question therefore referred the case to the Wiesbaden branch of the Leipsic Medical Union, to which allusion has been made on several occasions in these columns, the result being that none of the local medical men applied for the appointment. The central committee of the union was also informed and advertised in all the medical journals and in the provincial newspapers that the appointment of medical officer to the Wiesbaden post-office was "blocked" by the union. This means that no member of the union may till further notice take the place of the dismissed member, and as almost all medical men of good professional standing belong to the union the Wiesbaden postal authorities will probably have considerable difficulty in obtaining a new medical officer.

### *Professor von Leyden's Successor.*

His Excellency Professor von Leyden, the celebrated professor of clinical medicine at the University of Berlin and one of the leading consultant physicians of the metropolis, has resigned his professorship and will accordingly retire at the end of the summer semester. The medical faculty, which in cases of vacant ordinary professorships is entitled to nominate three candidates to the Government, proposed Professor Müller of Munich, Professor Krehl of Heidelberg, and Professor His of Göttingen. Both of the two first mentioned declined to remove to Berlin, a fact which was much commented on in the medical and lay press, because a professorship in the University of Berlin has advantages both as regards emoluments and also in other ways over professorships in the other German universities. The Government has therefore appointed Professor His who is a son of the celebrated anatomist and was born at Basle in Switzerland.

July 29th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *Infectious Diseases.*

THE outbreak of plague seems to have diminished, no cases having been reported since my last communication. A suspected case at Melbourne, isolated at the Plague Hospital, proved not to be plague. Diphtheria has been rather more prevalent in Victoria and Melbourne than usual. The number of cases reported for the whole State for the fortnight ending June 1st was 92, with one death, as against an average of 75, with three deaths. In Melbourne 60 cases with one death were reported, as against the average of 31 cases with two deaths. The accommodation at the Melbourne Infectious Diseases Hospital was insufficient for the cases and to meet the emergency the committee has erected three tents in the grounds. Scarlet fever is also prevalent in the suburbs of Melbourne, ten cases having been reported in two days at Newport. All the cases were promptly isolated and the schools were inspected. Another outbreak of typhoid fever has occurred at the Hospital for Insane at Kew, Melbourne. It was thought that the previous epidemic was due to contamination of the soil under the floors of some of the rooms. The floors were taken up and the soil was treated, but this fresh outbreak seems to discredit the supposed origin of the trouble.

### *Removal of a Health Officer.*

What is regarded by the local municipal council of Newmarket as a high-handed and unwarrantable action by the Board of Public Health of Victoria was the removal of the local health officer by the Governor in Council in the following circumstances. Owing to the presence of typhoid fever in the shire the Board asked the local health officer for a report. The request was not complied with for six weeks, the health officer explaining that his time had been so fully occupied that he had been unable to collect the required information sooner. The Board then recommended the Governor in Council to relieve the health officer of his position under the provisions of the Health Act. It was admitted that the report when received was a very full and good one.

### *Medical Congress of Australasia.*

The next session—the eighth—of the Australasian Medical Congress is to be held in Melbourne on Oct. 19th, 1908. Some time ago a strong organisation committee was appointed and it has completed its labours and made the necessary preliminary arrangements. The President is Professor H. B. Allen who holds the chair of pathology in the University of Melbourne and was the general secretary of the Congress at its second session held in Melbourne in 1889. Mr. G. A. Syme is treasurer and Dr. H. C. Maudsley is general secretary. The Governor-General, the admiral, the governors of all the States of Australia, and the governors of New Zealand and Fiji have accorded their patronage and the Premier and Government of Victoria have given their special countenance and support. The meetings will be held at the University. The congress has been divided into 11 sections and their presidents, vice-presidents, sectional committees, and secretaries have all been appointed. The following have accepted office as presidents of sections:—Medicine: Dr. G. E. Rennie, physician to Prince Alfred Hospital, Sydney. Surgery: Dr. B. Poulton, lecturer on surgery in the University of Adelaide and surgeon to Adelaide Hospital. Obstetrics and gynæcology: Mr. E. T. Thring, gynæcologist to Prince Alfred Hospital, Sydney. Anatomy and Physiology: Dr. J. T. Wilson, professor of anatomy in the University of Sydney. Pathology: Dr. F. Tidswell, director of the Bacteriological Laboratory, Board of Health, Sydney. Public Health and State Medicine: Dr. J. M. Mason, Chief Health Officer of New Zealand. Diseases of the Eye, Ear, and Throat: Dr. J. Lockhart Gibson, surgeon to the departments of the eye, ear, and throat, Brisbane Hospital. Neurology and Psychiatry: Dr. F. Truby King, superintendent of the Hospital for Insane, Dunedin. Diseases of Children: Dr. A. Jefferis Turner, physician to the Hospital for Children, Brisbane. Naval and Military Surgery and Medicine: Surgeon-General W. D. C. Williams, Director-General of the Army Medical Services of the Commonwealth. Skin Diseases, &c.: Dr. W. McMurray, dermatologist to the Sydney Hospital. The subjects selected for discussion in special meetings of the whole Congress are: (1) the relations of the medical profession to hospitals and (2) syphilis. The sectional committees have also selected subjects for discussion in the different sections and are in communication with leading authorities in the different States in securing reports, papers, and exhibits.

### *Hospital Affairs.*

The subcommittee of the Melbourne Hospital appointed to consider the question of rebuilding on another site has presented a progress report. Several suggested sites had been inspected and the most suitable was the ground used as a horse and pig market. The Premier had promised to try to arrange an exchange of sites, so that the city council could give up the market site, and also to purchase for the Government the present hospital grounds at a fair valuation—probably about £100,000.—At a meeting of the committee of the Melbourne Hospital on June 11th a recommendation from the medical staff for the appointment of registrars was considered. It is a remarkable circumstance that though the staff made similar recommendations many years ago, and from time to time since, and although the committee has framed rules for the duties of the registrars, nothing further has ever been done, and now the president, while approving of the suggestion, said that it would not be advisable to make the appointments for some time. Owing to the way in which the records of cases are kept at the hospital it is impossible to get any trustworthy information or statistics from the case books.—On June 4th a meeting of about 70 subscribers to, and former patients at, the Victoria Sanatorium for Consumptives at Macedon was held to consider complaints which had been made concerning the management of the institution. These complaints were explained by Mr. Duncan Turner who had been connected with the institution for many years but who had lately been away in another State and on his return had found that affairs were not satisfactory. The institution was supposed to be a charity but he stated that patients were not admitted to it unless they paid. The secretary practically said that "there is no room for anyone who comes without money but if you pay you can get in at once." Patients complained of the management of the place and gave instances of extravagance. Mr. Turner had written to the committee last January asking for an inquiry but the committee had refused, and as he was again about to leave the State he had taken steps to get this meeting of subscribers called. A letter was read from the secretary explaining that when Mr. Turner wrote in January the committee asked "for specific instances of mismanagement and against whom directed" and asked for a conference with the signatories to the requisition for a meeting, but its requests were ignored. A resolution was passed that the meeting, "having heard the opinion of Mr. Turner and others that the management of the sanatorium is not at all satisfactory, believes that the subscribers should take an early opportunity of having an inquiry into the management of the Macedon sanatorium and of the Melbourne office."

June 29th.

# Obituary.

## JOHN SHERWOOD STOCKER, M.D. LOND., M.R.C.P. LOND., M.R.C.S. ENG.

John Sherwood Stocker, who died on July 18th after a prolonged illness, was born on April 9th, 1826. His father was Richard Stocker of Great Cumberland-place, a well-known West-End practitioner; his grandfather (whose name was also Richard) was for 40 years apothecary at Guy's Hospital, combining with that office further duties analogous to those at present fulfilled by a house physician and a dean of the medical school—there was less division of labour in those days; and his great-grandfather, John Stocker, was a general medical practitioner at Fareham in Hampshire. Thus it will be seen that Dr. Stocker came of a good old medical stock. He was educated at King's College School and Guy's Hospital and became qualified in 1849. In 1851 he took the degree of M.B. (with high honours both in surgery and medicine) at the University of London and two years later obtained the degree of M.D. He also studied at the University of Paris and was there during the Revolution of 1847. He was for some time assistant physician to the Samaritan Free Hospital for Women, and he was also for many years physician and subsequently consulting physician on the staff of the Western General Dispensary. He was a prominent figure at the Society of Apothecaries, being a member of the Court of Examiners from 1884 to 1892, junior warden in 1897, senior warden in 1898, and Master in 1899. A colleague on the Court of Examiners states that he was an excellent chairman, devoted to his work at the Hall, and spared no pains to foster the friendly feeling which always existed between the examiners. There was general regret when he left the Court of Examiners to become a member of the Court of Assistants. Until his retirement from practice Dr. Stocker resided at Montagu-square.

A consulting surgeon at Guy's, one of his few surviving contemporaries at that hospital, writes of the high esteem, popularity, and affection in which Dr. Stocker was held by all who were associated with him. His generosity was well known to all; not less conspicuous was his cheery, bright, and happy disposition, and simplicity and sincerity were marked features of his character. A London graduate who was intimate with him, writes: "His leading professional trait, in my opinion, was his wonderful aptitude at diagnosis; I often marvelled at the facility with which he could make a diagnosis by mere scrutiny and without making any further physical examination." Dr. Stocker was twice married—first to Mary Ann, daughter of Mr. Richard Worlidge Southby, and secondly to Charlotte Frances, sister of the Right Hon. Sir Joseph Cockfield Dimsdale, Bart. He was a widower at the time of his death and leaves two sons.

---

A RUSSIAN CANCER COMMITTEE.—The Medical Council of the Ministry of the Interior has formed a special committee, with V. V. Podvysotsk, director of the Institute of Experimental Medicine, as president, to study the question of establishing a committee in Russia for the investigation of cancer.

PROPOSED TESTIMONIAL TO DR. J. MILSON RHODES.—A public meeting has been held at Didsbury at which it was resolved to present a memorial to Dr. Milson Rhodes for his services in freely helping the poor, the insane, the epileptic, the suffering, and the friendless. It has occurred to the editors of the *Poor-law Officers' Journal* that many people in a much larger area than Didsbury would like to be associated with the testimonial which it is proposed should take the form of a cheque with an address. They will accordingly have pleasure in receiving any subscriptions that may be forwarded from those directly connected with the Poor-law and in sending these in due course to the committee of the fund, which is composed of well-known Manchester public men. Any subscriptions that may be sent will be announced in full in the columns of the *Poor-law Officers' Journal*, 18 and 19, Whitefriars-street, Fleet-street, London, E.C., and the editors have started the movement with a subscription of five guineas.

# THE BRITISH MEDICAL ASSOCIATION.

## MEETING AT EXETER.

THE seventy-fifth annual meeting of the British Medical Association opened at Exeter on Saturday, July 27th, with the annual general meeting which was held at 9.30 A.M. in the Royal Public Rooms. The Association last met in Exeter in 1842, the then President being Mr. John Haddy James, surgeon to the Royal Devon and Exeter Hospital. This year the President is Dr. Henry Davy, physician to the Royal Devon and Exeter Hospital.

Exeter is one of the few English towns which can trace a continuity of civic life from Roman times. It was the Isca of Roman Britain and later was divided between the remnant of the Britons and the invading Saxons. The city has undergone some 14 sieges, the last being in 1646. It is therefore a place of great historical interest and retains a fair number of ancient buildings, while having no manufactories of importance it is clean and bright. There is a pleasant public garden, Northernhay, which was made public so long ago as 1612. It lies at the foot of the mound (Rougemount) on which the ancient castle stood, and occupies the site of the old north ditch which was filled in about 1607. The Cathedral is, of course, one of the most beautiful in England. It is of medical interest to remember that Exeter formerly possessed a leper hospital which stood outside the south gate and was dedicated to St. Mary Magdalen. Its inhabitants were cared for, if not medically treated, by the Grey Friars who arrived about 1250. Coming down to more modern times, the Royal Devon and Exeter Hospital, founded in 1741, was one of the earliest county hospitals in England, while the West of England Eye Infirmary was the second institution of the kind in England, Moorfields being the first. An Exeter surgeon named James was the second English operator to tie the abdominal aorta.

It was evident on Sunday that the atmosphere of medicine had affected the Cathedral, for both preachers discoursed upon medical matters. In the morning the Bishop of Crediton, taking for his text I. Cor. xii. 9, "The gifts of healing by the same spirit," said that men were too much inclined to call that which they did not understand supernatural. But the natural and the supernatural were really one. All our Blessed Lord's miracles of healing were done in accordance with the laws of nature. Yesterday Marconi laid hold of a law by which he was able to perform what appeared to many to be the most wonderful miracle of modern times; and if a man could thus control nature, it was conceivable that the Lord Christ Jesus did control it also, acting in accordance with those laws and working with a knowledge of spiritual causation. A man surely would have more presumption than wisdom who would venture to assert that our Lord's miracles of healing could not have taken place, so much were they encouraged by a fuller knowledge, while humbled by it. It would not do in the face of the discovery of the x rays to be dogmatic in regard to what was possible or impossible in the realms of fact. Great men of science who lived close to nature were speaking with exceeding modesty, and nature was ever revealing her choicest secrets to such as were in sympathy with her and who reverenced her God. In the evening Prebendary Dangar preached upon research, saying that the spirit of research was sanctified and elevated into a holy avocation in things pertaining to the body as well as to the soul.

The people of the city manifested an obvious interest in the proceedings. Crowds turned out to view the civic and the academic procession to the service at the Cathedral and the various social gatherings have attracted a good many well-dressed spectators. The tradesmen appear to have dressed their windows in some instances with an obvious appeal to the professional knowledge of the visitors. In the vegetable market there was one amusing example of this, for there were placards announcing under the head of "medical advice" that the banana, according to Professor Metchnikoff, was the fruit above all fruits which was free from bacteria owing to the protection afforded by the thick skin! It was gratifying to find that the "medical advice" was no worse than this.

On Monday afternoon the reception of the Association by the civic authorities took place in the Guildhall. The Mayor (Alderman W. H. Reed) was accompanied by the Sheriff (Dr. R Pickard). On the bench with the Mayor and the Sheriff were Dr. R. A. Reeve of Toronto, President of the Association; Dr. H. Davy, the President-Elect; and many of the officers of the Association and chairmen of branches. Mr. E. J. Domville, the Vice-President of the South-Western branch of the Association, introduced the President, the President-Elect, the chairman of the representative meetings, Dr. J. A. Macdonald of Taunton, and Dr. P. M. Deas, President of the South-Western branch. The Mayor, in response, welcomed the Association and wished the meeting every success.

On Monday evening Dr. Davy entertained a number of guests at the New London Hotel. Among those present were Lord Fortescue, the Bishop of Exeter, the Bishop of Crediton, Sir John Kennaway, M.P., the Mayor of Exeter, Professor W. Osler, Dr. J. W. Tatham, Dr. W. Hale White, Mr. H. T. Butlin, Sir Victor Horsley, Sir John Moore, Dr. Dawson Williams, and Dr. H. P. Cholmeley. After dinner Dr. Davy's guests adjourned to his residence, Southernhay House, where Miss Davy was "At Home." The beautiful garden was illuminated and music was supplied by the string band of the Royal Marines. A large number of guests attended and as the rain held off a most enjoyable evening was spent.

The annual exhibition of drugs, special foods, and surgical and hygienic appliances was held in the Victoria Hall, Queen-street. The building, which is designed for the holding of concerts, lectures, social gatherings, and so forth, afforded a somewhat welcome change from the rendezvous of previous years, which has usually been "the drill hall." "Drill halls" are not, as a rule, designed with any regard to the æsthetic sense; they are constructed merely from the point of view of economic accommodation. The Victoria Hall contains at one end an organ and orchestral staging and at the other end a platform under a dome. The orchestral staging was levelled by a temporary structure, and here were to be found beef extracts, a stuffed ox, surgical appliances, and so on, grouped in front of the organ pipes. The platform under the dome was given up entirely to a very fine exhibition of aseptic appliances, hospital furniture, and surgical instruments.

Even early on the opening morning (Tuesday) the exhibition was the scene of a busy gathering of medical men intent on discussing the merits of the various exhibits. The interest seemed to centre most round the exhibits of surgical instruments and of the apparatus designed for the improved application of the x rays for diagnostic purposes. A pleasing feature of the exhibition this year was that many of the exhibits were of a really scientific character. This applied particularly to x ray apparatus and to some very fine crystalline specimens of synthetic drugs and to microscopic objects. The attendance at the exhibition was more than usually good and the constant stream of well-known representatives of the medical profession through the passage ways intersecting the exhibits must have been gratifying to the exhibitors. In another column we commence a detailed notice of the more important exhibits classified, as in previous years, under the following heads: (1) Surgical Instruments and Appliances; (2) Drugs; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Exhibits of a Miscellaneous Character. On the whole, Divisions 1 and 2 presented a more imposing array of exhibits than did the others.

The sanitary authorities at Exeter were able to invite visitors to inspect two interesting departures in regard to water-supply and the disposal of sewage. The city may claim to have been the first to adopt a system of sewage disposal depending upon the peptonising and nitrifying action of bacteria. The first septic tank on any sort of a practical scale was installed at Exeter and its success was the means of inducing other authorities to adopt the same principle of disposal. A noteworthy feature of the water-supply is that a new and original design of sand-washing apparatus has been installed at the works, which are situated up the beautiful valley of the Exe about two miles above the city. The filter-beds, turbine pumping engines, and other accessories of well-planned modern waterworks were viewed with interest by those particularly concerned in such questions.

The adjourned general meeting (adjourned from Saturday, July 27th) was held in the theatre at 2.30 P.M. on Tuesday, the 30th. The retiring President, Dr. Reeve, in a short speech reviewed the events of the year of his presidency, after which Dr. Davy, the President for 1907–08, took the chair and returned thanks for his election. Mr. G. C. Franklin then moved a vote of thanks to the retiring President in the following terms:—

> That the warmest thanks of the Association be given to Dr. Richard Andrews Reeve for so ably presiding over the Association during the past 12 months, and that in accordance with By-law 36 he be, and he is hereby elected a vice-president of the Association for life.

This was carried by acclamation and Dr. Reeve returned thanks. It was then decided to accept the invitation of Sheffield for the meeting of 1908 and Mr. Simeon Snell was announced to the meeting as the President-elect for next year.

Dr. Deas, the President of the South-Western Branch, then rose and announced that the branch had decided to present to Dr. Davy, Mr. Russell Coombe, and Dr. William Gordon a copy of the work, "A Book of the South-West," which had been prepared in memory of the visit of the Association in place of the usual local guide-book. The book in question is one the object of which is to "provide a reliable work of reference for those who may be called upon to recommend a locality in Devonshire or Cornwall, either for a short stay or for a permanent residence." It contains a chapter on climatology, a historical chapter, a chapter on the "Secret of Cornwall" by Mr. A. Quiller-Couch, and various other interesting information. There are many illustrations, some of the most notable being those of the beautiful chancel screens which are such a feature of the West of England and the sister district of Brittany.

The usual special service in connexion with the meeting was held in the Cathedral Church of St. Peter at noon on Tuesday, July 30th. Many members of the Association attended in academical or other robes. These assembled in the Chapter House, where they awaited the Bishop, the other clergy, and the choir. A procession was then formed, the choir headed by the processional cross leading, followed by the Bishop, his chaplain bearing the pastoral staff, and the dean with the other clergy. Next came the medical men in a great diversity of gowns lending the colour to the proceedings. In the Cathedral nave was a large congregation, including the Mayor and the corporation who, with the other civic authorities, had gone in procession from the Guildhall. The sermon preached by the Bishop of the diocese was altogether admirable. His text was, "They that are whole need not a physician, but they that are sick," and on this theme he delivered a clear, well-reasoned discourse on the relative duties of the priest as physician of the soul and the medical man as physician of the body, and how in many cases their fields of action overlapped.

---

Tuesday evening was devoted to the introduction of foreign guests and colonial delegates and to the address of the President. The proceedings were held in the theatre, the stage of which was occupied by the officials of the Association and various members in academical dress, the doctors wearing their scarlet. The following were the foreign guests who had been invited, some of whom were unavoidably prevented from attending. Those present were introduced by Mr. Russell Coombe. Professor Dr. Paul Strassmann (Berlin), Professor Onodi (Budapest), Professor Stephane Leduc (Nantes), Professor Dr. Wertheim Salomonson (Amsterdam), Dr. Bonnefoy (Cannes), Dr. Chevalier Jackson (Pittsburg), Dr. E. Landolt (Paris), Dr. B. H. Buxton (Cornell), Dr. H. M. Fish (Chicago), Dr. E. E. Southard (Harvard, Danvers), Professor McCrae (Baltimore), Professor W. Northrupp (New York), Dr. M. S. Birkett (Montreal), Dr. Eretch (Brussels), and Dr. W. Oldright (Toronto).

---

After these came the colonial delegates, of whom the following is a full list:—Cape of Good Hope: Eastern Provinces, Dr. F. T. Waldron; Western Provinces, Dr. A. Jasper Anderson. Colombo and Ceylon Branch: Dr. F. Grenier and Dr. Fernando. Gibraltar Branch: Dr. A. W. W. Dowding. Griqualand West: Dr. Arnold H. Watkins. Melbourne: Dr. R. R. Stawell. Montreal: Dr. H. S. Birkett. Natal: Dr. W. R. Strapp. New Zealand: Dr. Albert Martin. St. John's, New Brunswick: Dr. A. B. Atherton. South Australia: Dr. H. Swift. South Indian and Madras Branch: Major F. J. Crawford, I.M.S., and Captain F. S. Ross, I.M.S. Sydney and New South Wales Branch: Sir Philip Sydney Jones, Dr. Ralph Worrall, and Dr. C. P. R. Clubbe. Toronto: Dr. Reeve, Professor Irving Cameron, and Dr. F. N. G. Starr. West Australian Branch: Dr. T. L. Anderson.

---

Dr. Deas then introduced the President, Dr. Davy, to the meeting, and the latter after a few words of thanks said that it was his very pleasant duty to announce that the Middlemore prize, consisting of an illuminated address and a cheque for £50, had been awarded to Mr. Sydney Stephenson for his essay on Ophthalmia Neonatorum with Special Reference to Causation and Prevention. Dr. Deas then presented the President, on behalf of the South-Western branch of the Association, with an heraldic jewel hanging from a Crowned X (the old Exeter mint mark) in commemoration of his call to his high office, after which Dr. Davy delivered his address, an abstract of which is published at p. 273. At the conclusion of the address a vote of thanks was moved by Professor Osler and seconded by Sir Philip Sydney Jones. Dr. Davy replied and the proceedings terminated.

---

We wish to express our warm thanks to Mr. Guy Elliston, the general secretary of the Association, and to the local officials, organising secretaries, and others for the great courtesy and assistance afforded in various ways to the representatives of THE LANCET.

## THE SECTIONS.

### MEDICINE.

WEDNESDAY, JULY 31ST.

Dr. WILLIAM GORDON (Exeter), the President of the section, made some brief introductory remarks, welcoming the members of the section to Exeter, and expressing his appreciation of the honour of being selected as President.

A discussion followed on

*The Indications for Operation in Cases of Intracranial Tumour.*

Dr. J. S. RISIEN RUSSELL (London), in introducing the discussion, said that there seemed to be a general impression that but little good could be hoped for from surgery in the treatment of intracranial tumour. This was an erroneous view which he hoped this discussion would dispel. If benefit did not result from surgical measures it was in most instances because the cases were not diagnosed early enough or not sent to the surgeon early in the course of the case when the growth was small. In making an appeal for a more careful consideration of the question he had no desire for intemperance in regard to the employment of operations on the brain but simply for less scepticism in regard to the value of such measures. He then proceeded to discuss the importance of diagnosis, in which connexion he called attention to the possibility of confusing cerebral tumour with disseminate sclerosis, general paralysis of the insane, cerebral thrombosis, and certain other affections, including hysteria, which in his experience had been operated upon in mistake for intracranial tumour, and he emphasised the important points which serve to distinguish these affections from cerebral tumour. In dealing with the conditions under which operation is to be recommended he drew a distinction between cases in which it was advocated with a view to effect cure and those in which it was undertaken merely as a palliative measure. Before advising operation in the first class of cases it was essential that the exact localisation of the tumour should be determined, and this not only in so far as to be able to say that it occupied the brain, as opposed to the cerebellum or pons, but also which cerebral or cerebellar hemisphere was involved and in what part of the hemisphere it would be found. Tumours situated near the surface of the cerebrum and those occupying one lateral lobe of the cerebellum or the lateral recess were the most favourable for operation, while those in the mesencephalon were inaccessible and those in the deeper parts of the cerebral hemispheres too remote to permit of a reasonable chance of cure. The probable nature of the growth had an important bearing on the question under consideration owing to the possibility of recurrence in the case of a malignant growth, which naturally offered much less chance of cure than when the tumour was benign. The prognosis was also less favourable in cases in which diffuse or multiple tumours were present than when the neoplasm was circumscribed or single. In referring to syphilitic tumours, he laid stress upon the fact that surgical intervention was necessary in a considerable proportion of these cases and his experience had proved that it was useless to waste valuable time in pushing antisyphilitic treatment when the symptoms were not yielding to mercury and iodide of potassium. Another important consideration was the degree of risk to life from the operation and its immediate effects, with regard to which he hoped to hear the opinions of some of the surgeons who were to take part in the discussion. His own opinion was that where other considerations justified the belief that a tumour which had been diagnosed and accurately localised could be successfully reached and removed by the surgeon the risk to life ought not to deter the physician from recommending the operation. The amount of permanent defect likely to result from the operation should also be taken into consideration. In cases where paralysis was to be expected he would have no hesitation in advising operation, as death was the only alternative; but it was a much more difficult problem when permanent aphasia was likely to result. The majority of people would probably hesitate, if indeed they could ever bring themselves to accept an alternative to which death seemed almost preferable. With regard to palliative operations, there could be no question as to the beneficial effects of trephining for the relief of abnormal intracranial pressure without removal of the whole or part of a tumour, for life could be thus prolonged and distressing symptoms relieved. He emphasised the importance of this procedure as a means of arresting optic neuritis and of saving sight, though it must not be supposed that every patient suffering from optic neuritis had an intracranial tumour, or that optic neuritis of toxic origin would be relieved by trephining. In conclusion, he referred to the circumstances under which lumbar puncture could be substituted for trephining. It should, however, be regarded only as a palliative measure which could not be expected to relieve the symptoms permanently. It was valuable as a means of relieving urgent symptoms of pressure, when to wait for a surgeon to trephine would be to allow the patient to die, or when the patient's condition was too bad to permit of the major operation. He considered that it was a procedure which should be employed for diagnostic purposes and for the relief of urgent symptoms in cases of intracranial tumour, but which should not be regarded as likely permanently to relieve symptoms, to prolong life, or to effect a cure. In quoting cases in illustration of his remarks he referred to a typical example in which the diagnosis of cerebral tumour was easy and the operation successful; to another in which, although the operation was successful, the diagnosis was less accurate, in that an intramedullary cyst of the cerebellum was discovered instead of a tumour external to the organ; to a third, in which the diagnosis of tumour seemed certain, and yet this was not discovered at operation, although the patient subsequently recovered from the symptoms that suggested the diagnosis which led to the operation—cases of this kind were referred to in Germany as "pseudo tumours; to a fourth, which showed how cerebral thrombosis might be readily mistaken for tumour; and to a fifth, in which disseminated sclerosis accounted for the clinical picture, although the earlier symptoms strongly suggested a tumour of the mid-brain.

Sir **William Macewen** (Glasgow) referred to the fact that he had found it unsafe to trust to the classical symptoms of intracranial tumour in diagnosis and mentioned a case in which early in his work on intracranial surgery he had refused to operate, which subsequently proved to be of this nature. He now looked carefully at other symptoms, including the state of the mental condition, in order to assist him in arriving at a diagnosis. He was glad to hear what Dr. Risien Russell had said in connexion with the removal of syphilitic growths. Early in his work he had been criticised for operating in such a case, but he held that where caseation had occurred and where the gumma was large no amount of potassium iodide and of mercury would remove it, and even if they could do so it would require a very long time. He therefore operated early after antisyphilitic treatment had received a sufficient trial. With reference to the carrying out of operation in two stages, the custom in Scotland was to complete the operation at once if the condition of the patient permitted this to be done, but otherwise to carry it out in two stages. In regard to the results of operation, he never told the patient definitely what the result would be, for while sometimes permanent paralysis results he had been greatly impressed by the fact that sometimes when he expected to find definite and permanent paralysis afterwards it had completely cleared up. In regard to the choice of cases for operation, if he were definitely of opinion that permanent hemiplegia would necessarily follow he would hesitate to advise operation, as also if aphasia were certain to follow. Referring to lumbar puncture, except for purposes of diagnosis and for giving temporary relief to pressure symptoms he did not think there were yet sufficient data to determine its value as a means of treatment.

Dr. **J. Michell Clarke** (Bristol) referred to the difficulty in diagnosis in those cases mentioned by Dr. Risien Russell, to which the name of "pseudo-tumour" had been applied in Germany, in which the symptoms were those of cerebral tumour but in which no tumour could be found, and gave an account of the common clinical features in a certain type of these. Nonne had reported 11 cases of this kind. As a rule, the patients were women and generally young. Cerebral tumours may first come under observation when hæmorrhage occurs into them and thus give rise to difficulty in diagnosis. The difficulty in localisation was also increased by not knowing the size of the tumour. There was also great difficulty in connexion with growths in the temporo-sphenoidal region. He alluded to cases of tumour of the cerebellum and mentioned cases he had seen. There was especial difficulty when the tumour began by causing auditory symptoms, such as those of Ménière's disease. Since the auditory symptoms precede the actual symptoms of tumour by a long period these were often due to neurofibroma of the auditory nerve and were favourable for operation. He discussed the significance of local tenderness, the alteration of the percussion note over the skull, and the occasional help afforded by alterations in the shape of the skull which might only be brought to light on shaving it. Treatment of intracranial tumour practically resolved itself into operation. In regard to syphilitic cases, he recommended that if three to four weeks' treatment by potassium iodide and mercury failed to give definite relief it was useless to persist and operation should be performed. He supported the views expressed as to the great value of palliative trephining. In connexion with the question as to operation in one or two stages, he advised that, where possible, an estimation of blood pressure should be carried out during the operation and where this was well maintained that the operation should be completed in one stage.

Mr. **R. Marcus Gunn** (London) would only discuss the matter of operation in regard to its effect upon vision and the indications for operation. He described the manner in which the optic nerve comes to be affected in cerebral tumour. It was a clinical observation of great importance that optic neuritis was compatible with perfect vision as shown by Dr. Hughlings Jackson. It was also definitely established that optic neuritis may occur and leave no opathalmoscopic sign. Although optic neuritis or papillitis was so called actual evidence of its inflammatory nature was wanting. Mr. Gunn held the view that the changes observed are an evidence of œdema and that the excess of fluid within the intersheath space surrounding the nerve acts mechanically. He reminded his audience of the anatomical relations of the optic nerve and brought forward evidence supporting his views. Various clinical stages might be recognised in the course of optic neuritis or "tumour papillitis," and he proceeded to describe five of these. In the first stage there was redress of the disc with loss of definition in its edges, slight prominence of its surface, and narrowing of the physiological pit. In the second stage there was increased swelling of the papilla with disappearance of the physiological pit. The retinal vessels at this stage showed signs of retarded circulation. In the third stage the papilla gave evidence of further swelling and the venous distension was very marked. Fine folds appeared in the œdematous retina and retinal hæmorrhages might occur. In the fourth stage the papilla was more opaque and sometimes more prominent, the hæmorrhages increased in size and number; vision might become impaired at this stage. In the fifth there was decreasing vascularity of the papilla and parts of its surface became paler, the prominence persisted or slowly subsided. In regard to the first three stages the prognosis was good as regards vision after operation; it was bad in the fourth, and in the fifth it was useless to undertake operation with a view to improve vision. In connexion with the results of operation Mr. Gunn had found that the degree of swelling of the papilla afforded no indication of the visual prognosis; that retinal hæmorrhage was no contra-indication; that subsidence of the swelling of the disc is first apparent some days after the opening of the dura mater; that the effect on the papillitis is not earlier or better when the tumour is removed than when the dura mater is freely opened, and that the improvement after operation may ultimately be very satisfactory, although long delayed. Some of the most striking results of operation as regards vision were seen after operation for cerebellar tumour. Comparing the various methods of relieving tension he referred to lumbar puncture, but said there was as yet insufficient experience as to its value but it would probably need to be repeated frequently. Opening the optic nerve sheaths behind the globe was difficult and less successful than trephining the skull.

Dr. **G. Newton Pitt** (London) would like to know in what proportion of the cases of cerebral tumour operation was possible and its results satisfactory. He drew attention to the difficulty in diagnosis occasioned by internal hydrocephalus following accident. He quoted a case of cerebral tumour in which repeated drainage of the lateral ventricles gave relief. He inquired whether the cases of so-called "pseudo tumour" might possibly be due to obsolescent tubercle.

Mr. **Donald J. Armour** (London) was of opinion that the surgery of tumours of the brain was now established on a scientific basis and its value was being more definitely recognised. It was now possible to operate with very much less risk as regards shock than formerly. There was considerable confusion in the application of the word "operable" to these cases, some authors using it in the sense of curable only. He differentiated three classes of cases which were operable in the sense of curing or relieving the patient: first, those in which the tumour could be completely removed and the patient cured; secondly, those in which partial removal could be effected with marked though temporary benefit; and thirdly, those in which the tumour could not be removed at all but the patient could be afforded relief from the painful symptoms. There was, however, no absolute distinction, since an operation begun as radical might end as palliative, though it was important not to regard palliative operation as a substitute; removal should be carried out wherever possible. There were two kinds of cases in which palliative or decompressive operations were to be recommended, those in which the tumour, though localised, could not be removed, and those in which it could not be localised and yet some relief to the symptoms was necessary. In performing a palliative or decompressive operation the opening should be made over a "silent" or unimportant area and means should be taken to prevent an unnecessarily large hernia cerebri.

Professor W. **Osler** (Oxford) held that a great deal of the scepticism in regard to the value of operation in cases of cerebral tumour was the result of the bicipital condition of neurology. He deprecated operation in these cases at the hands of general surgeons and would prefer to see neurology a special department, so that there would not be neurological physicians and surgeons, but medico-chirurgical neurologists, properly trained in the anatomical, physiological, clinical, and surgical aspects of their subject. In connexion with the diagnosis of cerebral tumour he drew attention to the curious interval which may occur in the symptoms and illustrated this by reference to a case of his own in which there was a lapse of all the symptoms except the optic neuritis. In syphilitic cases he thought large cerebral gummata would clear up under antisyphilitic treatment without operation. Statistics were badly needed of the results of the two forms of treatment.

Dr. D. B. **Lees** (London) had observed relief from tapping the ventricles in some cases. The operation was a simple one if Kean's guide were carefully followed. He had also seen it performed with advantage in cases of hydrocephalus at the Children's Hospital, Great Ormond-street. He emphasised the occasional value of prominence of bone over the situation of the tumour in children, especially in cerebellar tumour.

Dr. **Edwin Bramwell** (Edinburgh) urged that in every case in which operation was undertaken there should be an understanding between the physician and the surgeon as to what should be done, in so far as it is possible to determine that beforehand, including various contingencies such as the subcortical situation of the tumour.

The **President** of the section mentioned two cases shown by himself in which subtentorial trephining had resulted in permanent relief of symptoms of pressure, in one of them after repeated tapping of the lateral ventricles had failed to do more than give temporary relief.

Dr. **Risien Russell**, in reply, reviewed the remarks of the various speakers and was glad to find that Sir William Macewen agreed in regard to the operative treatment of some syphilitic tumours. He endorsed the remarks of Mr. Gunn and Mr. Armour in regard to the effects of operation and he was very glad that Professor Osler had emphasised the necessity for specialist neurological surgeons.

Dr. A. **Gardner Robb** (Belfast) read a paper entitled

*Observations upon the Recent Outbreak of Cerebro-spinal Meningitis in Belfast.*

The outbreak began during the last days of December of last year; five members of the same family were suddenly attacked, of whom three recovered and two died. The diagnosis was confirmed by lumbar puncture in the three that recovered and in the two fatal cases by necropsy. On Jan. 24th another family was attacked, five cases occurring, of which four were fatal within 30 hours of the onset. In all there were 230 cases. Four types of the disease were usually described, the acute fulminant, the ordinary, the chronic, and the abortive; to these Dr. Robb added a fifth—the mild, which was important because these cases were liable to be overlooked. He described cases illustrative of each of these types and then dealt with the individual symptoms. Headache was usual, initial vomiting occurred in over 95 per cent., delirium was common, and the temperature varied greatly and was of little value as regards diagnosis or prognosis. In the ordinary type there was a temperature of 102° F. or more on admission to hospital, falling to normal on the second or third day, but in chronic cases there was sometimes a daily variation for seven weeks. The pulse was slow and full in severe cases; a rapid and small pulse was more common and of more favourable import. Rigidity of the neck was constant in all but a few cases; arching of the spine was common in infants, but rare over the age of five years. Squint, always of the internal variety, occurred in 28 per cent. of the cases. Facial paralysis developed in 11, hemiplegia in four, and aphasia in three. Purpuric rashes were observed in less than 20 per cent. Slight general enlargement of lymphatic glands was almost constantly present. Of the 230 cases 162 ended fatally. Three varieties of serum were employed in treatment but appeared to be without influence on the disease. Morphine and opium were employed to relieve symptoms but the greatest relief to the headache was afforded by phenacetin. No relief was obtained from the use of mercury, iodides, bromides, quinine, and the salicylates. The diagnosis was rarely in doubt. Valuable confirmation was obtained by the opsonic index and agglutination methods. After the sixth day they were more reliable than lumbar puncture. They had found no evidence of direct infection by contact.

Professor **Osler** pointed out that this disease was most mysterious in its epidemic peculiarities. The disease in its sporadic form was always with us and he held that post-basic meningitis was due to the same organism as the epidemic form.

Dr. F. J. **Poynton** (London) said that during the last year there had been a marked increase in the number of cases of post-basic meningitis seen at University College Hospital and Great Ormond-street.

Dr. H. L. **McKisack** (Belfast) said that the evidence of the Belfast attack seemed to indicate that the organism in the post-basic meningitis, if not a different species, was of a different strain from that in the epidemic cases.

Dr. **Robb**, in reply, supported Dr. McKisack's remarks and said that opsonic and agglutination experiments with the Belfast cocci showed them to be identical with those from Hamburg, Glasgow, and New York but different from those of post-basic meningitis.

A paper was read by Dr. **Clive Rivière** (London) on

*The Tuberculin Treatment of Tuberculosis in Children.*

Cases of tuberculous disease might be divided into two classes—those in which the disease was strictly localised and those in which it was accompanied by some general manifestations. The chief success was obtained in the former class, although much improvement could be produced in the latter. Success or non-success was largely a matter of dosage, most of the bad results being obtained from over dosage. He gave $\frac{1}{12000}$th to $\frac{1}{8000}$th of a milligramme for infants of one year, $\frac{1}{4000}$th for a child of five years, and $\frac{1}{3000}$th after that age. Improvement resulted in three ways: first, an improvement in the general health; secondly, a mental change, the child becoming more cheerful; and thirdly, local healing.

## STATE MEDICINE.

### Wednesday, July 31st.

The section devoted to State Medicine was held on Wednesday morning, in the rooms of the Young Men's Christian Association, under the presidency of Dr. **Arthur Newsholme** (medical officer of health of Brighton). After a few introductory words of welcome to the members present Dr. Newsholme delivered his presidential address, the subject being

*The Coördination of the Public Medical Services.*

He said: The greatest successes of medicine have been in the direction of preventing disease rather than of curing it, and even surgery owes a large debt to the bacteriologist and to preventive medicine for its work in germicides. This work of prevention is by no means to be confined to the notifiable infectious diseases, nor even to the non-notifiable class, but beyond these are such diseases as pneumonia, pulmonary tuberculosis, and syphilis, and further still there is the much wider question of preventing diseases from reaching their later and more severe stages by earlier diagnosis and more complete and efficient treatment of the disease as soon as it is recognised. Statistics reveal the fact that of the total mortality more than half arises from forms of disease which are capable of prevention and which with early diagnosis and efficient treatment might be so far palliated or prevented as to remove the loss of time and consequent loss of value to the community arising from the death or invalidity of the person attacked. Further than this, as knowledge increases and improved methods of dealing with all classes of disease come into action, it will shortly be necessary to increase largely the number of diseases which can be classified under the heading of preventable disease. For example, the whole class of diseases arising from syphilis are still being far too much neglected when the effects upon the coming generation are considered. Hitherto the self-denying efforts of the medical profession have been mainly in direction of personal hygiene while the community at large has been forced to accept in great part a responsibility for the prevention and treatment of some of the more important epidemic diseases. The relationship which is so constantly asserted to exist between poverty and disease must be looked at from both sides, and disease is by far the more important as a cause of poverty than is poverty of disease. Disease may be due to poor surroundings but is rarely due to privation and (except in young children) to lack of sufficient food. Therefore it may be possible to prevent people from becoming poor by keeping them free from disease. What is being done officially? I may refer to the action of municipal and local sanitary authorities in the utilisation of the services of the medical officer of health for diagnosis and for precautionary measures against further outbreaks, coupled with the provision of home treatment and the distribution of antitoxin and the employment of municipal nurses. The extension of all these measures to the prevention and mitigation of pulmonary tuberculosis and the provision of gratuitous bacteriological verification; the supervision of midwives, and in one town even the financing of an ordinary general hospital from part of this municipal work. Boards of guardians are in charge of vaccination and of the gratuitous administration of medical relief which is better in theory than it has proved in practice; the administration and use of Poor-law infirmaries as adjuncts to the general infirmary by the admission of cases unsuited to the latter are also part of their functions. School authorities are also awaking to certain needs; the regular inspection of children (shortly to be made compulsory) and the need for systematic examination of bodily defects have been seen to be matters of grave importance, and the school doctor must be followed by the school nurse, and examination by some measure of treatment. There are also minor details, such as the establishment of municipal milk depôts and the free distribution of diarrhœa mixtures. It must be remembered that all these things except Poor-law medical relief are carried out irrespectively of the test of poverty. Thus it will be seen that it is impossible, logically or practically, to separate prevention and treatment, and this will become increasingly true as measures for prevention are efficiently carried out. The supervision of preventive measures generally necessarily involves more or less treatment. Thus it is not surprising that medical men complain of the decay of private practice; the number of deaths occurring in institutions has risen in 30 years from 8·3 to 16·2 for the whole of England and Wales, and for London alone from 16·3 to 34·9; these figures are eloquent in their lesson. One person in every six dying in the country dies in an institution, and in London the proportion is double —viz., 1 in 3. But even with this vast array of public medical services the waste, overlapping, and inefficiency of the whole thing must be at once obvious. The present condition of things is equally unsatisfactory to both doctor and patient; the former considers that he is underpaid and the latter, while he may not think much about the fee, feels that he is not getting from his club doctor what he can get elsewhere at a cheaper rate and often in a better form. And so for want of a system and of coördination the whole service fails of its proper ends in many ways. In the first place, there is little chance of early diagnosis and the resulting dangers are obvious. Next, a delay in diagnosis is followed by a curtailed treatment, and much of this is given under conditions of loss of time which involves a serious loss to the community. Coördination is entirely lacking and vast quantities of valuable material are lost and wasted for want of a proper central organisation. This applies not only to the conditions of disease but to those which induce disease and thus prevention is gravely hindered. Coördination may be exemplified by the methods in vogue at Brighton for dealing with tuberculosis, while no better example of incoördination can be adduced than the present chaotic methods of school examination in which there is a complete lack of intelligent coöperation between the various workers. The present condition of the medical services must be considered to be transitional, and as it seems impossible to arrest the steady trend of all communities to treat an increasing amount of general disease at the expense of the community under either compulsory or voluntary systems it is better that the problem of coördination should be faced and that some attempt should be made at least to get value for money in the performance of the work—a thing which no one gets at present. The economic aspects of the problem are, of course, serious and far-reaching; the question of pauperising the people may be dismissed after the experience of free education; in fact, such a system is more likely to increase self-help. Such a public medical service must centre round the present sanitary departments; it must embrace every form of disease and every means of maintaining health, and thus information which is of the highest importance to public health must no longer be run into culs-de-sac and wasted but must be utilised to the full extent for the public welfare.

Dr. H. COOPER PATTIN (medical officer of health of Norwich) congratulated Dr. Newsholme on his paper. He desired particularly to emphasise the analogy of free education to a free medical service. The present evil was that the key to the provision of free medical service was destitution, which was a mistake. The public required sooner or later the reorganisation of the public medical services and this must take the form of a coördinated medical service centred on the present sanitary authority. This might be hoped to result in the elimination in time of the most dangerous factor in the present production of disease, namely, delay. Disease must be sought out and prevented and we must not wait for it to cry aloud for assistance. There was also a grave need for the provision of regular instruction in hygiene in elementary schools so that the coming generation might learn to coöperate with the profession and the community in the prevention of disease.

Mr. R. DENISON PEDLEY (London) laid especial stress upon the great importance to the community of coöperation between the health department and the dentist. Infantile mortality is one of the greatest problems of the day and is largely due to improper feeding; the same cause is also largely responsible for the production of inferior dental tissue. The delay spoken of by Dr. Pattin was amply illustrated by cases attending a dental out-patient department. The mothers among the poorer classes are hopelessly ignorant upon the question of proper food.

Mr. T. GARRETT HORDER (Cardiff) spoke most strongly on the need for coördination but also emphasised the need for home visiting and home teaching. In this scheme of coördination the public vaccinator must find a place as an integral part of the work of preventive medicine. As a regular visitor to the homes of the poor he had exceptional facilities for acting as a health missioner.

Mr. H. H. TIDSWELL (Torquay) was pleased to find Dr. Newsholme in sympathy with the general practitioner. He thought elementary school children were martyrs who needed the championship of the medical profession. The inspection of children could only be efficient by coördinated work between the school medical officer and the private practitioner who sees the child at home. Too many children were allowed to sit all day in wet clothes and this needed reform.

Dr. WALKER (Edinburgh), as an old collaborator of the President, considered that the future of the national health was bound up with this principle of coördination. There would inevitably be mutual jealousies to be overcome but these would eventually disappear in the cause of humanity.

Surgeon-General Sir CHARLES M. CUFFE, A.M.S. (London), offered his views as a councillor, a guardian, and a member of an education committee: he felt that by hospital abuse much wrong was being done to the medical profession; the treatment in workhouse infirmaries is valuable and as it fortunately does not disfranchise the receiver there is less objection to it. There was undoubtedly a need for coördination between the hospital and the workhouse infirmary so that the empty beds in hospitals could be utilised. He compared the French system and pointed out that in France the money was raised in such a manner that the tax was not felt.

Dr. J. Sinclair Holden (Sudbury) spoke as a rural medical officer of health on the importance of reaching the home through parish and district nurses. Such nurses, though not municipalised, are often assisted by grants.

Mr. Herbert Jones (Hereford) spoke as a representative of the overworked body of representatives on the number of ethical disputes. If the public medical service were once organised such ethical matters would readily be solved. Hospital abuse was even more demoralising than pauperism to those who committed it.

Professor H. R. Kenwood (London) felt wholly in accord with the principles enunciated in the address, but he also regretted greatly that no opportunity was given for a detailed discussion of the public medical service.

Dr. J. E. Molson (Worthing) felt that some Government provision should be made by coördinating the present system of school inspection and Poor-law with the present sanitary departments.

Dr. J. H. H. Manley (West Bromwich) pointed out that the scheme formulated by the President was absolutely part of Socialist views which would eventually prevail. The combination of the Poor-law administration with the local sanitary administration was already in sight; the municipalisation of voluntary hospitals, long ago advocated by Havelock Ellis, must follow; and then when Socialist views prevailed the working man would no longer condescend to accept charity, not even free boots and free breakfasts. Opposition to the proposal was certain but its evolution was also certain. It was as certain to come as free education had been and he should rejoice to see it.

Dr. E J. Slade-King (Ilfracombe) said that there was a spirit of democracy abroad and it was for the medical profession to consider the questions which were arising. He alluded to the Poor-law Commission now sitting and to the difficulty of rural nursing. The ignorance of rural mothers as to their children was colossal. They fed their children too little, too often, and on the wrong food. The storage of food was even worse and the milk was polluted as soon as it arrived and put in contact with the pig's food.

Dr. A. H. Bygott (Birmingham) also emphasised the grave results arising from delay.

Mr. Sack Noy Scott (Plymstock) failed to see how the ordinary private practitioner could be compelled to come in the scheme. The process of compulsion seemed to him to present many difficulties but at the same time he felt himself compelled to assent to the principles enunciated by Dr. Newsholme.

Dr. Walter Brown (medical officer of health of Ayr) said that he thought they were going in the direction of State socialism but they must not forget the general practitioner and see that he was paid for what he did. The tendency of the laity was to expect the general practitioner to do something for nothing.

The President of the section briefly replied, pointing out that his paper purposely avoided detail; the details would be found in his evidence before the Poor-law Commission. This was really a "second reading" and for the purpose of enunciating a principle which he was quite sure would eventually commend itself.

Two papers were then read relating to

*Vaccination in its Preventive and Administrative Aspects.*

Mr. Garrett Horder dealt with the hardships which would be endured by reducing the fee and the number of visits which were being required by the Government coupled with the clerical work entailed upon public vaccinators.

Dr. A. W. Gilchrist (Nice) in a paper entitled

*The Necessity of Increasing the Degree of Immunity against Small-pox,*

said: 1. The further relaxation of the law of compulsory vaccination in England entails the necessity upon the intelligent sections of the community of increasing individual immunity against small-pox by repeated vaccinations. 2. Epidemic and infectious diseases can be shown to obey general sociological laws in their evolution and incidence; the crusades caused the wide-spread prevalence of leprosy and plague, the circumstances attending the discovery of America induced the appearance or the diffusion of syphilis, and the Mahomedan invasion of Asia brought as its sequel the epidemic form of small-pox. The recent recrudescence of this last disease in the West is thus attributable to several causes: (1) The three late wars, Spanish-American, South African, and Russo-Japanese; (2) the failure or defective activity of our vaccines; (3) the increasing virulence of the more rapidly imported disease; and (4) the growing number of the unprotected. 3. Most civilised countries, in contrast to England, are assuming a more decided attitude of defence against the disease. Thus, France has promulgated a new sanitary (public health) law more complete even than the German enactments. It might be added that this law partakes to a certain extent of a military character, the French remembering that in the Franco-German war of 1870 their losses from small-pox were equivalent to the strength of a *corps d'armée* while those of the German's were insignificant. 4. The actual conditions demand a more thorough knowledge of small-pox on the part of medical men. The disease undergoes modifications of type and "epidemies frustes" often conferring unsuspected immunity have been described. Here, again, England compares unfavourably with some foreign states. In a recent trial an English medical man pleading ignorance of a case of hæmorrhagic small-pox was acquitted.

A short discussion followed in which Professor Kenwood (who had now taken the chair), Dr. F. J. H. Coutts (Blackpool), and Mr. Sack Noy Scott took part, and a motion was carried calling upon the Council of the Association to approach the Local Government Board on the subject of the new vaccination order.

## LARYNGOLOGY AND OTOLOGY.

### Wednesday, July, 31st.

This section opened with a discussion on

*The Differential Diagnosis of Tuberculous, Syphilitic, and Malignant Disease of the Larynx,*

by Sir Felix Semon, K.C.V.O. (London), and Dr. W. Jobson Horne (London).

The following members subsequently joined in the discussion: Dr. N. C. Haring (Manchester), Mr. Herbert Tilley (London), Dr. J. Dundas Grant (London), Dr. G. W. Hill (London), Dr. Scanes Spicer (London), Dr. H. S. Birkett (Montreal), Dr. W. S. Syme (Glasgow), Dr. Adolph Bronner (Bradford), Dr. J. B. Ball (London), Dr. P. Watson Williams (Bristol). The President (Dr. R. McKenzie Johnston of Edinburgh) summed up the discussion and Sir Felix Semon and Dr. Horne replied.

A paper was read by Mr. W. Stuart-Low (London) on

*Submucous Turbinectomy.*

The paper was discussed by Dr. Hill, Dr. Jobson Horne, and Dr. Watson Williams, and Mr. Stuart-Low replied.

In the absence of the author one of the secretaries read a paper by Dr. Robert Fullerton (Glasgow) on

*A Tumour which was removed from the Right Tonsil and which is regarded as being a Teratoma.*

The paper was illustrated with drawings and microscopic slides of the tumour.

## OPHTHALMOLOGY.

### Wednesday, July 31st.

The President, Dr. L. H. Tosswill (Exeter), made some opening remarks, in which he pointed out that the West of England Eye Infirmary at Exeter was founded only four years after Moorfields.

Dr. E. Landolt (Paris) opened the discussion on the Construction and Manipulation of the Principal Instruments used in Eye Surgery. Some discussion took place, all the speakers agreeing with Dr. Landolt.

Mr. Simeon Snell (Sheffield) read a paper on An Inquiry into the Cause of Blindness in 350 Inmates of a Blind School. Very nearly half of the cases of blindness were due to ophthalmia neonatorum, which, he pointed out, was an absolutely preventable disease; the other chief causes were optic atrophy, congenital cataract, and sympathetic ophthalmitis.

Mr. Sydney Stephenson (London) moved the following motion:—

> That in the opinion of this section the British Medical Association should take steps to the prevention of ophthalmia neonatorum.

This was seconded by Dr. K. A. GROSSMANN (Liverpool) and was carried.

Mr. F. RICHARDSON CROSS (Bristol) and Dr. J. HINSHELWOOD (Glasgow) thought that the ophthalmic surgeons should take up seriously the question of trephining for the relief of intracranial pressure and for the relief of optic neuritis.

Dr. LANDOLT had found that in Paris there were much fewer cases of ophthalmia neonatorum.

Dr. WILLIAMS (Liverpool) said that in his district the disease was increasing, and this occurred nearly always in cases attended by midwives.

Dr. A. TROTTER (Perth) said that he hardly ever saw a case now.

Mr. SNELL, in reply, said that unfortunately in Sheffield ophthalmia neonatorum was not diminishing.

Dr. H. FISH (Chicago) read a paper on the Relation of Disease of the Nasal Accessory Sinuses to Optic Neuritis. He affirmed that many cases of optic neuritis were due to sinus disease.

Mr. R. PICKARD (Exeter) described a case bearing on this point.

Dr. E. D. BOWER (Gloucester) quite agreed as to the relation of the two diseases.

Dr. REBER (Philadelphia) thought that the nose was much neglected by ophthalmic surgeons and that unilateral optic neuritis was nearly always due to this cause.

Mr. W. J. CHICHELE NOURSE (London) also described some cases.

Dr. A. HILL GRIFFITH (Manchester) asked if the cases were really optic neuritis or retro-ocular neuritis; if the latter, anything cured them. He asked if those cases had a large central scotoma as the retro-ocular cases had.

Dr. FISH, in reply, said that some of his cases were certainly retro-ocular in nature but many were not.

## PATHOLOGY.

### WEDNESDAY, JULY 31ST.

The section of Pathology was held in the Barnfield Hall, under the presidency of Professor R. MUIR (Glasgow University) who opened the proceeding by calling upon Dr. WILLIAM HUNTER (London) to introduce the subject of Pernicious Anæmia and Allied Conditions. Dr. Hunter, who discussed at length many aspects of pernicious anæmia, was followed by Dr. LOVELL GULLAND (Edinburgh), Dr. C. H. MELLAND (Manchester), Dr. A. G. GULLAN (Liverpool), Professor J. LORRAIN SMITH (Manchester), Dr. R. HUTCHISON (London), Dr. A. E. BOYCOTT (London), Professor A. R. FERGUSON (Cairo), Professor I. WALKER HALL (Bristol), Dr. F. G. BUSHNELL (Brighton), and Dr. F. M. POPE (Leicester).—After a few remarks of a general character from the PRESIDENT, Dr. HUNTER briefly replied and the section turned to the consideration and discussion of a paper by Professor I. WALKER HALL on the Estimation of Fat in the Fæces, of one by Dr. FRANK C. EVE (Hull) on Motile Bodies in Pathological Cerebro-spinal Fluids and their Origin from Red and White Corpuscles, and of a short communication from Professor J. M. BEATTIE (Sheffield) on a Sporozoon in Aural Polypi. The meeting adjourned.

## TROPICAL DISEASES.

### WEDNESDAY, JULY 31ST.

The President of the Section, Mr. JAMES CANTLIE (London) gave a digest of the additions to our knowledge of tropical diseases made during the last two years—that is, since this section held its previous meeting. Professor W. J. SIMPSON opened a discussion on Antimalarial Sanitation, in which Professor HANS ZIEMANN (Cameroons, West Africa), Major A. H. NOTT, I.M.S., Dr. W. J. PROUT, (Liverpool), Dr. ANDREW BALFOUR (Khartoum), Dr. LOUIS SAMBON (London), Major G. F. BIRDWOOD, I.M.S., Sir PATRICK MANSON, Dr. H. MARCUS FERNANDO (Ceylon), and Lieutenant-Colonel GILES, I.M.S. (retired), took part.

Major LEONARD ROGERS, I.M.S., gave a Lantern Demonstration of Temperature Charts illustrating the curves in various Indian fevers, including malarial fevers, seven-day fever, three-day fever, typhoid fever, and kala-azar.

## DISEASES OF CHILDREN.

### WEDNESDAY, JULY 31ST.

The Section of Diseases of Children was held at the Young Men's Christian Association under the presidency of Mr. A. H. TUBBY (London).

The proceedings were opened by a short speech in which the PRESIDENT outlined the business before the section and introduced the opener of the discussion, Mr. D'ARCY POWER (London), who then sketched out the chief features of the Diseases and Displacements of the Testicle.

He was followed in some detailed observations by Mr. RUSSELL J. HOWARD (London), Mr. W. E. DIXON (Norwich), and Mr. W. MCADAM ECCLES (London), Dr. G. H. EDINGTON (Glasgow), Mr. J. P. LOCKHART MUMMERY (London), Mr. P. G. Lee (Cork), Mr. E. M. CORNER (London), Mr. W. F. BROOK (Swansea) and the PRESIDENT also contributing to the debate.

Papers were read by Dr. EDINGTON on Some Abnormalities of the Penis, by Mr. H. T. GRAY (London) on Some Cases in which Meckel's Diverticulum was present, by Mr. C. A. R. NITCH (London) on Cases of Pneumococcic Arthritis, and by Mr. MUMMERY on Cases of Prolapsus Recti.—Mr. BROOKS, Mr. S. STEPHENSON (London), Mr. MUMMERY, Mr. CORNER, Mr. LEE, and Dr. E. CAUTLEY (London) joined in the discussion.

## ELECTRICITY.

### WEDNESDAY, JULY 31ST.

The proceedings were opened by the PRESIDENT, Dr. LEWIS JONES (London), who briefly welcomed those of the members present, and after paying a generous tribute to the work of Professor Stephane Leduc of Nantes in medical electricity called upon the latter to give the opening address, which was on the "Ions in Medicine."

Mr. A. W. RUD (London) then addressed the section on the Use of the Cryptoscope in Operations for Renal Calculi. His plan is to use a special sterilisable form of cryptoscope by which the kidney can be examined by the screen when brought out through the incision. By this means the renal calculi can be removed by the smallest possible opening.

Professor WERTHEIM SALOMONSON (Amsterdam) described the Einthoven galvanometer, which is an instrument of exceeding delicacy and invaluable for the study of muscle currents and other fine and accurate work.

The VICE-PRESIDENT, Dr. J. DELPRATT HARRIS (Exeter), then took the chair, while Dr. LEWIS JONES showed and explained some oscillograph tracings of medical coil currents.

Dr. HUGH WALSHAM (London) and Dr. HALES DALLEY (London) gave a description and demonstration of the use and advantages of the ortho-diagraph for recording the actual size of the heart, &c.

The first morning's proceedings were terminated by the reading of a paper on the Effects of High-Frequency Currents on the Urinary System, by Dr. W. F. SOMERVILLE (Glasgow).

## NAVY, ARMY, AND AMBULANCE.

### WEDNESDAY, JULY 31ST.

This section met under the presidency of Deputy-Inspector-General J. PORTER, R.N., who in his introductory remarks described the vast and almost revolutionary strides made by the Royal Army Medical Corps in regard to preventive medicine. He remarked that in the medical service of the Royal navy many improvements had been made during the past decade. Fleet-Surgeon A. GASKELL, R.N., read a paper on the treatment of the wounded in naval actions, and he was followed by Lieutenant-Colonel A. M. DAVIES, R.A.M.C., who spoke on preventive measures against enteric fever and on its spread by personal infection, which he defined as direct or semi-direct contagion. The next paper, on the frequency of aneurysms in the Royal Navy, was read by Fleet-Surgeon P. W. BASSETT-SMITH, R.N., and the last paper was by Staff-Surgeon G. E. DUNCAN, R.N., on a form of oral *filter* for use in operating-rooms.

# THE ANNUAL EXHIBITION.

The Victoria Hall in Queen-street presented quite an animated and picturesque scene from beginning to end. The stalls were tastefully arranged, the stage at one end of the hall and the orchestra with the organ at the other serving to break the monotony of avenue after avenue intersected with an almost geometrical exactness by transverse rows. The organising committee had evidently contrived to separate as far as possible the various classes of exhibits, so that no two adjoining stalls were devoted to the same subject of exhibition. Now the visitor was confronted with a large assortment of surgical instruments, next he was face to face with some special foods, then he was asked to consider the merits of various beverages, and again at the next stall some of the latest developments of x ray apparatus were to be seen. The largest representation was perhaps that of surgical appliances and hospital aseptic furniture; next, possibly, came drugs, these forming in general a very elegant display. Certain of the exhibits were of a strictly scientific character and more particularly those in which the x ray apparatus and fine synthetics were chiefly in evidence. We do not remember any previous exhibition being arranged with a greater regard to the visitor's comfort. A writing-room was provided, there was a refreshment lounge, and in an annexe some additional exhibits were shown.

Pursuing the course adopted on previous occasions, we deal with the sections in the following order: (1) Surgical Instruments and Appliances; (2) Drugs; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Miscellaneous Exhibits.

### I.—SURGICAL APPLIANCES.

Surgical appliances and the accessories of the operating theatre, sterilising apparatus, operating tables, sinks, &c., formed a very pronounced feature of the exhibition this year. What everyone must have admitted to be a very fine exhibit coming in this category was that of Messrs. Arnold and Sons, of West Smithfield, London, E.C.; their stall, occupying the whole of the stage, formed a very complete display of up-to-date instruments and hospital appliances. The exhibit included the improved high-pressure steam sterilisers in both horizontal and vertical form, the design of which was suggested by Mr. W. Bruce Clarke. A working model was exhibited. Provision is made in this apparatus for absolute sterilisation and accidental contamination is carefully guarded against. The instruments included Kollmann's anterior and posterior urethral dilators, Heath's mastoid instruments, and a selection of gynæcological instruments. There was a large selection also of aseptic hospital furniture. Messrs. Harry W. Cox, Limited, of Rosebery-avenue, London, E C., exhibited quite a large selection of apparatus connected with x ray work and high-frequency applications. Here were hospital outfits for use in the ward, including a coil giving a greatly intensified spark, a new mercury interrupter, and an apparatus for the light treatment of ringworm. Messrs Mayer and Meltzer, of 71, Great Portland-street, London, W., presented to view a number of improved designs of surgical instruments which attracted the interest of the surgical visitors. There were also instruments of approved design used in laryngological, rhinological, and otological practice. They exhibited also a combined midwifery douche and steriliser. In the horizontal position this can be used as a steriliser, while in the vertical position it answers the purpose of a douche. Amongst the electro-medical apparatus shown by the Sanitas Electrical Company of 61, New Cavendish-street, London, W., was the "Multostat" which is described as a new universal apparatus just produced and exhibited for the first time. It consumes very little current and can be attached to any continuous supply. It may be applied to all electro-therapeutic purposes. The exhibit included a very ingeniously devised x-ray couch and a bath known as the Schnée 4 cell bath for administering the current through the body either completely or locally. Close by was the exhibit of the Medical Supply Association, of 228 and 230, Gray's Inn-road, London, W.C., comprising hospital furniture, surgical instruments, dressings, anæsthetics, and electrical apparatus. They exhibited an anæsthetic mixture for administration locally which avoids the danger of sepsis since it contains an antiseptic, while it is stated to be free from ordinary poisoning effects, as the solution is only one-twentieth strength of the B P. cocaine solution for hypodermic injection. Amongst the electrical apparatus exhibited was the latest type of interrupter known as the Gaiffe automotor mercury jet interrupter which dispenses with an independent driving motor as well as brushes and bands.

Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, Cavendish-square, London, W., presented to view a very interesting and wide assortment of surgical appliances and aseptic hospital accessories. Their exhibits were so numerous as to occupy three stalls. The exhibits included Japanese ice-bags, an aseptic hypodermic syringe for the watch-chain, syringes for the administration of novocaine, aseptic operating theatre furniture in phosphor bronze, German silver, and white enamel steel, high-pressure sterilisers, and portable dressing sterilisers which can be used over the kitchen fire or on an oil lamp or gas burner. It represents a cheap and an efficient steriliser for dressings.

The Holborn Surgical Instrument Company, Limited, of 26, Thavies Inn, Holborn-circus, London, E C., exhibited on one stall an assortment of aseptic furniture, chief amongst which was the Holborn high-pressure steam steriliser which works at 250° F.; the steam penetrates everything and the process of sterilisation is complete, the dressings being dry after the treatment. This company's other stall was devoted to the display of surgical instruments; the selection was wide and calculated to meet all the requirements of surgery. Mention may be made in particular of a convenient set made for medical men commencing a general practice. High-class workmanship was the feature of the admirable display of surgical instruments and aseptic hospital furniture by Messrs. Down Brothers, Limited, of 21, St. Thomas-street, London, S.E. The exhibit included the "St. George's" operating table, the "St. Thomas's" swing pattern operation table, sterilisers, and a number of forceps, catheters, &c., designed by various surgeons.

The exhibit of Messrs. Watson and Sons, of 313, High Holborn, London, W.C., of electro-therapeutic apparatus attracted considerable attention by reason chiefly of the wonderful detail shown in the skiagraphs produced by the "intensified" induction coil. With this apparatus skiagraphs can be taken of any part of the human body with exposures varying from one to five seconds. The "intensified" induction coil works in conjunction with a new form of mercury interrupter which is worked with a gas dielectric instead of the usual liquid and accordingly runs for a relatively unlimited period without the mercury requiring to be cleaned. Moreover, the amount of mercury required is not more than one pound in weight.

The Repello clinical thermometer, which does not require shaking down to reset, has already been described in our columns. Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C., exhibited many patterns of this instrument. The latest design is the aseptic thermometer which fits into a container like a stoppered bottle in which cotton-wool may be kept saturated with carbolic acid. Messrs. S Maw, Son and Sons, of 7 to 12, Aldersgate-street, London, E.C., occupied one stall for the exhibition of surgical instruments and another for aseptic furniture. Amongst the former were many instruments designed by well-known surgeons, and there were also shown sterilised catheters and dressings. The aseptic furniture included a new operation table which can be raised or lowered by simply turning a wheel at the head of the table. Other designs of operating tables were shown and also a high-pressure steriliser. Cotton lints, absorbent gauze tissues, bandages of various kinds, and compressed dressings were the feature of the exhibit of the Liverpool Lint Company of Mark-street Mills, Netherfield-road, North Liverpool. A fine selection of instruments and appliances of modern design was shown by Messrs. John Weiss and Son, Limited, of 287, Oxford-street, London, W. The exhibit included various patterns of ophthalmic instruments. Mr. Thomas Hawksley, of 357, Oxford-street, London, W., exhibited an apparatus which graphically recorded blood pressure and is known as Dr. Erlanger's sphygmomanometer, together with other apparatus designed for the same purpose. The clinical polygraph, designed by Dr. A. G. Gibson, was also exhibited, the apparatus being suitable for clinical use for recording the movements of various organs of the body.

The Equipoise Couch Company of Ashford, Kent, demonstrated the advantages of their specialities, the Equipoise mattress, lounge, bath chair, and chair on the orchestra platform. This system of construction enables the user to sit, lie, or recline in any comfortable position, the position being very easily adjusted and without any special effort The merits of these appliances are well summed up in the phrase of the inventors, "any position by volition." Messrs. George Gale and Son of the Union Works, Birmingham, exhibited a number of bedsteads designed for invalids and others and known under the title of Lawson Tait spring bedsteads. It is interesting to note that these beds are designed in such a way as to encourage the keeping of all parts clean, while the absence of sharp corners, &c., minimises the risks of injury to patients. Messrs. Philip Harris and Co., Limited, of 144 and 146, Edmund-street, Birmingham, exhibited three appliances under the generic title "perfectum." The first was the perfectum surgery drug cabinet, the second a surgery couch, and the third a bacteriological cabinet. The exhibit was decorated with certain medicinal plants which can be cultivated in Great

Britain. The well known radiant heat and light apparatus with its various accessories of the Dowsing Radiant Heat Company of 28, York-place, Baker-street, London, W., was shown ready for application. Mr. Alfred E. Dean of 82, Hatton-garden, London, E.C., exhibited some interesting and up-to-date apparatus for radio-therapy and light-therapy and Marconi's Wireless Telegraph Company of 18, Finchlane, London, E.C., exhibited their induction coils, which are specially adapted for x ray and high-frequency treatment. Messrs. Browne and Sayer of 104, Upper Thames-street, London, E.C., with Messrs. Bale, Sons, and Danielsson, Limited, of Great Titchfield-street, London, W., exhibited the Osborne ideal bed-rest which is described as being cheap, portable, reliable, and efficient. The exhibit included Bale's well-known card index system of book-keeping, specially designed for the use of medical men, and an inhaler and a bed table. Lastly, Messrs. Reynolds and Branson, Limited, of 14, Commercial-street, Leeds, exhibited a new apparatus of some merit for the administration of oxygen, besides a number of surgical apparatus, including lamps for ophthalmic and throat work, bed bath, and bowel and stomach clamps.

### II.—DRUGS.

The exhibition of drugs comprised many familiar friends chiefly of the synthetic order but there were some novel introductions worthy of note, while here and there was evidence of attempts to modify formulæ in accordance with clinical indications. The administration of iodine and bromine in the form of the old-fashioned bromides and iodides appears to be yielding in favour of organic compounds of these elements which, while giving the therapeutic effects of bromine and iodine, are claimed to be free from the phenomena known respectively as bromism and iodism. In the same way nitrate of silver threatens to be replaced by organic silver compounds and salicylate of soda by compounds containing the salicyl group but not attached to the alkaline metals. All this, of course, is of interest from a pharmaceutical point of view. The class of compounds just alluded to was very well represented in the exhibit of the Bayer Company, Limited, of 19, St. Dunstan's-hill, London, E.C. Here, for example, was aspirin, or aceto-salicylic acid, described as an ideal substitute for salicylate of sodium and as being free from the after effects of alkaline salicylates. The compound is not changed in the gastric juice but readily decomposes in the alkaline secretion of the intestine. Jothion is described again as an internal iodine preparation which may be substituted for potassium iodide administered internally. Sajodin is another iodine compound employed internally in the same quantity as is potassium iodide and is said to be free from the secondary effects known as iodism. The exhibit included somatose preparations both in the form of powder and of liquid. As we have pointed out before, somatose is a powerful nutritive. A very interesting series of preparations was shown by Meister Lucius and Bruning, Limited, of 51, St. Mary Axe, London, E.C. These comprised a number of sera, including the antistreptococcic serum of Hoechst, the diphtheria serum prepared by the Behring-Ehrlich method, the meningococcus serum, tetanus antitoxin, and the new tuberculin of Koch. Amongst the organic silver compounds were a compound of gelatose and nitrate of silver (albargin) used in the treatment of gonorrhœa and eye affections, and argonin, a casein silver salt. There was also a preparation known as valyl which is described as the active substance of valerian and indicated in nervous complaints and irregular and painful menstruation. Under the auspices of the Saccharin Corporation, Limited, of 165, Queen Victoria-street, London, E.C., there were also shown at the same stall samples of novocain, described as a non-irritant local anæsthetic, exhibiting the same action as cocaine but without, it is said, the physiological drawbacks of that alkaloid. It is employed in ophthalmic and dental work and for producing lumbar or spinal anæsthesia. We have already drawn attention to the excellent cataplasm known as antiphlogistine. It is both antiseptic and hygroscopic and is a really scientific poultice. Samples were shown by the Denver Chemical Manufacturing Company, 41, St. Ann's-road, Burdett-road, London, E. A series of modern therapeutic products of interest to the general practitioner was shown by Messrs. Parke, Davis, and Co., of 111, Queen Victoria-street, London, E.C. These included preparations of the active principle of the suprarenal gland, a local anæsthetic and ischæmic containing adrenalin and cocaine and known as "codrenine"; a physiologically standardised preparation of ergot; and iodalbin giving, it is stated, the therapeutic effects of the iodides but without iodism. There were, besides, various sera and taka-diastase, a powerful starch-digesting agent. The exhibit of the Maltine Manufacturing Co., of 24 and 25, Hart-street, Bloomsbury, London, W.C., contained a useful number of preparations besides the well-known food products of Messrs. Carnrick and Co. Maltine is a liquid preparation of malt, having a powerful digestive action on starch, and is combined with various drugs—as, for example, the hypophosphites, iron, cascara sagrada, creosote, and so on. Maltine is also combined with cod-liver oil, the latter being obtained by a vacuum process which renders the oil pure and free from objectionable odour and taste. The stall of Messrs. Oppenheimer, Son, and Co., Limited, of 179, Queen Victoria-street, London, E.C., was attractively arranged and contained the specialities for which this firm is well known. As examples we may mention the hermetically sealed flask containers called aseptules, carrying accurate quantities of sterile preparations, amongst which we noticed normal saline solution, trypsin, ergot, sodium oleate, and extract of suprarenal gland. There were also illustrated the methods of administration of drugs by means of palatinoids and bi-plalatinoids. Further, there were shown hypodermic syringes and the "Universal Vaporiser." Petroleum appears to be an excellent vehicle for the administration of the hypophosphites and Angier's emulsion is, perhaps, the best example of such a preparation (the Angier Chemical Company, Limited, 32, Snow-hill, London, E.C.). This emulsion is stated to exert antiseptic, sedative, and demulcent effects along the intestinal tract. Milk of magnesia was the chief exhibit of the Charles H. Phillips' Chemical Company of 14, Henrietta-street, Covent Garden, W.C. It is, of course, a powerful antacid containing the hydrated oxide of magnesium. In addition to this preparation a "phospho-muriate of quinine compound" was shown containing the phosphates of potassium, magnesium, calcium, and iron, combined with the hydrochlorates of quinine and strychnine. Stovaine has already been described in these columns and referred to as a substitute for cocaine for producing anæsthetic effects. Many authorities have extolled its properties as a lumbar and spinal anæsthetic. Preparations of stovaine were shown by Mr. J. Flack, 16, Water-lane, Great Tower-street, London, E.C., who represents Les Etablissements Poulenc Frères of Paris. At the same stall were shown Billon's Ova-Lecithin, a definite organic phosphorus compound contained in eggs and said to be of great value in the treatment of wasting diseases. Atoxyl was also shown at this exhibit. It appears to be, according to Ehrlich, the sodium salt of paramido-phenylarsenic acid, and is now being tried as a remedy for sleeping sickness. The exhibit of Messrs. Armour and Co., of Atlantic House, Holborn Viaduct, London, E.C., was, of course, chiefly occupied by their well-known standard digestive ferments, including pepsin, pancreatin, and trypsin. The exhibit also included a crystalline form of adrenal substance and the same substance in the form of solution, powder, ointment, and "triturates."

Special pharmaceutical preparations standardised by physical, chemical, and physiological tests formed the subject of the exhibit of Messrs. Evans, Gadd, and Co., of Exeter. Amongst these may be mentioned the liq. violæ. glucosidi, a standardised preparation of the fresh leaves of the viola odorata. There was also a standard preparation of digitalis. Messrs. C. J. Hewlett and Son, of 35 to 42, Charlotte-street, London, E C., exhibited a number of elegant misturæ, a pepsine and bismuth compound for gastrodynia, dyspepsia, &c. Besides these there was an excellent series of standardised concentrated liquors and some antiseptic preparations based on an approved formula. Messrs. B. Kuhn and Co., of 16, Rood-lane, London, E.C., exhibited specimens of the non-poisonous and non-irritant germicide chinosol, while there were some excellent preparations of papain, the vegetable pepsin. We have already described in our analytical columns the speciality of the Miol Manufacturing Co., Limited, of 66, Southwark Bridge-road, London, S.E. It is offered as a substitute for cod-liver oil and contains olive oil, active malt extract, with medicinal doses of iodine and phosphorus.

Fine chemicals were well represented in the exhibit of Messrs. Knoll and Co. of 8, Harp lane, London, E.C. Bromural, for example, is an interesting bromine compound of the valerian group, combining the action of the bromides on the one hand and of valerian on the other. The exhibit also included styptol, a uterine hæmostatic; santyl, the salicylic ester of santal oil; styracol containing guaiacol but without the disagreeable taste of that substance; and, lastly, diuretin, which is said to be useful in dropsy and cardiac asthma and in the treatment of arterio-sclerosis. A very effective exhibit was that of Messrs. Wyley's, Limited, of Coventry. The exhibit throughout gave evidence of pharmaceutical skill and included preparations of heroin compounds, medicinal syrups, and standardised tinctures. The exhibit included a well-designed dispensing cabinet fitted complete for a branch surgery.

(*To be concluded.*)

# Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the respective meetings of the above Colleges on July 25th diplomas of L.R.C.P. and M R.C.S. were conferred upon the under-mentioned gentlemen who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Examining Board in England:—

Samuel Henry Cummings Air, Guy's Hospital; Norman George Allin, M.B., C.M. Toronto, Toronto University and Middlesex Hospital; Manekjee Dhanjishaw Anklesaria, L M. & S. Bombay, Bombay University and Middlesex Hospital; Raymond Ebenezer Apperly, Middlesex Hospital; James Appleyard, University College Hospital; Frederick William Aris, M.D. McGill University, Montreal and London Hospital; Harold Percivall Aubrey, L.D.S. Eng., Guy's Hospital; Frederick James Fitzmaurice Barrington, University College Hospital; Richard Lavington Barwick, Cambridge University and St. Thomas's Hospital; John Willoughby Butler Bean, B.A. Cantab., Cambridge University and St. Barthelomew's Hospital; Thomas Herbert Cecil Benians, London Hospital; Horace Simeon Berry, M.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Francis Arnot Blackader Bett, M.B., Ch.B., New Zealand University*; Raymond Glendore Bingham, St. Thomas's Hospital; John William Bintcliffe, Manchester University and London Hospital; Frederick Richard Bray, Charing Cross Hospital; Angel Camacho, Charing Cross Hospital; Leonard Buckell Cane, B.A. Cantab, Cambridge University and St. Bartholomew's Hospital: Hildred Bertram Carlyll, Cambridge University and Guy's Hospital; Robert Godwin Chase, B.A. Cantab., Cambridge University and Guy's Hospital; Ram Nath Chopra, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Frank Clayton, B.A. Cantab., Cambridge University, King's College, and University College Hospitals; Meyer Cohen, University College Hospital; Francis Garland Collins, London Hospital; Philip Crawford Conran, Middlesex Hospital; Rustom Nusserwan Coorlawala, L.M. & S. Hyderabad, D.P.H. Cantab., Hyderabad and London Hospital; James Ebenezer Copland, University College Hospital; Ernest Marshall Cowell, University College Hospital; Andrew John Crawford, M.B., Ch.B. New Zealand New Zealand University and Middlesex Hospital; Lawrence Croft, Guy's Hospital; Gustavus William Musgrave Custance, St. Thomas's Hospital; Hedley Gascoyne Daft, L.S.A., Sheffield University and University College Hospital; Davis Woodcock Daniels, St. Mary's Hospital; William Deane St. Thomas's Hospital; Horace Charlton Devas, St. Thomas's Hospital; William Craufuird McNaghten Dickey, Guy's Hospital; Arthur William Courtney Drake, B.A. Cantab., Cambridge University and St. Thomas's Hospital; John Dunoan, M.B. Toronto, Toronto University and University College Hospital; John Edwin Ellcome, St. Thomas's Hospital; Trevor Evans, Glasgow University and London Hospital; Edmund George Foote, Westminster Hospital; Cecil Ledward Forde, B A. Cantab., Cambridge and Liverpool Universities; Seymour Richard Gleed, St. Thomas's Hospital; Edward Slade Goss, Bristol and Middlesex Hospital; Henry Granger, St. Thomas's Hospital; Walter Bristow Griffin, St. Bartholomew's Hospital; John Hadwen, St Bartholomew's Hospital; Alfred Hanau, St. Bartholomew's Hospital; William Woodmason Hollyer, London Hospital; Oscar Henri Hensler, M D Strassburg, St Bartholomew's and London Hospitals; Tom Shadick Higgins, B Sc. Lond., University College Hospital; John Ernest Hodson, Guy's Hospital; Gerald Holroyde, Leeds University; Arthur Ernest Iles, University College, Bristol; William Andrew Morton Jack, St. Thomas's Hospital; William John Jago, St. Bartholomew's Hospital; Arthur Gordon Jenner, Liverpool University; William Forsyth Jones, Charing Cross Hospital; James Leonard Joyce, Cambridge University and St. Bartholomew's Hospital; Charles Gordon Kemp, St. Bartholomew's Hospital; Frederick Edwin Herbert Keogh, L S.A., St. Mary's Hospital; Sohrab Maneckji Khambata, L.M. & S. Bombay, Bombay University and London Hospital; Abdus Sattar Khan, L.M. & S. Calcutta, Calcutta University; Henry John Sullings Kimbell, St. Bartholomew's Hospital; Phirozeshaw Jamshedji Kolaporewalla, Bombay University and Guy's Hospital; Christian Frederic Louis Leipoldt, Guy's Hospital; John Frederick Lessel, M.D., C.M. Dalhousie, Dalhousie University; John Ross Lloyd, St. Bartholomew's Hospital; James Johnson Louwrens, St Mary's Hospital; Leonard George Joseph Mackey, Birmingham University*; Philip Walter Mathew, Middlesex Hospital; James Ernest Middlemiss, Leeds University; Edward Pigott Minett, Guy's Hospital; Gordon Nevil Montgomery, Middlesex Hospital; Edward Morris, L.S A., St. Bartholomew's Hospital, Harry William Nicholls, Middlesex Hospital; Humphrey Nockolds, University College Hospital Francis William O'Connor, St. Bartholomew's Hospital; Harry Percival Orchard, London Hospital; Ernest Vivian Oulton, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Robert Colin Paris, King's College Hospital; John George Phillips, University College and Guy's Hospitals; Benjamin James Phillips-Jones, Ediuburgh University, Cardiff, and St. Mary's Hospital; Arthur Haig Pollard, London Hospital; Mohamed Abdur Rahman, Bombay University and Guy's Hospital; Jeffrey Ramsay, Manchester University and St. Bartholomew's Hospital; Alfred Basil Rooke, University College Hospital; Vyvyan Kendall Sadler, University College Hospital; Barnett Saul, B.A. Lond., L.S A., Manchester University and Charing Cross Hospital; George Henry Sedgwick, Leeds and Manchester Universities; George Alan Simmons, St. Thomas's Hospital; George Maxwell Simpson, University College and Middlesex Hospitals; Frank Oswald Spensley, St. Thomas's Hospital; Sidney Francis St. Jermain Steadman, L.D.S. Eng., Charing Cross Hospital; Robert Yelverton Stones, London Hospital; Edward Sutcliffe, Leeds University; Regiuald Stephen Townsend, St. Bartholomew's Hospital; Harold Thomsett Treves, St. Thomas's Hospital; James Richard Henry Turton, St. Bartholomew's Hospital; Bernard Varvill, London Hospital; Harold Fitz Vellacott, London Hospital; Walter George Howard Mastermann Verdon, Cambridge University and St. Thomas Hospital; Paul Jenner Verrall, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Sydney Vosper, St. Bartholomew's Hospital; Frederick John Waldmeier, L.S.A., Beyrout and London Hoapital; George Henry Watson, London Hospital; Johu Nuthall Watson, Guy's Hospital; Robert Joseph Willan, M.B., B.S. Durham, Durham University; Ivan Stuart Wilson, M.B., Ch.B. New Zealand, New Zealand University; James Frederick Windsor, B.A. Cantab., Cambridge University and St. Thomas's Hospital; George Ernest Wood, St. Mary's Hospital; William Harrison Woodburn, B.A. Cantab., Cambridge University, King's College, and St. Bartholomew's Hospitals; Leonard Henry Wootton, University College Hospital; and Oswald Kentish Wright, B.A. Cantab., Cambridge University and London Hospital.

* Diploma of M.R.C.S. previously conferred on June 13th, 1907.

Diplomas in Public Health were granted by the Royal College of Surgeons of England in conjunction with the Royal College of Physicians of London to the under-mentioned gentlemen:—

Isidore McWilliam Bourke, M.R.C.S., L.R.C.P., Middlesex and St. George's Hospitals; Edwin Eckersley, Lieutenant-Colonel R.A.M.C., M.B., C.M. Edin., Edinburgh University; Robert John Ewart, F.R.C.S., L.R.C.P. Lond., M.D. Vict., Liverpool and Manchester Universities; Matthew Henry Gregson Fell, Captain R.A.M.C., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Harry Andrew Foy, L.M. & S. Bombay, L.R.C.P. & S. Edin., L.F.P. & S. Glasg., University College Hospital; Frederic William Lewis, M B. Lond., St. Mary's Hospital; William Glen Liston, Captain I.M.S., M.D., Ch.B. Glasg., Glasgow University; Edward Daniell Parsons, M.R.C S., L.R C.P., St. Bartholomew's Hospital; Wentworth Francis Tyndale, C.M.G., Captain R.A.M.C., M.R C.S., L.R.C.P, M.B. Lond., St. George's Hospital; Brian Watts, Captain R A.M.C., M.R C.S., L.R.C.P., M.D. Brux., Sheffield University and London Hospital; Bernard Harry Wedd, M.R.C.S., L.R.C.P., M.D. Lond., Guy's and King's College Hospitals; James Edwin Wilson, M.B., B.Ch., R.U I., Belfast and Birmingham Universities; and Charles Rawdon Wood, M.R.C.S., L R.C.P., M.D., B.S. Durham, University College Hospital and Durham University.

UNIVERSITY OF LONDON.—At the intermediate examination in medicine held recently the following candidates satisfied the examiners:—

Alister Ralph S. Alexander, University College; Richard William Annison, Middlesex Hospital; William Reginald Ward Asplen, Westminster Hospital and King's College; Ethel Marian Baker, University of Liverpool; Richard Pitt Ballard, Guy's Hospital; Alfred David Eldred Bayliss and Joseph Dudley Beujafield, University College; Barbara Broster, London (Royal Free Hospital) School of Medicine for Women; Hugh Leonard Burton, King's College; Ronald Herbert Candy, London Hospital; Henry William Catto, Guy's Hospital; †Nina Gertrude Cotton, London (Royal Free Hospital) School of Medicine for Women; †‡Arthur Neville Cox, Guy's Hospital; Hazel Haward Cuthbert, London (Royal Free Hospital) School of Medicine for Women; William Chalmers Dale, St. Bartholomew's Hospital; William Allen Daley, B Sc., University of Liverpool; Vaman Ganesh Desai, King's College; Geoffrey Dunderdale, John Beatson Dunning, and Emile Marc Antoine Duvivier, Guy's Hospital; Gerard Ferdinand E. Dyke, University College, Cardiff; ‡§Florence Mary Edmonds, London (Royal Free Hospital) School of Medicine for Women; Roger Bellis Edwards, University of Liverpool; James Philip Elias, Victoria University of Manchester; Arthur Oxley English, Middlesex Hospital; Harold Gardiner, Guy's Hospital; †‖Douglas Green, University of Sheffield; Thomas Hare, St. Mary's Hospital; Wilfrid Lawrence Hibbert and Guy Reginald Hind, Guy's Hospital; ‡Joseph Stanley Hopwood, St Thomas's Hospital; †Stanley Hoyte, King's College; Maurice Lionel Corrie Irvine, St Thomas's Hospital; *¶Geoffrey Jefferson, Victoria University of Manchester; Evan Hugh Jones, St. Thomas's Hospital; Heury Goff Kilner, Middlesex Hospital; Ernest Charles Lindsay, London Hospital; †Arthur Gordon Haynes Lovell, St. Mary's Hospital; George Gibson Lyttle, Queen's College Belfast; Emily Clara Macirone, London (Royal Free Hospital) School of Medicine for Women; George Maxted, Guy's Hospital; *¶Bernard Constable Maybury, St. Thomas's Hospital; John Harry Me rs, St. Mary's Hospital; Douglas Ashley Mitchell, Guy's Hospital; Stella Myers, London (Royal Free Hospital) School of Medicine for Women; Arthur Griffith William Owen, University of Liverpool; Mary Minnie Patterson London (Royal Free Hospital) School of Medicine for Women; Wifrid Langrish Pink, St. Thomas's Hospital; †‡Harry Platt, Victoria University of Manchester; Norbert Leo Maxwell Reader, University of Leeds; ‡Ernest Edward Andrew T. Rigg, University College; †Arthur Leyland Robinson, University of

Liverpool: Cecil John Rogerson, University College; Mary Schofield and Mary Cowper Scott, London (Royal Free Hospital) School of Medicine for Women; *†‡§‖Clement Edward Shattock, University College; Charles Woolley Shepherd, University College, Cardiff; Frederic Carney Shone, University College; Bernard Sangster Simmonds, Middlesex Hospital; *†Thomas Duncan Macgregor Stout, Guy's Hospital; John Bailey Tackaberry, Middlesex Hospital; Harold Herbert Tanner, St. Mary's Hospital; Norman Tattersall, Victoria University of Manchester; †George Taylor, London Hospital; Gottfried Oram Teichmann, Middlesex Hospital; ‡William Rees Thomas, University College, Cardiff; Henry Ashbourne Treadgold, University of Cambridge; Thomas Anger Fereman Tyrrell, St. Mary's Hospital; Philip John Veale, University College, Bristol; Theodore Henry Whittington, King's College; and James Cowan Woods, London Hospital.

The following candidate having qualified in organic chemistry has now completed the intermediate examination in medicine:—

James Rocheid Forrest, University College and St. Bartholomew's Hospital.

* Distinguished in anatomy. † Distinguished in physiology.
‡ Distinguished in pharmacology.
§ Bracketed equal for scholarship in pharmacology.
‖ Bracketed equal for scholarship in physiology.
¶ Bracketed equal for scholarship in anatomy.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

**LONDON SCHOOL OF TROPICAL MEDICINE.**—At the London School of Tropical Medicine last week Mr. Percival A. Nairne (chairman of the Seamen's Hospital Society) unveiled a portrait of the Hon. Bomanji Dinshaw Petit, one of the most munificent benefactors of the school. Mr. Nairne, having recapitulated the events which led to the establishment of the school, said that Sir Francis Lovell undertook a mission to the East at the request of the Colonial Office to make known the objects at which the promoters of the school aimed. While in Bombay he met Mr. Petit who, explaining his motives as being due equally to humanity and a desire to cement a union of hearts between the East and the West, gave the school a lac of rupees (about £7000). Sir Patrick Manson said that a great city like London should not have had to go to Bombay for assistance in such matters. But for Mr. Petit's gift the work of the school would have been very much cramped and brought into danger of an abrupt conclusion. Good progress was now being made in the tutorial department. They had three chairs in connexion with tropical medicine and assurances from the Government that two of them would be continued for a period of five years. Mr. Dhunjeebhoy Petit (Mr. Dinshaw Petit's son) said that his father's greatest reward in making the gift was the betterment of the suffering multitudes of India that would result from the working of the school. Sir M. Bhownaggree, in moving a vote of thanks to Mr. Nairne, said that the school would be a symbol of that union of hearts which patriotic men like Mr. Dinshaw Petit wished to see grow up between Great Britain and her Eastern Empire.—The following students of the London School of Tropical Medicine successfully passed the examination in the different subjects comprised under the head of tropical medicine at the end of the session:—

*A. W. Balch, Surgeon United States Navy, Ph.G. Mass M.D. Harvard; T. R. Beale-Browne, M.R.C.S. Eng., L R.C.P. Lond. (Colonial Service); J. C. C. Ford, L.R.C.P. & S. Edin, L.F.P.S. Glasg (Colonial Service); *C. A. Godson, I M.S, M.R.C.S Eng. L R.C.P. Lond.; *F. Grenier, M.B., C M. Edin (Colonial Service); F. C. Hepburn, M.R.C.S. Eng., L.R.C.P. Lond., B.A. Cantab. (Colonial Service); *Captain F. H G. Hutchinson, I.M S., M.B., C.M Edin., D.P.H. Camb.; K. McMurtrie, M.B., Ch.B Edin.; *Captain J. N. Walker, I M.S., M.R.C.S. Eng., L.R C. P. Lond.; E. Weatherhead, M.B. Cantab., M.R.C S. Eng., L.R.C P. Lond. (Colonial Service); G. Wilkinson, M B, B C Cantab, L.S A; and *Captain W. S. Willmore, I.M S., M R C.S Eng., L.R.C.P. Lond.

* Passed with distinction.

**UNIVERSITY OF EDINBURGH.**—The following degrees and certificates were conferred on July 26th:—

*Doctor of Medicine.*—‡Edward Archer-Brown, M.B., Ch.B., South Africa (*in absentiâ*); ‡John Henry Montgomerie Bell, M.B., Ch.B., Scotland (*in absentiâ*); *Lesley Newto Hesketh Biggs, M.B., Ch.B., India; ‡George John Blackmore, M.B., C.M, New Zealand (*in absentiâ*); ‡Thomas Charles Blackwell, M B., Ch.B., England; ‡Richard Alfred Blake, M.B., Ch.B., England (*in absentiâ*); William Dudley Boswell, M.B., Ch.B., England; †Orlando Charnock Bradley, M.B., Ch.B., England (with Second-class Honours); Alfred Brown, M.B., Ch.B, Scotland; Herbert Maughan Brown, M.B., Ch.B., England; †Hablot John Moxon Browne, M.B., C.M., England; ‡Alfred Ernest Burroughs, M.B., Ch.B., Scotland; ‡Katherine Jane Stark Clark, M.B., Ch.B., Scotland; Paula Theodora opeland, M.B., Ch.B, Scotland (with First-class Honours); ‡Robert William Craig, M.B., Ch.B., Scotland; ‡John Crawford, B.Sc., M.B., C.M., Scotland; Peter Crerar, M B., C.M., Scotland; John Edward Twiston Davies, M.B., C.M., Wales; ‡David Ewart M.B., Ch.B., New Zealand (with Second-class Honours); Francis Edwin Field, M.B., Ch.B., British Guiana; Samuel Bradley Figgis, M.B., C.M., England; Gerald Hall Lloyd Fitzwilliams, M.B., Ch B., Wales; John Fortune, M.B., Ch.B, Scotland; ‡Lawson Gifford, M.B., C.M., Jamsica (*in absentiâ*); ‡Norman Gregg, M.B., Ch.B, Scotland; John Ligertwood Green, M.B., Ch B., Scotland; *James Andrew Gunn, M.A., B.Sc., M.B., Ch.B., Scotland (with First-class Honours); ‡William Hamilton, M.B., Ch.B., Ireland; ‡Philip Anthony Harry, M.B., Ch.B., Jamaica; William Hume, M.B., Ch.B., Australia; ‡Harold Kerr, M B., Ch.B., Scotland; Langworthy Laurie, M.B., Ch.B., England (with Second-class Honours); Charles George Stretton, Leeds, M.B., Ch B., England; William Leslie, M.B., C.M., Scotland; *James Lochhead, M.A., B.Sc., M.B., Ch.B., Scotland (with First-class Honours); *Stuart M'Donald, M.B., C.M., Scotland; ‡William Chisholm Wilson M'Dowell, B A., M.B., C.M., New Zealand (*in absentiâ*); Robina Harlin *née* M'Gregor, M B., Ch.B., Scotland (with Second-class Honours) (*in absentiâ*); †Neil M'Vicar, M.B., C.M, Scotland (with First-class Honours) (*in absentiâ*); Alexander Mowatt Malcolmson, M.B., Ch.B., Scotland; †William Joseph Maloney, M B., Ch.B., Scotland (with First-class Honours); William Miller, M.B., Ch.B., Scotland; ‡Harley Patterson Milligan, M.B., Ch.B., England; ‡Robert Unwin Moffat, M B., C.M., South Africa; ‡Richard Caldecott Monnington, M.B, Ch B, England; Harold Mowat, M.B, Ch B, Scotland; ‡Hugh Lennox Munro, M.B., Ch B, Scotland (with Second-class Honours); †James Hunter Harvey Pirie, B Sc., M.B., Ch.B., Scotland; ‡Charles Frederick Ponder, M.B., C.M., Scotland; Andrea Francis Honeyman Rabsgliati, M B., Ch.B., England (*in absentiâ*); Hugh Smith Reid, M.B., Ch.B., Scotland; †Lionel Charles Peel Ritchie, M.B., Ch.B., Scotland; ‡Thomas Ronaldson Smith, M.B., Ch.B., Scotland; ‖William Arthur Wilson Smith, M.B., Ch.B., Scotland; ‡Ralph Stuart Stephenson, M.B., C M., New Zealand; †Herbert Jamieson Stewart, M.B., Ch.B., Australia (*in absentiâ*); *Hugh Angus Stewart, M.B., Ch.B., Scotland; ‡Arthur Charles Strain M.B., Ch B., Scotland (with Second-class Honours); ‡James Prain Sturrock, M.A., M.B., C.M., Scotland; ‡William Dunbar Sutherland, M.B., C.M., India; John Thomarson, M.B., C.M., England; Edward Francis Valenzia, M.B., Ch.B., Egypt; Syed Mohamed Varis, M.B., C.M., India (*in absentiâ*); †Robert M'Leod Veitch, M.B., Ch.B., Scotland; *Henry Wade, M.B., Ch.B., Scotland (with Second-class Honours); Hubert Clinton Weber, M.B., Ch.B., British Guiana; John Henry Douglas Webster, M.B., Ch.B., Scotland; William Ebenezer Caradog Williams, M.B., C.M., Wales; and Gerald William Young, M.B., Ch.B., England.

*Master of Surgery.*—‡Samuel Evans, M.B., C.M., India; and †Duncan Campbell Lloyd Fitzwillians, M.D., Wales.

* Awarded Gold Medals for their Theses. † Highly commended for their Theses. ‡ Commended for their Theses.

*Bachelor of Medicine and Master in Surgery.*—Stephen Rowland, England.

*Bachelor of Medicine and Bachelor of Surgery.*—George Joseph Adams, England; ‖John Budge Alexander, M.A., Scotland; John Laing Annan, Scotland; Alfred Arthur, Ireland; ‖John Caradoc Ashton, Wales; Robert George Archibald Bagnall, England; David Malcomson Barcroft, Ireland, Abraham Cockcroft Barker, England; Charles Botterill Baxter, England; ‖Albert Edward Bennee, South Africa; Mary Florence Bignold, England; Herbert Walter Binks, England; Francis George Hamilton Rollo Black, England; James Allan Brand, Scotland; Alexander Bremner, Scotland; James Brennan, Ireland; Hugh Francis Briggs, England; David Stirling Buist, Scotland (*in absentiâ*); Thomas Burrell, Scotland; Percival Douglass Cameron, Scotland; John Raymond Chapman, England; William David Coghill, Scotland; Claude Ernest Addison Coldicut, New Zealand; Charles Henry Corbett, England; Theodore Craig, Scotland; Francis William Murray Cunningham, Scotland; Cornelius Hildebrand Derksen, South Africa; Thomas Derrick, Scotland; Pollok Donald, Scotland; Mackenzie Douglas, M.A., Scotland; George Lawrence Duncan, Scotland; ‖Pieter Abraham Euvrad, Cape Colony; Vaughan Lloyd Evans Wales; Josephine Letitia Denny Fairfield, England; Sydney Boyd Faulkner, Scotland; William Pike Ferguson, M.A., B.Sc., Scotland; Mary Struthers Finlayson, Scotland; William Smith Forbes, Scotland; ‖John Fraser, Scotland; Oney Mortimer Gericke, Cape Colony; John Boyd Gibson M.A., Scotland; Robert Macnaught Glover Scotland; Ian Mount Grant, Scotland; David George Gray, Ireland; Andrew Rugg Gunn, Scotland; ‖Douglas James Guthrie, Scotland; §George Henderson, Scotland; Nettie Dick Hendrie, Scotland; William Samuel Heron, Ireland; Andrew Fergus Hewat, Scotland; Aubrey Middleton Hewat, Scotland; Matthew Heyns, Cape Colony; James Rowland Hill, Ireland; Jan Kriel Albertyn Hofmeyr, B A., Cape Colony; ‖John Howard Horne, Scotland; Alexander Hunter, Scotland; John Alexander Jamieson, Scotland; §Robert Hillhouse Jamieson, Scotland; William Wilton Johns, Wales; Reginald Fitzherbert Johnson, British Guiana; Blanche Mary Zillah, Johnston, England; Matthew James Johnston, Ireland; §Thomas Arnold Johnston, Ireland; William David Stoney Johnston, New Zealand; Daniel Johnstone, M.A., Scotland; Gordon Gray Jolly, Scotland; Schalk Willem Joubert, Cape Colony; John Henry Lamb, England; John Howard Lechler, India; Alaister Fraser Lee, Scotland; David Lees, M A., Scotland; Carl Wilhelm Ludwig Luethgen, Germany; William Simpson M Cune, Ireland; Angus Macdonald, Scotland; William Kelman Macdonald, Scotland; Alister Thomas Mackenzie M.A., Scotland; ‖Rory Eric M'Laren, Scotland; Helen Meldrum M'Millan, Scotland; John Alexander Manifold, England; Legh Richmond Herbert Peter Marshall, Scotland; Ada Elizabeth Miller, Scotland; Margaret Mair Miller, Scotland; Charles Irvine Milne, Scotland; Charles James Milne, Trinidad; Alexander Philip Mitchell, Scotland; James Arthur Morris, Scotland; John Morrison, Scotland; James Muckhart, Scotland; §John Joseph Harper Nelson, Scotland; §Charles Fulton Pattie, New Zealand; ‖William James Porteous, Scotland; Denis Eldred Curwen Pottinger, England; Norman Henry Prior, New Zealand; *Dewan Hakumat Rai, M.A., India (*in absentiâ*); Charles Robertson, B.A., Scotland; ‖David Robertson, Scotland; William Stewart Irvine Robertson, Scotland; Walter Alexander Scobie, Scotland; James Scott, Scotland; Ralph Leicester Scott, England; Alice Cameron Sharp, Scotland; Wilfred James Simpson, Scotland; Ernald Drybrough Smith, Scotland; Fleet Floyd Strother Smith, Ireland; Dorothy Wilhelmine Stevenson, Scotland; Lewis Hay

Frederick Thatcher, Scotland; § Charles August Thelander, Australia; Charles Petrus Theron, B.A., South Africa; § David Thomson, Scotland; William Thomson, Scotland; William Wilson Thomson, Scotland; Arthur Lincoln Thornley, England; Frederick John Gordon Tocher, Scotland; Lydia Knight Towers, Scotland; Martha Beatrice Webb, England; John Clarkson Birkbeck Williams, England; David James Williamson, England; ‖ James Leitch Wilson, Scotland; and James Ley Masterman Wood, England.

§ Passed with first-class honours.
‖ Passed with second-class honours.

*Bachelor of Science in the Department of Public Health.*—Matthew Bernard Burton, M.B., C.M.

*Diploma in Tropical Medicine and Hygiene.*—Archibald Guelph Holdsworth Smart, M.B., Ch.B.

The following Fellowships, scholarships, and prizes have been awarded :—

Goodsir Memorial Fellowship, James Lochhead, M.A., B.Sc., M.D., Ch B.; Syme Surgical Fellowship, James Walker Dawson, M.B., C.M. (*in absentiâ*); Milner Fothergill Medal in Therapeutics, James Andrew Gunn, M.A., B.Sc., M.D., Ch.B.; Gunning Victoria Jubilee Prize in Anatomy, Alexander Ninian Bruce, B.Sc.; Gunning Victoria Jubilee Prize in Chemistry, Alexander Thomas Cameron, M.A., B.Sc.; Ellis Prize in Physiology, William Cramer, Ph.D., D.Sc.; Ettles Scholarship, Robert Hillhouse Jamieson, M.B., Ch.B.; Allan Fellowship in Clinical Medicine and Clinical Surgery, John Fraser, M.B., Ch.B.; Freeland Barbour Fellowship, Robert Hillhouse Jamieson, M.B., Ch.B.; Buchanan Scholarship in Gynæcology, Albert Edward Bennee, M.B., Ch.B.; James Scott Scholarship in Midwifery, David Lees, M.A., M.B., Ch.B; Mouat Scholarship in Practice of Physic, Dewan Hakumat Rai, M.A., M.B., Ch.B. Murchison Memorial Scholarship in Clinical Medicine, James Sutherland Edwards, M.B., Ch.B. M'Cosh Graduates and Medical Bursaries, Douglas James Guthrie, M.B., Ch.B., and John Howard Horne, M.B., Ch.B. (equal). Beaney Prize in Anatomy and Surgery, John Howard Horne, M.B., Ch B. Conan Doyle Prize, Albert Edward Bennee, M.B., Ch B. Dorothy Gilfillan Memorial Prize, Helen Meldrum M'Millan, M.B., Ch.B. Wightman Prize in Clinical Medicine, Alexander Gibson, M.A.; and the Anderson Henry Prize in Botany, John William Bews, M.A., B.Sc.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred :—

*Degree of Doctor of Medicine (M.D.).*—William Campbell Anderson, B.Sc., M.B., Ch.B., London; † Robert Brown, M.B., Ch.B., London; † James Clark, M.B., Ch.B., Maryport; * Frederick William Ellis, M.B., Ch.B., London; Maurice Buchan Johnson, M.B., Ch.B., Bedford; * Peter Macdonald, M A., M.B., C.M., Acomb (under old regulations); and William Mitchell Smith, M.B., C.M., Tean, Stoke-upon Trent (under old regulations).

*Degree of Master of Surgery (Ch.M.).*—Alexander Mitchell, M.A., M.B., Ch.B., Old Rayne, Insch.

* Commendation for Thesis. † Honours for Thesis.

*Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances)*—With Second Class Honours: Walter James Dilling, Aberdeen; *David Horn, B.A., Toowoomba, Queensland, Australia; George Henry Charles Lumsden, Aberdeen; James Milroy M'Queen, M.A., B.Sc., Aberdeen; Andrew M'Kay Niven, Aberdeen. Ordinary degree: Ernest Edward Allaway, Woodhouselea; John Webster Archibald, Kimberley, South Africa; Thomas Clapperton, Potterton, Whitecairns; John Ferries, Harthill, Countesswells; William Ingram Gordon, M.A., U.F.C. Manse, Pluscarden; Alexander Horn, Toowoomba, Queensland, Australia; John Elrick Kesson, Aberdeen; Benjamin Knowles, Aberdeen; James Leask, Elgin; Margaret Cameron Macdonald, Dingwall; Dalziel Buchanan M'Grigor, Culter; William Ian Mackintosh, Invergarry; James Moir Mathieson, Stonehaven; James Aberdein Milne, Aboyne; Benjamin Mitchell, Whitecairns; James Mitchell, Aberdeen; John Murray, Kincardine-O'Neil, Algernon Edgar Cyril Myers, Port Royal, Jamaica: Patrick Nicol, Aberdeen; Arthur Shepherd, Shethin, Tarves; *Alexander Stewart, Murtle; William Lemmon Stewart, Aberdeen; and John M'Intosh Wilson, M.A., Aberdeen.

* Awarded the John Murray medal and scholarship.

*Diploma in Public Health.*—Arthur George Troup, M.B., Ch.B. Aberd., Aberdeen.

FOREIGN UNIVERSITY INTELLIGENCE.—*Copenhagen:* Dr. C. F. Jacobsen has been recognised as *privat-docent* of Internal Medicine.—*Heidelberg:* Dr. Hermann Euler has been recognised as *privat-docent* of Odontology.—*Moscow:* Dr. Golubinin has been appointed Extraordinary Professor of Therapeutics.—*Munich:* Dr. Rudolf Grashey has been recognised as *privat-docent* of Surgery.—*Philadelphia (Jefferson Medical College):* Dr. J. H. Gibbon has been appointed to the chair of Surgery.—*Tübingen:* Dr. L. Merzbacher has been recognised as *privat-docent* of Psychiatry.

CALEDONIAN MEDICAL SOCIETY.—The twenty-seventh annual meeting of the Caledonian Medical Society was held in the Royal Eye Hospital, Bradford, on July 25th. Dr. Andrew Little presided over a large and representative gathering of members from both sides of the border. He took for the subject of his presidential address "The Life and Work of the late John Henry Bell of Bradford." Dr. J. Keay, physician-superintendent of the Edinburgh District Asylum, Bangour, was elected President for next year. The annual dinner was held at the Midland Hotel, Bradford, on the same evening, when between 30 and 40 members and guests were present. The toast of "The Society" was proposed by Dr. G. I. Swanson of York and responded to by the President and honorary secretary. "The Scottish Universities" was proposed by Dr. W. Gordon Little (Blundellsands) and acknowledged by Professor H. J. Campbell of the University of Leeds. "Caledonia" was proposed by Dr. A. C. F. Rabagliati (Bradford) and responded to by Dr. H. Cameron Gillies of London.

CENTRAL MIDWIVES BOARD.—Special meetings of the Central Midwives Board under the provisions of Rule D 5 were held on July 18th and 19th at Caxton House, Westminster, Dr. F. H. Champneys occupying the chair. The Board considered the following charges amongst others against the midwives whose names are given below and ordered them to be struck off the roll:—Mary Jane Banks, that being in attendance at a confinement she attended with an open sore on her finger; that the perineum being seriously ruptured and the placenta not having been completely expelled an hour after the birth of the child she did not send for a medical man. Frances Box, that being in attendance as a midwife at a confinement, the perineum being seriously ruptured, she did not send for a medical man. Sarah Brettell, that being in attendance at a confinement she neglected to take any steps to secure the comfort or cleanliness of the patient during the lying-in period and persistently refused to permit a registered medical practitioner to be sent for though the patient frequently expressed a desire that one should be fetched. Annie Broomhead, that she was found drunk and incapable within half an hour after attending at a confinement. Mary Brown, that she personally undertook the management of presentations other than the uncomplicated vertex or breech instead of declining to attend alone and advising that medical help should be sent for as required by the rules, and that though unable to read a thermometer she persistently declined to receive instruction in that respect. Sarah Dawn, that she was uncleanly in her person, clothing, house, and appliances, and that on March 19th, 1907, she was drunk while on duty as a midwife. Rebecca Ann Gill, that being in attendance at a confinement a medical man having been sent for to deliver the patient and another medical man having subsequently been sent for to attend the patient, she failed to notify the same to the local supervising authority as required by the rules; and that on March 22nd, 1907, she refused, without reasonable excuse, to allow the inspector of midwives to enter her house or to inspect her appliances and register. Jane Heath, that having been duly suspended from practice as a midwife by the local supervising authority she nevertheless, while under suspension, attended and acted as a midwife at confinements and that ante-partum hæmorrhage occurring in one of these cases she did not send for a medical man. Jane Perkins, that being in attendance at a confinement the death of the child having occurred before the attendance of a registered medical practitioner, she failed to notify the death to the local supervising authority and she attempted to get the child buried as still-born, well knowing that it had been born alive. Eliza Southall, that being in attendance at a confinement, the presentation being a shoulder one, she did not send for a medical man. Ellen Anders, that being in attendance at a confinement, the progress of the patient after delivery not being satisfactory, she did not send for a medical man and discontinued her attendance on the fifth day. Ellen Birkett, that being in attendance at a confinement on March 8th, 1907, she neglected to cleanse the infant's eyelids on birth; that she neglected to remove the soiled linen from the neighbourhood of the patient but left it lying under the bed; and that the child's eyes being inflamed and discharging on March 12th she did not send for a medical man. Charges were heard against the following midwives and their names were ordered to be struck off the roll: Sarah Ann Blackledge, Sarah Ann Chapman, Catherine Hawkins, Margaret Kirby, Margaret Riding, Mary Jane White, Mary Ellen Darlington, Jane Annie Gambrill, Jane Rayne, and Mary Ann Freedom Wilkinson. The following midwives were cautioned by the Board after charges alleged against them had been considered: Kate Martin, Ann Robinson, and Katherine Wraith. ——An ordinary meeting was held at Caxton House, Westminster, on July 25th, Dr. F. H. Champneys being in the chair. A letter from the solicitor to the London County Council was read reporting the conviction of Mrs. Ita Feldmann for unlawfully using a description implying that she was specially qualified to practise midwifery. A letter from the clerk of the Privy Council was received stating that the proposed amendment of Clause 2 (4) of the Notification of Births Bill did not commend itself to the Lord President. A letter was considered from Dr. R. P. Ranken Lyle as to ignorance of the rules shown by candidates at the recent examination in Newcastle and inquiring whether examiners should reject candidates on this ground alone. The Board decided that Dr. Lyle should be informed that as candidates were bound to know the rules (Rule C 4 (i.)) it was the duty of the examiners to ascertain that they did. Further, the secretary was directed to call the attention of the training schools involved to the necessity of adequately instructing their pupils in the rules as required by Rule C 4 (i.). A letter was received from Dr. J. J. Buchan, medical officer of health, St. Helens, forwarding a copy of a scheme adopted by the local supervising authority for the payment of medical practitioners sent for in cases of emergency to assist midwives. The Board decided that Dr. Buchan should be thanked for the care and trouble which he had taken in compiling the scheme, which it was hoped might lead to the difficulty being similarly dealt with in other places. A letter was read from a midwife as to the refusal of a parish medical officer to attend when sent for in a case of emergency. The Board decided that the midwife should be informed that a midwife has discharged her responsibility in advising that medical assistance should be sent for, and that when the patient is unable to pay a medical man's fee she should send directly to the district medical officer.

MEDICAL CRICKET MATCH.—A cricket match was played on the Gloucestershire county ground, Bristol, on July 26th, between two teams selected from the medical staff and students of the Royal Infirmary and General Hospital. After an interesting game the medical students won by four wickets.

THE INSTITUTE OF HYGIENE.—Lord Robert Cecil held a reception at the Institute of Hygiene on July 26th, which was largely attended by members of the medical profession. The exhibition room and lecture hall were very crowded at times but the guests found much to interest them in examining the various foods and beverages on exhibition as well as in the demonstrations of new appliances and machines in the hospital section.

LIVERPOOL CONVALESCENT INSTITUTION: ANNUAL MEETING AT WOOLTON.—The thirty-third annual meeting of the subscribers to the Liverpool Convalescent Institution took place on July 13th in the Gladstone Hall of the beautiful retreat at Woolton. The Lord Mayor of Liverpool occupied the chair. The report of the council embodied a satisfactory statement of progress, as is shown by the following summary. Judging by the statistics relating to the admissions of patients, the purpose for which the institution was originally established has been appreciated in greater measure each year. The best proof of recognition by the public of an institution such as that was the increasing use made of it. In applying that test it was seen that there had each succeeding year been stronger testimony to the regard in which it was held by the classes for whose health and restoration it was in the first instance thought to be desirable. In the year just closed the record of the total of patients was the highest known. During the 12 months no fewer than 2956 patients were admitted, compared with 2732 in 1905 and 2305 in 1896, showing in the period between 1896 and 1906 an increase in admissions to the extent of 651. Such an accession to the number of patients afforded complete satisfaction and confirmed the anticipation that the more general use of the scheme of nomination and recommendation by subscribers would justify the hope entertained at the time when the system came into vogue—viz., that the outcome would be a widening of the area over which the benefits of the institution had hitherto extended. So steady had been the demand for admission during the year that the accommodation had been extended by ten additional beds. In 1900 the amount received in yearly subscriptions was £966, whereas in 1906 £1192 were subscribed. Amongst the special donations were the following: Liverpool Hospital Sunday and Saturday Fund, £371; Liverpool Theatrical Football Gala Committee, £100; Mr. G. S. Goodwin, £50; Sefton Park Presbyterian Church, £23, with other sums totalling £40 Sir James Barr, in seconding a vote of thanks to the ladies' committee, said that he was very pleased to see that the ladies took such an interest in that important institution. A great deal of good was done by them; in fact, to their work was largely to be attributed the success achieved by such institutions.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *The Royal Assent.*

AMONGST the Acts of Parliament which received the Royal Assent on Friday, July 26th, were the King Edward's Hospital Fund for London Act and the Alton Military Hospital Act.

### *The Prospects of Private Members' Bills.*

The remaining weeks of the Parliamentary session in the House of Commons have, by a resolution passed on July 26th, been allocated to the dispatch of Government business. No Bills introduced by private Members can be advanced even after 11 o'clock at night unless they are adopted by the Government. In this way are the chances extinguished of the vast majority of private Members' Bills reaching the Statute book this session. The Government, having a heavy programme of its own to push forward, is little likely to load it still more with the measures promoted by private Members of the House. It is hoped that it may, however, be induced to adopt two or three Bills which have made considerable progress in the House by its goodwill but for which it is not responsible. In particular the claims of the Notification of Births Bill are being urged for preferential treatment in this respect. Lord ROBERT CECIL, who introduced the Bill, readily assented in Committee to modifications in the text of the measure to satisfy the Local Government Board. Some opposition to its details is threatened on report and doubtless the extent of this will determine the decision of the Government whether it will grant it special facilities. Sir JOHN BATTY TUKE and Sir HENRY CRAIK have given notice of an identical motion for the recommittal of the Notification of Births Bill. It runs thus: "That the Bill be recommitted for the purpose of amending it in several respects, particularly by striking out the provision that medical practitioners and midwives should be compelled to furnish the notification in question under penalties and without fee or reward."

### *The Post Office and Medical Men.*

Several paragraphs in the report of the Select Committee of the House of Commons on Post Office servants deal with the relations of that department with its medical officers. Medical officers attached to post-offices in the United Kingdom number about 3000 and are all unestablished. The report states that they hold their appointments at the pleasure of the Post-Master General and can be removed or retire without receiving or giving notice. Complaint was made to the Committee with regard to the recently introduced regulation by which medical officers are bound to retire at the age of 70 years, and it was claimed that the regulation should be confined to future appointments only. The Committee does not recommend any alteration in the Post-Master General's circular respecting the age of retirement, although it observed that this might have been advantageously fixed at 65 years. It is further of opinion that the report on the efficiency of the medical officers should be the actual work of the surveyor himself subject to an appeal to the chief medical officer. It regards the present fee of 8*s*. 6*d*. per head for medical treatment as sufficient in the case of members of the staff not on the regular list as well as those on it. The Committee recommends that in future the fee for the entrance examination of established men should be 10*s*. each, to include any subsequent examination during probation. It reports against placing medical officers on the establishment. In another portion of its report the Committee expresses the opinion that greater attention should be paid to the sanitary requirements of the Post Office staff. It further states that it is "of opinion that it is improper for a civil servant in the position of chief medical officer of the Post Office to hold such a position as medical officer to civil service stores." However, it recognises that Dr. WILSON had obtained authority to hold these appointments. It recommends that it should be part of the regular duty of the head-quarter medical staff from time to time to pay surprise visits of inspection and to report on the principal offices in London and the provinces. For the adequate performance of this duty some of its officers should hold approved diplomas in sanitary science or public health.

### *The Government's Programme.*

Sir HENRY CAMPBELL-BANNERMAN in making a statement as to the business to be taken in the remaining weeks of the Parliamentary session mentioned the Bills which the Government did not intend to proceed with. These included the Poisons and Pharmacy Bill, the Lunacy (Ireland) Bill, and the Municipal Milk Depôts Bill. He went on to state that there were a number of Bills which the Government hoped to be able to pass, but which, if they were keenly opposed, could not be proceeded with. These included the Education (Scotland) Bill, which contains clauses dealing with the feeding of necessitous school children, the Vaccination (Scotland) Bill, and the Public Health (Scotland) Bill. He then came to the Bills which the Government was resolved to proceed with. These included the Butter and Margarine Bill, the Probation of Offenders Bill, the Vaccination Bill, and the Public Health (Regulations as to Food) Bill.

### *Bills Advanced.*

The Butter and Margarine Bill, the Probation of Offenders Bill, and the Vaccination Bill were all considered and read a third time.

### *Bills Withdrawn.*

The orders for the second reading of the Poisons and Pharmacy Bill and the Municipal Milk Depôts Bill were discharged and the Bills were withdrawn.

### *The Royal Commission on Tuberculosis.*

The Royal Commission on Tuberculosis has presented to Parliament a large volume of evidence relating to experiments bearing on the pathogenic effects of bovine viruses.

## HOUSE OF LORDS.

### Wednesday, July 31st.

### *Public Health (Scotland) Amendment Bill.*

Lord Hamilton of Dalzell, in moving the second reading of the Public Health (Scotland) Amendment Bill, explained that certain clauses in the Public Health (Scotland) Act of 1897 had been found to be unduly restrictive in the case of the milder infectious diseases, and there was no doubt they would be found to be absolutely intolerable if they were applied to consumption. It was believed that it was this fact which had prevented the local authorities from including consumption in the list of notifiable diseases although, on other grounds, they were fully aware of the desirability of doing so. Certain relaxations of the existing law were, therefore, provided in the Bill and a certain discretion was left to the medical officer as to what adequate precautions should be taken.

Lord Balfour of Burleigh expressed approval of the measure.

The Bill was read a second time.

## HOUSE OF COMMONS.

### Wednesday, July 24th.

### *Infectious Disease in Schools.*

Mr. G. J. Cooper asked the President of the Board of Education whether his attention had been drawn to the exclusion, from September, 1906, to the present date, of Ellen and Edward George from the Rolls-road London County Council school on the ground that they were suffering from ringworm; whether the certificate excluding these children from school was signed by a nurse; whether he was aware that, on the children being taken to the London Hospital for treatment the parents were told that the children were not suffering from ringworm but steatorrhœa, a non-infective disease; whether, although the parents had given the teacher a certificate complying with Section C, Sub-section 10, Article 3 of the School Management Code, the children were still refused admission; whether this exclusion was in opposition to the wishes of the managers of the school, who were anxious that the children should return; whether the nurse on whose certificate the children were excluded possesses any medical qualification; if not, whether a medical certificate given by an unqualified person could exclude a child from school; and whether his department proposed to take any, and, if any, what, action in the matter.—Mr. McKenna furnished the following written answer: The Board of Education has no information as to the incidents referred to. In the event of an appeal being made to it on the ground that the children have been excluded from school on other than reasonable grounds the circumstances will be carefully investigated before a decision is arrived at.

### Thursday, July 25th.

### *International Congress on School Hygiene.*

Dr. V. H. Rutherford asked the President of the Board of Education whether he was aware of the fact that several foreign powers could not see their way to send delegates to the Second International Congress on School Hygiene to be held in London next month unless they received invitations from His Majesty's Government; and whether, in the interests of international goodwill and also of education, both in this country and throughout the world, His Majesty's Government would issue official invitations and so insure the success of the Congress.—Mr. Lough (who replied on behalf of Mr. McKenna) said: No, sir, I have received no authenticated official information that any foreign Governments have abstained from sending official representatives to the Congress for the reasons alleged in the question. I have verified from official sources that at least one of the principal European Governments, in respect of which the allegation is made, is in fact sending official representatives to the Congress, having apparently felt no difficulty as to the invitation, so that in its case the allegation must be unfounded. I have heard no suggestion except as part of the allegation above referred to, that any other Governments have felt differently in this respect. As to the last paragraph of the question, in view of the facts I have ascertained, as above explained, I have nothing to add to the answer my right honourable friend gave last week to the honourable member for Leicester.

### *The Medical Bureau of the Board of Education.*

Mr. Bridgeman asked the President of the Board of Education whether any estimate had been prepared as to the cost of salaries and administration of the medical bureau which it was proposed to appoint under the Board; and whether such bureau would supervise medical questions which might arise in Welsh schools.—Mr. Lough (who answered on behalf of Mr. McKenna) said: The matter is now under my right honourable friend's consideration in consultation with the Treasury. The answer to the second paragraph is in the affirmative.

### *Inoculation for Plague.*

Mr. John Robertson asked the Secretary of State for India whether, in view of the fact that inoculation for plague in the Punjab of late had been resorted to in increasing numbers of cases and that the death-rate from plague was there at the highest, he would take into consideration the expediency of abandoning the practice as dangerous.—Mr. Morley replied: The opinion of those who have had experience is that the health of the patients is unimpaired by inoculation, even where they are children of poor constitution; and that it confers immunity of from six to 12 months or more Statistics in Bombay show in the case of municipal labourers that while the percentage of uninoculated who were attacked by plague was 6·7 that of the inoculated was only 0·19.

### Monday, July 29th.

### *Medical and Nursing Assistance in the Highlands.*

Mr. Cathcart Wason asked the Secretary for Scotland whether he was aware of the fact that the Congested Districts Board was precluded from in any way assisting the poor people of the Highlands and Islands in respect of medical and nursing assistance; that there were islands and districts far distant from any possible medical and nursing assistance; and whether, in view of the fact that the position of the Congested Districts Board was now under consideration, he would consider the desirability of extending its powers or the powers of any body that might succeed it.—Mr. Sinclair replied: My honourable friend is correct in stating that the existing powers of the board do not extend to the purposes referred to. I am aware that the resources of the authorities responsible for public health in certain districts are slender and I do not think that the extension of powers to the Congested Districts Board is a way of meeting the difficulty.

### Tuesday, July 30th.

### *A Vaccination Case at Croydon.*

Mr Lupton asked the President of the Local Government Board whether he was aware that the boy who died in Croydon on April 29th last and whose case was investigated by Dr. S. M. Copeman of the Local Government Board, only broke out into sores about a week or ten days after vaccination, and that it was in order to cure these sores that the public vaccinator prescribed bromide treatment; and if this were so whether he would refer the question of the safety or otherwise of calf lymph to a Committee of the House or a Royal Commission —Mr. John Burns answered: I do not understand the facts are as my honourable friend supposes. I am informed that the child was unsuccessfully vaccinated on Jan. 4th and successfully on the 11th of that month. The sores seem to have first appeared on Jan. 24th, whilst the bromide was first administered on Jan. 7th. It will be seen therefore that the administration of bromide commenced before the sores made their appearance. I do not understand that it was prescribed in order to cure the sores. It seems to have been suggested as a remedy for the fits from which the child suffered.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

Benson, E. G. D., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stanley District of the county of Durham.

Bowman, G. F., M.B., M.Ch. Vict., has been appointed Medical Officer of Health by the Limehurst Rural District Council.

Brown, Alfred Austin, M.B. Melb., has been appointed Inspector of Food for Export, Department of Agriculture, Victoria, Australia.

Fetherstonhaugh, Robert Trevor, M.R.C.S., M.B. Melb., L.R.C.P. Lond., has been appointed Acting Port Health Officer (*pro tem.*) for the Port of Geelong, Victoria, Australia.

Gould, H. U., M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Shaftesbury District of the county of Dorset.

Hawksley, W. L., M.B., Ch.B., D.P.H. Liverp., has been appointed Assistant Medical Officer at the New City Hospital for Infectious Diseases, Fazakerley, Liverpool.

Hollick, B. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sturminster Newton District of the county of Dorset.

Lewis, William James, L.R.C.P. & S., L.M. Edin., L.F.P.S. Glasg. has been appointed Medical Officer of Health by the Pontardawe (Glamorganshire) Rural District Council.

Spowers, E. A., M.B., Ch.B. Melb., has been appointed Honorary Gynæcologist to Out-patients and Assistant Gynæcologist to In-patients at St. Vincent's Hospital, Victoria, Australia.

Webb, Arthur Bridges, M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Grenville, Victoria, Australia.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £100 per annum, with board and lodging.

Bath, Bailbrook House.—Medical Superintendent. Salary £450 per annum, with extra payments, board for self and wife if married, quarters, laundry, and attendance.

Birmingham, Queen's Hospital.—House Physician. Also Obstetric Ophthalmic House Surgeon for seven months. Salaries at the rate of £50 per annum, with board, lodging, and washing.

Bournemouth, Royal Victoria Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Bridgnorth and South Shropshire Infirmary.—House Surgeon. Salary £100 per annum, with board and lodgings.

Brighton, Hove, and Preston Dispensary.—House Surgeon. Salary £160, with rooms, coals, gas, and attendance.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

Cairo, School of Medicine (Egyptian Government, Ministry of Education).—Assistant to the Professor of Pathology. Salary £E. 320 per annum.

Colchester, Essex and Colchester General Hospital.—House Physician. Salary £80 per annum, with board, residence, and washing.

Coventry and Warwickshire Hospital.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, washing, and attendance.

Devon County Asylum.—Assistant Medical Officer. Salary £140, with board, apartments, and laundry.

Devonport, Royal Albert Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

"Dreadnought" Hospital, Greenwich.—Pathologist. Salary £100 per annum.

Egyptian Government, Kasr-El-Ainy Hospital.—Resident Medical Officer. Pay £250 a year, with quarters, servants, washing, coals, and light.

Egypt, Public Health Department.—Sub-Inspector of Ophthalmic Hospitals.

Gloucester, General Infirmary and the Gloucestershire Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.

Grimsby and District Hospital.—Resident House Surgeon. Salary £100 per annum, with board, lodging, and washing.

Huddersfield Infirmary.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Hull, Royal Infirmary.—Casualty House Surgeon. Salary £50, with board and lodging.

Ipswich, East Suffolk and Ipswich Hospital.—Third House Surgeon. Salary £50 per annum, with board, attendance, and washing.

Lancaster, Royal Lancaster Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

Liverpool Dispensaries.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

Liverpool, Royal Southern Hospital.—Resident Pathologist and Registrar. Salary £100, with board and residence.

Manchester, Ancoats Hospital.—Resident House Physician.

Manchester, Monsall Fever Hospital.—Fourth Medical Assistant. Salary £100 per annum, with board, lodgings, and washing.

Mickleover, Derby County Asylum.—Junior Assistant Medical Officer. Salary £120, rising to £150 per annum, with apartments, board, washing, and attendance.

Norfolk and Norwich Hospital.—House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also Two Assistant House Surgeons for six months. Salary £20, with board, lodging, and washing.

North-Eastern Hospital for Children, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

Northampton, Borough of.—Medical Officer of Health. Salary £400 per annum, rising to £500, with reasonable carriage expenses.

Northampton General Hospital.—Assistant House Surgeon, unmarried. Salary £50 a year, with apartments, board, washing, and attendance.

Paisley, Infectious Diseases Hospital.—Assistant Medical Officer. Salary £100 per annum, with board, washing, and attendance.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months, renewable. Salary £50, with board, residence, and washing.

Rotherham Hospital and Dispensary.—Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

Royal Dental Hospital, Leicester-square.—Morning House Anæsthetist. Salary £50 per annum.

Royal Eye Hospital, St. George's-circus, S.E.—Refraction Assistant. Salary £40 per annum. Also Clinical Assistants.

Royal Institute of Public Health.—Demonstrator of Comparative Pathology and Bacteriology.

Salford Royal Hospital.—Junior House Surgeon. Salary at rate of £50 per annum, with board and residence.

Southampton, Royal South Hants and Southampton Hospital.—House Physician. Salary £100 per annum, with rooms, board, and washing.

Southport Infirmary.—Residents' Senior House Surgeon. Also Junior House and Visiting Surgeon, unmarried, for six months. Salary of Senior at rate of £90 per annum, and of Junior £70 per annum, with residence, board, and washing.

Stockport Infirmary.—House Surgeon. Salary £100 per annum, with board, washing, and residence. Also Junior Assistant House and Visiting Surgeon. Salary £40 per annum, with board, washing, and residence.

Teignmouth Hospital, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

Whitehaven and West Cumberland Infirmary.—Resident House Surgeon. Salary £120 a year, with board and lodging.

Zanzibar Government.—Bacteriologist. Salary £300 a year, rising to £400, with free quarters, &c.

# Births, Marriages, and Deaths.

## BIRTH.

Eccles.—On the 29th July, at 124, Harley-street, W., the wife of W. McAdam Eccles, M.S., F.R.C.S., of a son.

## MARRIAGE.

Archibald—Riddle.—On July 25th, at Holy Trinity, Upper Tooting, Richard James Archibald, M.R.C.S., L.R.C.P., to Gertrude Florence, eldest daughter of Frederick Henry Brimble Riddle of Upper Tooting.

## DEATH.

Brumwell.—On July 29th, at Newcastle-on-Tyne, aged 54 years, Ernest Brumwell, M.D., M.R.C.S., L.S.A., of North Shields.

# Notes, Short Comments, and Answers to Correspondents.

## GARBAGE MONGERS FINED.

At the Old-street police station Mr. Cluer recently fined a man named Shuttleworth £50, with £26 5s. costs, upon three summonses charging him with having on his premises 250 cases of condensed milk on March 1st, 95 such cases on June 8th, and two pieces of beef, all intended for human food and unfit for such a purpose. The cases each contained four dozen tins and some of the marks showed that they had been returned from South Africa. The owner was described as an owner of house property, carrying on registered common lodging-houses and an eating-house, and it was part of the case for the prosecution that the blown tins of condensed milk were to be sold to the inmates of the common lodging-houses. The defence consisted of a story that the shed in which the stuff was found was sublet by the defendant to two men who had deposited it there until it could be sold as food for pigs. This was not corroborated. The fine inflicted was promptly paid. In another case, on July 25th Julius Winterman, a baker and confectioner of 144, High-street, Kingsland, was fined £10, with £6 6s costs, or in default sentenced to two months' imprisonment, for being in possession of 465 tins of condensed milk which was unfit for human consumption. Mr. Young, who defended, put in an invoice showing that the prisoner had bought 360 tins at 1*d.* a piece. Mr. Young added that it was a fair price for a quantity and that the prisoner had dealt with the same firm for three years without complaint. Mr. Cluer, the magistrate, is reported as saying: "Some people do not seem to care how much they poison London. Those who sold these tins to the defendant ought to be proceeded against, for they ought to know that the stuff was bad if they could make a profit and sell at 1*d.* per tin." We quite agree with Mr. Cluer, but the penalty for an offence of this kind should be made much heavier than it is. There is little use in holding conferences about physical degeneration, infantile mortality, and other similar matters if unscrupulous dealers are allowed to sell to the poor what is neither more nor less than poison.

## TRUE CLEANLINESS.

*To the Editors of* The Lancet.

Sirs,—Does your correspondent Mr W. W. Strickland (The Lancet, July 27th, p. 270) mean that a man, whether a Chinaman or a North Italian, or any one else, employs a more cleanly and more sanitary method of blowing his nose when he uses his fingers only for the purpose than he would if he used a pocket-handkerchief? If not, what is the practice of the native of India to which he refers? If so, are we recommended, exhorted, and ordered not to spit in streets, railway-carriages, and other public places but at the same time urged to blow our noses in public and in private "with our fingers"? If this is the case I am afraid that without making any admission as to the length of my nose or the absence or presence of fur on my face I must remain unconvinced, insanitary, and uncleanly. Perhaps, however, I have misunderstood, being A Layman.

July 31st.

## COLOTOMY—CONSTIPATION.

We have received several replies to the inquiry of "The Sufferer (a Medical Man)" which appeared in The Lancet of July 20th, p. 204. From these we make the following extracts:—

1. A correspondent writes that personal experience enables him to recommend a trial of liquid paraffin as described by Dr. Neville Wood in the *West London Medical Journal* in April, 1906. He also mentions parolein and regulin, the latter of which is reported on in our "Analytical Records" in The Lancet of June 29th, p. 1782.

2. "Octogenarian" suggests that for some time before the performance of the colotomy there had been obstruction which might have been met by a long-continued liquid dietary, and if so, the muscular contractility of the intestine would be enfeebled from diminished use. In such circumstances drastic purgatives would be injurious. He advises the patient to eat very slowly, masticating thoroughly, and not to drink whilst eating in order that an abundant flow of saliva should accompany the food into the stomach. A drink of hot water afterwards "would be to the good." All forms of alcoholic stimulant should be avoided. If milk is largely used it should be in the form of junket either by itself or with various kinds of fruit. Fatty and oily matter—fat bacon, butter, suet, cream, and such like—should be taken freely. Treacle and coarse oatmeal in the form of the old-fashioned "parkin," stewed figs, and French plums may be taken. If the patient is capable of brisk exercise nothing can be better than a five or six mile walk within the hour. For patients who can take it a "cold tub" when getting out of bed in the early morning is of great value. For medicine he recommends the rather startling combination of small doses of hyoscyamus and nux vomica—one grain of each extract in a pill three times a day. (We consider this dose of nux vomica positively dangerous.) If the patient is *greatly* tempted to use an aperient it had better be one drachm of either castor oil or olive oil every

morning; if these small doses are steadily persevered with improvement gradually results.

3. Mr. Penrose Williams recommends a pill containing one-sixth of a grain each of calomel and extract of belladonna and two grains of confection of senna, to be taken two, three, or four times a day.

4. Mr. J. Hopkins Walters writes that if the colotomy is left-sided the case would be appropriate for appendicostomy, which would enable the bowel to be washed out daily and would make aperients unnecessary.

5. Dr. J. Cropper recommends an enema of cold or tepid water slowly introduced into the bowel before breakfast, varied in amount from one-quarter to three-quarters of a pint. This will produce a soft motion in an hour or two.

6. Dr. John Alcindor recommends faradisation of the abdomen from ten to 20 minutes every day, gentle masssge of the abdomen daily, and a glycerine enema two or three times a week. Drugs should be avoided during the first week but in the second week ten minims of dilute nitrohydrochloric acid and from five to ten minims of tincture of nux vomica may be taken three times a day after food. In course of time the enemata may be gradually discontinued and sulphate of magnesium should be added to the prescription.

### NO CREDIT AT THE ALL-NIGHT STATION.

THE *Vseob. Dnevnik*, commenting on the new medical station which is kept open day and night in Bratskoi-street, Warsaw, says:—"When an urgent night call is telephoned to the station the answer is that 'the cost of the call must be paid at the station before the medical officer will start out. The station gives no credit.'" The editor of our Russian contemporary adds that "the Varsovians pride themselves on their Europeanisation"; but he does not know the conditions which prevail, at any rate, in this country. Our medical men are liable at all times and in all places to be summoned to the assistance of the public, and if a suggestion is made that a fee should be paid first their brutal attention to business is deeply resented. When the patient dies it is quite usual for the medical man to find himself stigmatised by a coroner's jury as a callous ruffian, the jury not even taking the trouble to find out whether the seriousness of the case was ever explained to the medical man. We are glad to say that coroners are beginning to recognise the gross injustice of this attitude towards medical men, and are directing juries to remember that medical men cannot work without meat and bread and are not able to commandeer these necessities but are compelled to pay for them. We are far, however, from the Varsovian position where the public is made to pay for its medical assistance on the spot, and as a matter of course.

### A CORK PORCELAIN BOTTLE SEAL.

THIS consists of a ring of cork pressed on the lip of the bottle by means of a stout wire spring attached to a porcelain stopper. It provides a perfectly clean method of sealing the contents of a bottle, the only substance in contact with the liquid being a narrow strip of cork. Moreover, the sealing is effectual, for we examined a bottle containing ordinary soda water. The bottle was kept upright for some time under water when not a trace of gas was observed to escape. On liberating the stopper the soda water was found to be briskly effervescent. It is suggested that this system would offer considerable advantages for sealing milk and certainly less innocuous materials than clean glass and cork could scarcely be used. The specimen was submitted to us by the Non-conductor Cork Co., of 2, Rangoon-street, London, E.C.

### THE FATE OF A LION-TRAINER.

AN unfortunate assistant to a trainer of lions came by his death at a Gloucester theatre recently in circumstances which well illustrate the risks of such an employment. It appears that he had been left in charge of the animals and that he had attempted to give them some unauthorised training. One of the lions escaped into a dressing-room and in trying to entice the animal back he threw a chair at it, whereat it pounced upon him and mauled him so that he speedily succumbed to the injuries. In this instance the presence of a public audience did not add to the horror of the occurrence and the victim was apparently in some measure to blame for the lion's ferocious onslaught as the animal enjoyed the reputation of having a good temper in ordinary circumstances, but in a sense he was "butchered to make a Roman holiday," as his whole occupation depended upon the demand that there is for such perilous exhibitions. While there remains such a demand there will always be found courageous if stupid persons to supply the required performances and it must be conceded that they earn their living honourably if, as we think, foolishly, but it will mark an epoch of ethical advance in the nation that first refuses to supply an audience to witness their entertainments. We believe that the animals are nowadays trained humanely in most cases and we are even ready to grant that the feat of training them may entail the development of a few undoubted virtues in the trainers, but we cannot admit that the effect, if any, on the minds of those who witness performances with dangerous wild beasts is of an edifying nature and in consideration of the undoubted danger of these feats their suppression appears to be desirable.

### LONGEVITY IN INDIAN GAOLS.

THE habitual criminals of India who spend the greater part of their time in gaols have a far better prospect of longevity than their congeners who respect the law and lead honest lives. Such at least is the opinion of the writer of an editorial article in a recent issue of the *Pioneer*, his conclusion being based on an examination of the vital statistics of the United Provinces. Even when allowance has been made, he adds, for the fact that a large proportion of the prisoners are in the prime of life and that there is no infant mortality to swell the returns, the figures are a striking record of the care bestowed on the health of the wrong-doers. During the period under observation the free population suffered badly from malarial fever and also, in certain districts, from famine, but in the prisons these fruitful causes of mortality were absent. In Lucknow city the death-rate was 50·41, in Allahabad 36·87, and in Bareilly 34·19, whereas in the several gaols of those places it did not in any case reach 10 per 1000.

### TINNED FINGER-STALLS.

THE Halifax board of guardians has recently had a most unpleasant reminder of the multitude of evils that may be covered by a brightly labelled preserving tin. We learn from the *Local Government Chronicle* that the master of the Halifax workhouse reported to his board that on opening a tin of apricots for use in the workhouse he found amongst the fruit seven rubber finger-stalls and two cotton ones "which had evidently all been used by the persons tinning the fruit." The purveyors of this tin of fruit were communicated with on the matter. Comment on such absolutely disgusting carelessness would seen almost superfluous were it not for the fact of the number of finger-stalls found; surely it passes the range of probability that no less than nine should be accidentally deposited in one tin; the occurrence has the appearance of being a particularly nasty piece of mischief on the part of someone having access to the tin before it was closed. It is not unlikely that some of the finger-stalls may have covered septic wounds, and the possibility of a repetition of such an occurrence should be severely guarded against by the manufacturers.

### ALUMINITE FIREPROOF CHINA.

Messrs. Else and Co., Limited, of 16, Crane's-buildings, Church-street, Liverpool, have submitted to us a small sample cooking-pan made of the above material. It has the same smooth, bright, white surface as porcelain and appears to be unattacked by acids and to be free from poisonous metals. The surface was not in the least corroded when touched with strong hydrochloric acid nor was any darkening produced when sulphuretted hydrogen was brought into contact with the aluminite. We should say that this material is excellently adapted for vessels destined to contain food or for cooking purposes. It is spotlessly white and presents a beautifully clean smooth surface.

◆

*One Interested in the Case.*—The matter is one for the medical officer of health and the sanitary authorities to deal with. Full information should be given to the officials.

*D.P.H.* will find year by year in the Students' Number of THE LANCET the books recommended for public health examinations. It is well, however, to inquire as to the curriculum at the particular university or corporation where the candidate intends to obtain his diploma. The demonstrators in practical work will give the best advice as to manuals.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, August 1st, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacno. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| July 26 | 29 93 | S.W. | 0·02 | 111 | 73 | 55 | 57 | 61 | Fine |
| ,, 27 | 29 89 | S.W. | 0·06 | 121 | 74 | 61 | 63 | 63 | Raining |
| ,, 28 | 30 03 | W. | ... | 90 | 71 | 60 | 61 | 63 | Cloudy |
| ,, 29 | 29 92 | S.W. | 0·03 | 128 | 75 | 60 | 60 | 64 | Fine |
| ,, 30 | 29·70 | W. | 0·03 | 113 | 68 | 58 | 59 | 62 | Cloudy |
| ,, 31 | 29·97 | WNW | 0·09 | 115 | 66 | 51 | 53 | 58 | Fine |
| Aug. 1 | 30·00 | N.W. | ... | 118 | 63 | 50 | 53 | 58 | Fine |

**During the week marked copies of the following newspapers have been received:**—*Daily Telegraph, Scarborough Evening News, Standard, Cornish Times, Westminster Gazette, Liverpool Post, Manchester Guardian, Staffordshire Sentinel, Edinburgh Evening News, Dublin Telegraph, Manchester Weekly Times, Glasgow Herald, Leeds Mercury, Daily Chronicle, Gloucester Citizen, &c.*

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children. Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (10th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (5th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**TUESDAY** (6th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

**WEDNESDAY** (7th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

**THURSDAY** (8th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**FRIDAY** (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

**SATURDAY** (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | | |
|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 |
| Six Months ... ... ... | 0 | 16 | 3 |
| Three Months ... ... | 0 | 8 | 2 |

| TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|
| One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## Communications, Letters, &c., have been received from—

**A.**—Rev. J. W. Atkinson, Lond.; Messrs. Allen and Hanburys, Lond.; Aeosan Co., Birmingham; Messrs. Aked and Aked, Lond.; Anderson's College Medical School, Glasgow; A. J. M.; Army Medical Service, Lond., Director-General of the; Australasian Medical Congress, Melbourne, General Secretary of; Abbott Alkaloidal Co., Chicago; A. E. M.; The After-care Association, Lond., Secretary of.

**B.**—Mr. Albert Benthall, Lond.; Messrs. R. and J. Beck, Lond.; Messrs. Burgoyne, Burbidges, and Co., Lond.; British Dia Malt Co., Lond.; Mr. C Birchall, Liverpool; Brighton, Hove, &c., Dispensary, Assistant Secretary of; *Barrow News*, Manager of: Mr. H. Butterfield, Northampton; Messrs. Burroughs, Wellcome and Co., Lond.; Bailbrook House, Bath, Medical Superintendent of; Messrs. T. B. Browne, Lond.; British Institute of Social Service, Lond., Secretary of; Mr. H. Jeaffreson Brewer, Lond.; Dr. J. Cunningham Bowie, Cardiff.

**C.**—Mr. F. W. Clarke, Manchester; Messrs. Crossley and Co., Lond.; Messrs. Carnrick and Co., Lond.; College of Preceptors, Lond., Secretary of; Messrs. John Clarke and Co., Belfast; Dr. J. C. Connell, Kingston, Ontario; Miss C., Lond.; Mr Harold Child; Mr. F. H. Cooke, Birch; Children's Country Holidays Fund, Lond., Secretary of; Messrs. Cadbury Bros., Bournville.

**D.**—Dr. Henry Davy, Exeter; David Lewis Colony, Manchester, Secretary of; Derby County Asylum, Clerk of; Dr. W. T. Dougal, Pittenweem.

**E.**—Electrical Standardizing, &c., Institute, Lond., Secretary of; Dr. Alexander M. Elliot, Lond.

**F.**—Mr. T. Fraser, Babbicombe; Messrs. Fairchild Bros. and Foster, Lond.; Mr. S. Fisher, Lond.; Frame Food Co., Lond.; Mr. L. J. Foster, York; Mr. T. R. Freeman, Monkton Combe.

**G.**—Messrs. W. and A. Gilbey, Lond.; Messrs. R. W. Greeff and Co., Lond.; Messrs J. H. Graves and Co., Chicago; Great Eastern Railway Co., Continental Traffic Manager of; Mr. F. Goodenough, Nottingham; Grimsby and District Hospital, Secretary of; Mr. J. Gillingham, Chard; Gloucester General Infirmary, Secretary of.

**H.**—Miss C. Hind, Ockley; Dr. F. Howard Humphris, Ilkley-in-Wharfedale; Mrs. K. H. Holmes, West Ardsley.

**I.**—Invalidendank, Berlin, President of; XIV. Internationaler Kongress für Hygiene und Demographie, Berlin.

**J.**—Dr. A. B. Judson, New York; J. C.

**K.**—Messrs. Knoll and Co., Lond.

**L.**—Mr. H. K. Lewis, Lond.; Messrs. Lee and Nightingale, Liverpool; Leeds University School of Medicine, Dean of; Messrs. Jeremiah Lyon Co., Lond.; Dr. J. H. Lightbody, Bexhill-on-Sea; Mr. J. B. Lamb, Lond.; Mr. C. Lupton, Leeds; Dr. G. S. Landon, Northampton; The London School of Tropical Medicine, Secretary of; Dr. T. D. Luke, Edinburgh.

**M.**—Dr. N. D. Michou, Khartoum; Mr. F. H. Mountstevens, Bristol; Professor Howard Marsh, Cambridge; Manchester Corporation, Medical Officer of Health of; Mellin's Food Co., Lond.; Dr. H. Mason, Barnsley; Messrs. C. Mitchell and Co., Lond.

**N.**—Mr. M. Nierenstein, Runcorn; Mr. H. A. E. Noble, Buntingford; Nurses' Co-operation, Lond., Lady Superintendent of; *North Queensland Herald*, London Correspondent of; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.

**O.**—Mr. W. H. F. Oxley, Lond.; Mr. J. Offord, Walton-on-the-Naze; Mr. H. Oliver, Lond.

**P.**—Mr. Y. J. Pentland, Edinburgh; Mr. F. J. Pearse, Lond., Messrs. Peacock and Hadley, Lond.; Peckham House, Lond., Secretary of; Paper Cutting and Toilet Requisite Co., Lond.; Mr. J. Prosser-Evans, Lond.; *Pediatrics*, New York, Editor of; *The Poor-Law Officers' Journol*, Lond., Editors of; Mr. D. Montgomerie Paton, Melbourne; Dr. D. W. Patterson, Newcastle-on-Tyne.

**Q.**—Queen's Hospital, Birmingham, Secretary of.

**R.**—The Retreat, York, Secretary of; Royal Victoria Hospital, Bournemouth, Secretary of; Messrs. Reynolds and Branson, Leeds; Dr. W. Ford Robertson, Edinburgh.

**S.**—Mr. W. G. Sutcliffe, Margate; Sunderland Infirmary, Secretary of; Stockport Infirmary, Secretary of; Messrs. Spottiswoode, Dixon, and Hunting, Lond.; *South Wales Argus*, Newport, Salford Royal Hospital, Secretary of; Southport Infirmary, Secretary of; Star Engineering Co., Wolverhampton; Messrs. W. H. Smith and Son, Colwyn Bay; Scholastic, Clerical, &c., Association, Lond.; S. N.; *South Wilts Mirror*, Salisbury.

**T.**—Messrs. Truelove and Hanson, Lond.; T. S.; Dr. Edgar Trevithick, Cheltenham.

**U.**—University of London, Principal of.

**W.**—Mr. W. P. Walsh, Exeter; Messrs. Wright and Co., Bristol; Messrs. F. Williams and Co., Lond.; W. E S.; *Wilts and Gloucester Standard*, Cirencester; Dr J. D. Williamson, Belfast; Surgeon H. V. Wells, R.N., Chatham; Mr. A. Wing, Ilford; Mr. C. Gordon Watson, Lond.; Miss E. H. Watts, Baltimore; Willing's Advertising Offices, Lond.. Sir William Bennett, K.C.V.O., Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Dr. J. Aikman, Guernsey; Dr. E. Aylward, Humshaugh; Mr. T. Armstrong, Lond.; Dr. W. S. Anderson, Chapel-en-le-Frith; A. M. S.; A. M. R.; Mr. E. Arnold, Lond; A. E. G.; Ancoats Hospital, Manchester, Secretary of; Messrs. T. and R. Annan and Sons, Glasgow; A. J. L.

**B.**—Mr. J. E. Brooks, Hereford; The Hon. E. T. Born, Port Stanley, Falkland Islands; Colonel S. Burrard, R.E., Yarmouth; Mr. A. E. Barker, Lond., Bovril, Ltd., Lond.; Lieutenant F. E. Bissell, R.A.M.C., Portsmouth; Mr S. H. Benson, Lond.; Dr. W. J. Bannister, Cork; Mr. T. Bell, Lancaster; Mrs. B.; Mr. M. J. Blake, Dundalk; Dr. J. S. Byrne, Cinderford; Dr. D. Brown, Greenock; Dr. C. Bolton, Lond.

**C.**—Mr. F. Clarke, Mitcham; Messrs. Carnrick and Co., Lond.; Messrs. Callard and Co., Lond.; C. B. M.; Mr T Clarke, Morley; Mr. W. H. Cook, Huddersfield; Clayton Fire Extinguishing Co., Lond.; Cumberland Infirmary, Carlisle, Secretary of; Coventry Hospital, Secretary of; Messrs. E. Cook and Co., Lond.

**D.**—Mr. J. F. Dobson, Leeds: Dr. J. H. Davies, Port Talbot: Mr. R. W. Doyne, Lond.; D. H.; Dr., Beckenham; Dr. D.; D. C.; Dublin School of Physic, Secretary of; Messrs. Duncan, Flockhart, and Co., Edinburgh; Denver Chemical Co., New York; Devonport County Borough, Treasurer of; Deltoid, Lond.

**E.**—Mr. J. Evans, Maidstone; Dr. W. Ettles, Lond.; E. R. B.

**F.**—Dr. A. C. Ferguson, Thirsk; Messrs. Ferris and Co., Bristol; Fellows Manufacturing Co., New York; Mr. S. Farries, Lugar; F. H. C.

**G.**—Mr. E. S. Galbraith, Lond.; Messrs. Gale and Co., Lond.; Galen Manufacturing Co., Lond.; Germany, Consul-General for, in London; G. H.

**H.**—Dr. C. M. Hinds-Howell, Lond.; Home Sanatorium, Bournemouth Medical Superintendent of; Messrs. Hill and Hoggan, Glasgow; H. E. J.; H. D. M. C.; Mr. F. E. Heubeck, Cwmaman; Messrs. F. A. Hardy and Co., Lond.; Messrs. Hooper and Co., Lond; Dr. E C. Hulme, Wigan; Mr. G. Hughes, Chatham.

**I.**—Mr. A. Ireland, Grand Turk, W. Indies.

**J.**—Mr. J. F. Jefferies, Cork; Jenny Lind Infirmary, Norwich. Secretary of; J. H., Finsbury Park; Mr. L J. Jarvis, Lond.; Mr. J. Joule, Sampford Peverill.

**L.**—Mr. C. Lloyd, Taradevi; Dr. R. A. Lambert, Aldbourne; Leeds Union, Clerk of; Lister Institute Lond., Director of.

**M.**—Major A. Mears, Cranbrook; Dr. D. T. Macleod, Southwold; Mr. R G. Murray, Lond.; Mr. E. Merck, Lond.; M J.; Dr. H. Macnaughton-Jones, Lond.; Dr. H. C. Moore, Hereford; Maltine Manufacturing Co., Lond; "Millbrook," Aldrington; Manchester Hospital for Consumption, Secretary of; Mr. E. W. Marshall, Manchester.

**N.**—Messrs. Neyroud and Son, Lond.; National Dental Hospital, Lond., Dean of; Northern Medical Association, Glasgow; Messrs Newton, Chambers, and Co., Thorncliffe.

**O.**—O. S.

**P.**—Mr. W. O. Piper, Nelson; Dr. Philip, Boulogne-sur-Mer; Mr. W. Parkinson, Burnley; Messrs. G. Pulman and Sons, Lond.; P. H. S.; Dr. J. Phillips, North Shields.

**R.** Mr. C. Rolleston, Lond.; Royal Albert Hospital, Devonport, Secretary of; Professor E Waymouth Reid, Dundee; Royal Baths, Harrogate, General Manager of; Royal Victoria Hospital, Dover, Secretary of; Royal College of Surgeons in Ireland, Dublin, Dean of; Surgeon P. N. Rivaz R.N., Shanghai; Radcliffe Infirmary, Secretary of; R. R.; Royal South Hants Hospital, Southampton, Secretary of; Royal British Nurses' Association, Lond.; Mr. C. A Ryde, Brussels; Rotherham Hospital, Secretary of.

**S.**—Mr. D. Sen, Maldah, India; Mr. A. J. Swanton, Sheffield; Swansea Hospital, Secretary of; St Mary's Hospital, Manchester, Secretary of; Dr. Chearnley Smith, Worcester Park; Smith's Advertising Agency, Liverpool; Messrs. Samuel and Co., Lond.; Messrs. Savory and Moore, Lond.; Sheffield University, Secretary of; Dr. T. D. Savill, Lond.; Springfield House Bedford, Medical Superintendent of; St Andrew's Hospital, Northampton, Secretary of; Mr. J. Sampson, York; Mr. Scott, Lond.; Messrs Spiers and Pond, Lond.; Messrs. Shroff and Co., Lond.; St. Peter's Hospital, Lond., Secretary of.

**T.**—Mr. P. Templeton, Swanage; Mr. J. L. Toft, Pontypool.

**W.** Mr. W. J. Woodburn, Chopwell; Wye House, Buxton, Medical Superintendent of; W A. W.; W. H. P., The Warneford, Oxford, Secretary of; West Bromwich District Hospital, Secretary of; West-Kent General Hospital, Maidstone; Mr. P. Wood, Crawley; West Riding Asylum, Menston, Clerk of; West Suffolk General Hospital, Bury St. Edmunds, Secretary of; Dr. W. H. O. Woods, Aldermaston.

---

**EVERY FRIDAY.**

# THE LANCET.

**PRICE SEVENPENCE.**

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | | | TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 | One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 16 | 3 | Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 2 | Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | | | |
|---|---|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 | 5 | 0 |
| Official and General Announcements | Ditto | 0 | 5 | 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 | 4 | 6 |
| | Every additional Line | 0 | 0 | 6 |

Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.

# Three Clinical Lectures
ON
# GENERAL SURGICAL ANÆSTHESIA.

*Delivered at the London Hospital,*

By FREDERIC W. HEWITT, M.V.O., M.A., M.D. CANTAB.,
EMERITUS LECTURER ON ANÆSTHETICS.

## LECTURE III.[1]

*Delivered on June 28th, 1907.*

### CERTAIN INTERESTING SIDE ISSUES IN ANÆSTHETISATION.

GENTLEMEN,—I propose to conclude this short course of lectures by referring to certain interesting points connected with general anæsthesia.

### *A Note on the Inhalation of Nitrogen.*

Several years ago, at the instigation of the late Sir George Johnson, I administered practically pure nitrogen and nitrogen with small proportions of oxygen up to 7 per cent. to several patients at the Royal Dental Hospital. Sir George Johnson believed that pure nitrous oxide produced its anæsthetic effects simply and solely by oxygen-exclusion and in order to prove this thesis he asked Mr. Woodhouse Braine and myself to conduct a number of administrations in order that he might compare the effects of the two gases. The results we obtained are elsewhere described in detail. I need only here say that the clinical phenomena produced by pure nitrogen were remarkably similar to those produced by pure nitrous oxide. Since conducting these administrations I have often regretted that I did not myself inhale some of the practically pure nitrogen which with some difficulty Sir George Johnson had obtained. You are doubtless aware that Snow, the great pioneer in the physiology of general anæsthesia, believed that all volatile narcotics acted in the same way, producing their effects (to quote his biographer the late Sir B. W. Richardson) by "arresting or limiting those combinations between the oxygen of the arterial blood and the tissues of the body, which are essential to sensation, volition, and all the animal functions." Like more recent observers, Snow had probably been struck by the remarkable similarity in the subjective sensations produced by the inhalation of different anæsthetics. The sensations which one experiences, for example, when inhaling nitrous oxide are remarkably similar to, and under certain conditions identical with, those felt when inhaling the diluted vapour of chloroform, ether, or ethyl chloride. Now it seemed to me that if the initial sensations under pure nitrogen could be shown to be of the same type as those which characterise the inhalation of the recognised anæsthetics considerable support would be given to Snow's theory. In other words, if, during the stage which immediately precedes loss of consciousness pure nitrogen produces that peculiar rhythmic "thrilling" or sensory disturbance which is experienced with all the usual anæsthetics, are we not justified in inferring that the action of these anæsthetics, whatever that action may be, is of the same nature as that of nitrogen? If so, nitrous oxide, ether, chloroform, &c., must act, as Snow believed, by limiting or arresting normal oxidation processes, for we cannot ascribe to nitrogen, which is undoubtedly an anæsthetic, any definite or specific actions.

Quite recently, through the kindness of my friend, Dr. B. J. Collingwood, demonstrator of physiology at St. Mary's Hospital, I have been furnished with some nitrogen containing only 0·75 per cent. of oxygen—i.e., practically pure—and I have been able to satisfy myself by inhaling this gas that the initial sensations are of the same type or character as those met with when inhaling nitrous oxide or weak atmospheres of ether, chloroform, or ethyl chloride. I may add that my friend, Mr. H. Bellamy Gardner, also inhaled some of this practically pure nitrogen and entirely agrees with me upon this point. It is obvious that we have only oxygen deprivation to reckon with when we inhale nitrogen by means of an apparatus with accurately working valves, so that all expirations escape. This form of inhalation simply means a rapidly progressive diminution in the normal oxygen supply—a state of anoxæmia.

As regards carbonic acid it is practically certain that the diminished oxygen intake leads to diminished carbonic acid production, and that this last-named gas is in no sense locked up in the circulation, for, although diminished in quantity, it can still escape from the blood with other expired gases. But however this may be, the interesting fact remains that the peculiar, pleasurable, and indescribable "thrilling" or vibration which is experienced under most anæsthetics is also met with under nitrogen, thereby strongly supporting Snow's contention that anæsthetics act by interfering with normal oxygenation in nervous and other tissues.

### *The Advantages and Disadvantages of the Trendelenburg Posture.*

I referred in the last lecture to the remarkable fact that when the patient is lying in the feet-up position, or when he is placed in the Trendelenburg posture, intra-abdominal operations may be conducted during deep chloroform anæsthesia with little or no risk of acute circulatory shock. Although I have anæsthetised a large number of patients in the Trendelenburg posture for operations such as hysterectomy which, in horizontally placed patients under chloroform is often attended by marked circulatory shock, I have never witnessed, with this posture, anything more than comparatively temporary disturbances of cardiac action. As a general rule, indeed, patients thus placed preserve a good pulse, colour, and respiration, even though they may be deeply under chloroform, the feet-up posture preventing that accumulation of blood within the splanchnic area which always takes place, to a certain extent, during deep chloroform anæsthesia in the horizontal posture. The heart and lungs being better supplied with blood are able to preserve a fuller arterial system—i.e., a higher blood pressure—than when the patient is horizontal. This higher blood pressure not only counteracts any cardio-inhibitory effects which may arise from surgical causes, but by keeping the respiratory centres well supplied with blood it maintains a high standard of respiratory action. The better arterial pressure produced by the feet-up posture has been demonstrated experimentally by Leonard Hill, and it is this increased pressure which distinguishes the deeply chloroformed patient in this posture from the similarly deeply chloroformed patient in the horizontal posture. We can thus understand how the feet-up posture helps to prevent circulatory shock, chiefly if not wholly of vaso-motor origin, for it is obvious that a surgical injury capable of producing a certain fall of blood pressure from an effect upon the vaso-motor centres would produce a much more marked effect if the patient's blood pressure were at the time low, as it would be in the horizontal posture, than if it were higher, in the feet-up posture. It would seem, then, that the Trendelenburg posture tends to prevent circulatory shock, whether cardio-inhibitory or vaso-motor in type. Sometimes, as I have mentioned to you, one may notice certain cardio-inhibitory phenomena in patients placed in this posture, but they do not, as a rule, assume serious proportions. There are, of course, many operations likely to produce circulatory shock which cannot be performed in the Trendelenburg posture, but I cannot help thinking that when chloroform is to be employed surgeons would do well to adopt this posture whenever practicable. There is little or no point in the procedure when ether is the selected anæsthetic, because with this agent arterial pressure is little if at all affected. Nor is there much point in the Trendelenburg posture when only moderate chloroform anæsthesia is required. It is principally indicated when the deepest form of chloroform anæsthesia is needed and the patient is to undergo an operation liable to be attended by circulatory shock.

It is generally believed that difficulties occurring in the feet-up posture are referable to the abdominal contents pressing unduly upon the diaphragm but I believe this to be an erroneous view. That respiratory difficulties are not uncommon in patients thus placed may be freely admitted, but these difficulties, which are always most pronounced in plethoric, thick-necked, or obese subjects, are, I submit, dependent upon venous engorgement of the tongue and adjacent parts. I have often known stertor to be at once evoked by placing the patient in the Trendelenburg posture without altering the relations between the head and trunk; and I have often had to maintain tongue traction and to adopt other measures for keeping the upper air passages satisfactorily open. It is important that the head should not be flexed upon the trunk; in other words, it should remain in its natural relation to the body, otherwise respiratory difficulties may be considerable. Provided, however, that the airway be kept absolutely free respiration will generally proceed quite satisfactorily.

---

[1] Lectures I. and II. were published in THE LANCET of July 20th (p. 139) and 27th (p. 212), 1907, respectively.

Patients with any pre-existing respiratory affection should not, as a rule, be placed in the Trendelenburg posture and should it be found impossible to avoid cyanosis in this posture it should certainly not be maintained for any prolonged period. It is also questionable whether etherisation by means of a "close" inhaler should be maintained for any considerable time in the Trendelenburg posture.

### *A Case of "Early Syncope" under the A.C.E. Mixture, with Remarks.*

Any observations likely to throw light upon the etiology of so-called early syncope are to be welcomed by all who are interested in the clinical aspects of general anæsthesia, and I therefore venture to publish the following case which occurred in the practice of a highly qualified medical man who has had a large experience in administering anæsthetics.

The patient was a female child, aged four years, healthy, bright, and well nourished in appearance, and free from all nervousness or fear. As subsequent events proved she had slight "adenoids." No visceral abnormalities were detected. General anæsthesia was required for opening a small superficial abscess of the neck. The following are the notes of the administrator:—

I started with chloroform and used a towel pinned up into an inhaler. The chloroform was continued for between two and three minutes. I noticed that the breathing was rather light, but it improved when I started the A.C.E. This was given for about two minutes and immediately after the head was raised she retched and turned rather pale, and at the same time, or perhaps a little afterwards, the breathing became more shallow. Within half a minute the breathing ceased and I could not feel her pulse. The legs were raised and I pulled her tongue forward rhythmically. Within 20 or 30 seconds she recommenced to breathe, whilst the colour still remained bad and no pulse could be felt. She did not at first breathe automatically but only each time the tongue was pulled forward. Her lips were rubbed and she had liq. strych. m. ½ hypodermically. The pulse was perceptible in, I should say, about one and a half minutes after the cessation of breathing.

The operation was not performed. There was a good deal of vomiting, with some prostration during the 24 hours after the administration. A week or two later I was asked to anæsthetise this patient, and having been furnished with details of what had occurred I proceeded as follows:—

Chloroform was dropped upon a Skinner's mask whilst the child counted up to 30. The C.E. mixture was then substituted. In from two to three minutes from the commencement the child was pale, the breathing shallow, the pulse small but palpable, and the corneal reflex present. An ether inhaler was now applied and the pulse and breathing immediately improved. In two minutes the operation was begun. There was no reflex movement. Ether was continued for two or three minutes when the operation terminated. The fauces were then stimulated by the finger and two or three ounces of stomach mucus were ejected. Some post-nasal adenoid growths were now removed by scraping. There was no further difficulty. Vomiting occurred fairly frequently till next day, but there was no depression such as that which had occurred in association with vomiting after the previous administration.

The first question which presents itself in considering this interesting case is: What was the nature of the peculiar state of respiratory and circulatory depression into which this patient passed on both occasions whilst inhaling a chloroform and ether mixture, and before true anæsthesia had become established? It is not uncommon to meet with symptoms of this kind, particularly in children, during chloroformisation. Whatever the condition may be, it seems to be one in which, for some reason or another, the arterial system is comparatively empty; and from the fact that raising the feet and lowering the head prevents, or successfully remedies, the pallor and pulse feebleness, it is probable that the distribution of blood is very similar to that which obtains in circulatory shock; in other words, that the venous system and particularly the splanchnic area is comparatively full. Have we here some peculiar vaso-motor effect causing an early and abnormal fall in blood pressure? Or is the state one of reflex cardiac inhibition, brought about by the impact of the anæsthetic vapour upon the sensory nerve endings of the respiratory tract? There is good evidence that chloroform vapour may thus produce cardio-inhibitory effects; but the researches of Embley and others indicate that inhibition of this sort is rarely, if ever, dangerous to life. Is the condition in some way connected with the act of vomiting? It is certain that when food or swallowed mucus is present in the stomach chloroform often produces eccentric phenomena such as those under consideration, and that such phenomena vanish when vomiting has taken place. I fear that our knowledge is at present insufficient to enable us to state positively what is the nature of these early manifestations. It is interesting that they do not occur under nitrous oxide or under ether. It is also interesting that they may be made to vanish in more ways than one, as I shall presently explain. But what the precise nature of the phenomena may be I fear we are not in a position to define.

The second question before us is: What treatment should be adopted? This question is comparatively easy to answer. There is little doubt, I think, that the application of an ether inhaler is indicated when such symptoms arise. I have never known this treatment fail to restore the colour, pulse, and respiration. Opening the mouth, stimulating the fauces, and inducing retching will also answer well, for the straining movements thus induced tend to empty the veins and particularly the splanchnic vessels, and thus to fill the arterial system. As already mentioned, partial or complete inversion will also prove successful. Of all these measures, however, a change from chloroform to ether gives the best results and the ether seems to answer most satisfactorily when administered by means of a "close" inhaler.

The third question to be considered is: Does this peculiar state of depression ever terminate fatally, and if so, in what way does the fatal issue come about? It is in the highest degree probable that this early syncopal state is not of itself dangerous, but that unless properly treated it may readily become so. If, for the sake of argument, we admit that the condition is principally referable to cardiac inhibition there is little or no likelihood of this inhibition proving fatal *per se* so long as the anæsthesia is but light, for it is necessary, as Embley has shown, for the heart to be itself damaged by deep anæsthesia for the inhibitory effect to prove dangerous. Nor is there any definite evidence that the circulatory disturbance incidental to vomiting is dangerous *per se*. The condition, whatever its nature may be, is probably only likely to threaten life if some other condition—e.g., slight asphyxia from one of the many causes capable of inducing asphyxia—be superadded to the syncopal state. In the case under consideration it is quite possible that the act of retching, coming about as it did during circulatory depression, rendered that depression acute by adding to it a slight asphyxial factor. I have certainly seen several cases which tend to support this explanation. At the same time one must not be too positive of its correctness.

### *A Case of Intercurrent Asphyxia during the Anæsthetisation of a Patient in whom Excision of the Tongue had been Performed.*

The following case, which is unique in my experience, occurred in my practice a few months ago, and although it may never perhaps fall to your lot to administer an anæsthetic under precisely similar circumstances, the case is, I think, worthy of record.

The patient was a man, 43 years of age, of spare build. He was not nervous. There was a history of syphilis. About a year before the administration now to be described he had developed epithelioma of the tongue and cervical glands; and he had recently undergone two operations with an interval of some weeks, one for the removal of the glands and the other for excision of the tongue and floor of the mouth. He made an excellent recovery from both these operations. The epiglottis had not been removed as it was found to be unaffected. Since the excision of the tongue the patient had been troubled by mucus and saliva collecting in the mouth—a common occurrence after such operations. At the time of my administration there was still an unhealed area within the mouth causing some discharge. Three or four roots of teeth were to be removed, and the anæsthetic chosen was nitrous oxide mixed with oxygen.

A prop having been inserted I administered nitrous oxide and oxygen by the usual method, the patient sitting in a chair. The mixed gases were breathed freely. There was no excitement or movement. In from 30 to 40 seconds from the commencement of inhalation a curious inspiratory sound, stridulous (i.e., laryngeal) in type, became audible. It was a sound that I do not remember to have heard before under nitrous oxide or nitrous oxide and oxygen, although it is not uncommon under other anæsthetics. It was not a loud sound; in fact, I should probably not have heard it had the room been noisy. It lasted for from five to ten seconds, at the end of which time respiration abruptly ceased. The colour and pulse being good, and thinking that the arrest of breathing would be but temporary, I did not remove the face-piece. Two or three seconds later, however, the breathing still being in abeyance, I thought it best to withdraw the anæsthetic and allow the operation to begin. Temporary suspension of breathing is not uncommon under nitrous oxide or nitrous oxide and oxygen and is generally dependent upon deglutition movements. There had been no asphyxial phenomena up to this point—no stertor, lividity, jactitation, or separation of the eyelids. The commencement of the operation did not, as it sometimes does, re-establish breathing, nor did it cause any reflex movement. So great was my confidence in the safety of the anæsthetic that I permitted the operation, which was quite a short one, to be completed. Respiration had now been suspended for (?) 20 to 25 seconds and the patient was beginning to show signs of asphyxia. I passed my finger to the back of the throat and to the laryngeal orifice without causing any respiratory response. Pressure upon the chest walls effected only an imperfect expulsion of air and little or no entry of air took place from elastic recoil. With the help of the operator, whose assistance was of the greatest possible value, the patient was rapidly placed upon the floor in the lateral posture. Chest compression was now followed by slight improvement. The improvement, however, was of short duration and it was obvious from the open eyes, the dilated pupils, and the cyanosis of the patient that a state of acute asphyxia was present. Accordingly I sponged out the fauces and commenced artificial respiration by Silvester's method. At first there was little, if any, air entry, and I thought it would be necessary to perform laryngotomy. Fortunately, however, in about one and a half or two minutes from the commencement of the asphyxial symptoms air began to enter the lungs freely and recovery quickly ensued. The patient was replaced in the chair. There was no after-depression of any kind. Recovery of consciousness took place in much the same way that it would have taken place had no intercurrent asphyxia arisen.

There can be no doubt, I think, that this was a case of intercurrent asphyxia due to the entry into the larynx during anæsthesia of a quantity of viscid mucus and saliva which, owing to the local conditions present, could not be swallowed. The act of deglutition—one of nature's two safeguards against laryngeal invasion—is not, as a rule, annulled by nitrous oxide, but if, as in the above case, this act be physically impossible, it would seem that a collection of fluid within the oral cavity may, in the sitting posture, enter the larynx and set up spasm. The same is probably true of the semi-recumbent and horizontal postures. It is curious that no cough was excited by the passage of the fluid into the larynx. As a general rule, coughing, nature's other safeguard against laryngeal invasion, is not annulled by nitrous oxide and is excited, even at the height of anæsthesia, by the entry of fluid into the larynx. It is probable, however, that in this patient, as in certain others that one anæsthetises for throat operations, the larynx was unusually insensitive. It is easy to be wise after the event and the lesson to be learnt from this interesting case is that in patients troubled with excessive mucous and salivary secretion, in whom deglutition is difficult, general anæsthesia should be induced in the lateral posture in order that the fluids in question may not enter the larynx. With the experience of the above case before me I am inclined to think, too, that it would have been better to have selected the C.E. mixture as the anæsthetic and to have administered it to a moderate degree of anæsthesia whilst the patient was lying as suggested. By this plan the buccal secretions would have collected in the dependent cheek and the anæsthesia would have been of such a character that it would have allowed of the insertion of a gag and of frequent sponging during the operation. Let me say, however, that the case I have described in no way invalidates the assertion that nitrous oxide when administered with a proper proportion of oxygen is the safest known anæsthetic. The asphyxial complication met with was neither due to the anæsthetic selected nor to the method of administration employed. It was, in fact, chiefly, if not wholly, caused by the posture in which the administration was conducted.

---

VACCINATION FEES.—The Cardiff board of guardians, at its meeting held on July 27th decided to reduce the fees for vaccination in Cardiff from 5*s.* to 2*s.* 6*d.* and in the country districts from 6*s.* to 3*s.* 6*d.*—The Bodmin board of guardians at its meeting held on July 27th decided to reduce the vaccination fees. The minimum charge will be 3*s.* 6*d.*, instead of 5*s.*, in cases within one mile radius, and beyond that distance in some instances the fees are reduced from 8*s.* to 5*s.* 6*d.*, and in others from 9*s.* to 6*s.* 6*d.*

LADY HEALTH VISITOR AT BATH.—In June last the corporation of Bath authorised the medical officer of health (Dr. W. H. Symons) to employ a lady health visitor for a few hours daily. Since the date of her appointment she has done good work in visiting the households of newly born children and in inquiring into the conditions of employment of married outworkers. When the question of continuing the services of this health visitor was being discussed at the last meeting of the corporation it is to be regretted that one member asked the council to pause before making the post a permanent one, for the lady appointed, he declared, was to go from house to house to harass the poor. This view was fortunately not held by the majority of the members of the council and the health visitor will still carry out her duties.

# The Harben Lectures
ON
# EXPERIMENTAL RESEARCHES ON SPECIFIC THERAPEUTICS.

*Delivered at 20, Hanover-square, London, under the auspices of the Royal Institute of Public Health,*

BY PROFESSOR PAUL EHRLICH, M.D.,

DIRECTOR OF THE KÖNIGLICHES INSTITUT FÜR EXPERIMENTELLE THERAPIE, FRANKFORT.

## LECTURE III.[1]

*Delivered on June 11th.*

### CHEMOTHERAPEUTIC STUDIES ON TRYPANOSOMES.

GENTLEMEN,—The substances which have hitherto proved efficient in combating trypanosomic infections can be divided into three groups—viz., (1) the group of the basic triphenyl-methane dyes, (2) the group of the benzidine dyes, and (3) the group of the arsenicals, with (4) salts of mercury, as adjuvantia.

Among the triphenyl-methane stains, which were first employed by Wendelstadt, parafuchsin is by far the most satisfactory. It is possible by prophylactic feeding with this drug to render mice for a long time resistant to trypanosomic infections, and I believe that this innocent substance might well be employed in the tropics for the prophylaxis of human sleeping sickness.

As regards the second type of remedies belonging to the benzidine group, trypan-red is a cotton dye which shows the remarkable feature of staining mice an intense red which remains fast for months. I have also prepared a number of similar dyes belonging to the benzidine series, some of which possess an even more powerful action than trypan-red. In several cases a blue dye belonging to the same group, which was prepared by Nicolle and Mesnil, has proved still more efficient.

The value of the arsenical substances which have for a long time been employed in the treatment of trypanosomic diseases was first recognised by Laveran. Later, it was discovered at the Liverpool School of Tropical Medicine that atoxyl was a far more powerful substance. It is prepared by treating aniline with arsenic acid. The makers believe it to be an anilide of arsenic acid—i.e., a compound in which the arsenic acid radicle is supposed to be attached to the amido group in a similar manner as the acetic acid is present in acetanilide. Now, as you all know, the ammonia radicle, which in aniline is very ready to react, has completely lost this property in acetanilide. This latter body is, in fact, almost an indifferent compound. Similarly, by the view that atoxyl was the anilide of arsenic acid, any further development of this compound was rendered impossible. I was, however, able to prove, together with Dr. Bertheim, that this compound is to be regarded as something entirely different—namely, that the amido group is quite free and that the arsenic acid radicle is attached to the benzol ring in the para position. Atoxyl must, therefore, be regarded as the sodium salt of paramido-phenyl-arsenic acid. We have obtained a great number of substances derived from it and have tested them therapeutically.

Thus we found that by the introduction of the acetyl radicle into the amido group the acetyl-amido-phenyl-arsenic acid is produced which is far less toxic for mice than atoxyl. By means of this substance it is even possible to solve one of the most difficult therapeutic problems imaginable. For mice that have been infected with our most virulent strains and which, failing treatment, would die within three days, can in two-thirds of the cases be saved by this remedy if it is given 12 to 14 hours before death occurs in the control animals. Such curative results have never yet been published. For in previous communications there were mentioned almost exclusively experiments carried out at earlier periods of infection. In such cases acetyl-atoxyl cures mice in nearly 100 per cent. Unfortunately it is decomposed in other animals, especially in the horse, into acetic acid and aniline, and it cannot therefore be anything like so effective as it is in the mouse. Nevertheless, these results obtained in the mouse are so excellent that they must encourage us energetically to pursue the path of these discoveries.

---

[1] Lectures I. and II. were published in THE LANCET of June 15th (p. 1634) and July 6th (p. 9), 1907, respectively.

I had mentioned in my last lecture that it is possible to obtain strains of trypanosomes which are resistant to these active substances. These studies, which I carried out together with Dr. Röhl and Dr. Browning, have shown this resistance to be of a very high degree. Thus atoxyl-fast strains show no sign of being influenced by the highest doses applicable to mice. I gave you the explanation for this resistance—viz., that it is the result of a decrease in the avidity of the trypanosomes for the substances in question. Further, I showed you that, apart from this resistance, the parasites' protoplasm, though not their nuclei, had become hypersensitive towards the arsenical preparation. Thus we here meet with an important instance of association in one and the same cell of resistance and hypersensitivity. This association, which is of late years proving to be of increasing importance in the question of mammalian immunity, is therefore present even in so simple an organism as that of the protozoon.

Although in the mouse atoxyl-resistance usually occurs only after a fairly long interval I have occasionally seen it already after a fortnight. This observation is very important, because it makes it possible that the negative results observed by Ayres, Kopke, Broden, and Rodein van Campenhouh in cases of sleeping sickness that had received a long-continued treatment may also be due to such a resistance.

As against atoxyl, trypanosomes can also be rendered resistant against parafuchsin, trypan-red, and trypan-blue. Further, it was shown in my institute by Franke that it is even possible for trypanosomes to become resistant against those protective substances which are formed after the recovery of the host from a trypanosomic infection. A similar discovery has recently been made by Levaditi in the spirochætæ of relapsing fever. This is therefore a general law, and it is especially important because this change in the trypanosomes, having once become acquired, remains a hereditary property. Thus I have cultivated for 125 generations my atoxyl-fast race, without finding any decrease in its powers of resistance. We must, further, note that every such resistance is specific. Thus the fuchsin-fast races are resistant only towards this body, but not towards atoxyl and trypan-red, and *vice versâ*. This resistance extends, however, to chemically different substances of the same group, so that we can in any individual case decide to which group a given new trypanocidal remedy belongs. Thus, for example, the atoxyl-fast race is resistant also against a number of related substances. From among any hundred trypanocidal bodies it is thus possible to single out those substances which contain arsenic.

It has further been shown that the resistance against trypan-red and trypan-blue is a mutual one in spite of the considerable chemical differences between these two substances, which, in fact, have nothing in common with one another except that they contain naphthalin rings which are substituted in a certain position (3, 6) by sulphuric acid radicles.

Thus we possess in the specific resistance, so to speak, a therapeutic sieve, a "cribrum therapeuticum" with which we can undertake the classification of any new remedy of this kind. If such a remedy is found to destroy all three of our resistant races it needs must belong to a fourth group. One can, of course, materially simplify this examination by employing races that have been rendered resistant against all the groups hitherto known. Thus I have, together with Dr. Browning, obtained such a race which is resistant against atoxyl, trypan-red, and fuchsin. By using such a race, a single animal experiment suffices for the purpose of establishing any new group of remedies. For, if one injects the substance in question to such a trebly resistant mouse the trypanosomes will either go on proliferating—then the substance must belong to one of the three known groups—or the trypanosomes are injured; in that case we have before us a new type. As you see, we are therefore enabled by means of these resistant races to separate substances of different mode of action from one another and thus to solve a problem which hitherto could not even be asked. A way is thus shown us, by which we may enter into the finest mechanism of pharmaco-dynamics and, if I may say so, obtain a fuller knowledge "de sedibus et causis pharmacorum."

On this occasion I wish to lay special stress upon my view that the medicaments are also attracted to, and bound by, certain atom groupings of the protoplasm molecule. I am inclined to look upon this as somewhat analogous to the binding of the toxins and of similar proteid bodies. Yet, on the other hand, there are fundamental differences between the two. For, as I have always insisted in my former publications, the mode of binding the toxins is peculiar in so far as it is the result of a certain kind of assimilation which obviously consists in processes of a more or less synthetic nature. These toxin-receptors which produce immunity are bodies of a more independent character, and appear to be especially destined for the purpose of assimilation. This high degree of independence is evidenced by the fact that, in conformity with my side-chain theory, these receptors are very easily reproduced by the cell in excessive number and after being separated from it find their way into the blood.

I have now come to hold the opinion that also a part of the chemically defined substances is attached to the cell by groups corresponding to these receptors; these atom groupings I will distinguish from the toxin receptors by the name of "chemio-receptors." This view is more especially supported by the fact that, as I stated before, the atoxyl-fast race is also resistant against a number of substances related to atoxyl, but otherwise showing widely different chemical characteristics. Evidently, therefore, it is here the arsenic acid radicle which represents the point of attack common to this series of substances. It is the arsenical radicle as such which is bound by the chemio-receptors. These chemio-receptors must, however, be regarded as of a simpler structure than the toxin receptors. They do not show a similar degree of independence; they cannot, therefore, become increased in chronic intoxications, and since they are sessile cannot be thrown off into the blood. The number of such chemio-receptors which a trypanosomic cell possesses for poisons represents the number of points of attack. By means of the resistant races we can count off one by one these groups that are open to attack.

The discovery of any trypanocidal substance will always be the result of chance and trial. Every point of attack may, of course, be liable to attack by a host of different bodies, all of which have one specific group in common. It must be the goal of our experiments to seek out, by systematic chemical researches, the most suitable substances and thus to discover the "optimum centres." This problem is by no means an easy one, since, according to my experience of many years, which agrees entirely with that of Mesnil, different animal species have different such optima, and since, therefore, the work must be specially done for each species of animal and each kind of trypanosome. Thus, for example, in the mouse, Trypanosoma Gambiense is far more easily attacked by arsenical preparations than the other races of animal pathogenic trypanosomes, whilst fuchsin and its relatives show an exactly opposite action. Still, after all, this problem is not insoluble, since there is only a limited number of animal species and of trypanosomes; we may, therefore, cherish the hope that the united forces of the men who are at work on this subject in various laboratories will succeed in attaining that practically most important end, the victory over sleeping sickness.

Especially with a view to practical therapeutics the knowledge of the different points of attack is important, since it furnishes us with the possibility of fighting the disease by combined several remedies. The principle of this combinatory method of therapeutics is to attack the enemy simultaneously from two or three sides, and thus to produce a completely successful result by combining several different substances, each of which alone does not show a sufficient effect. Thus it has been found by Laveran and by Franke that certain infections which are influenced neither by trypan-red nor by atoxyl alone can be cured if these two substances are used in combination. I, too, have in course of time repeatedly met with similar cases and am convinced that substances which by themselves are not very efficient may yet produce good results if they are used as supplements to more powerful, though not completely curative, bodies. Supposing, for example, a highly trypanocidal remedy to kill 98 among 100 parasites, its administration would be followed by an instantaneous improvement but not a definite cure, since the two surviving trypanosomes must in course of time produce a relapse. But if one combines this powerful remedy with another one which, even though much weaker, yet suffices to kill just those two surviving but already weakened parasites, then such a combination would serve to bring about an otherwise unattainable cure. In this respect a publication from the Liverpool School of Tropical Medicine is most interesting as it demonstrates the successful result of the employment of supplementary doses of perchloride of mercury in the atoxyl treatment of animals infected with sleeping sickness.[2]

For man the combinatory treatment is of the greatest importance for a further reason. The complete sterilisation of the body—i.e., the total destruction of every parasite—is often only to be accomplished by the administration of doses which come very close to the lethal dose. Such a procedure directly endangering life may be permissible in the animal experiment, but never in man. One is, however, justified in hoping that it might be possible to cure the disease without endangering life by the simultaneous administration of three, four, or five substances, chosen in such a manner that their actions are concentrated on the parasites, whilst in the organism of the vertebrate host they are distributed over several different organs.

# BODILY POSTURE AND CARDIAC PHYSICAL SIGNS.

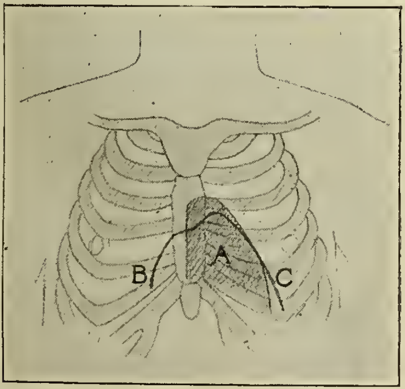
By WILLIAM GORDON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL AND TO THE WEST OF ENGLAND EYE INFIRMARY.

THE influence of bodily posture on cardiac physical signs is almost universally ignored. Only in the rarest instances is the record of a cardiac condition accompanied by a statement of the patient's posture at the time of observation. I propose to show that no description of the cardiac physical signs can be regarded as complete which does not include such a statement.

### *The Effect of Posture on the Normal Heart Dulness.*

In this and in the succeeding divisions of my paper I shall only deal with the two commonest postures in which the chest is examined—the erect (sitting or standing) and the recumbent. When the recumbent position is exchanged for the erect the normal cardiac dulness generally falls and widens. The fall is not constant, being sometimes absent and sometimes replaced by a rise, but the widening is nearly invariable and is often considerable. Table I. gives the records of 36 unselected cases with normal hearts. In these it will be seen that the average fall of dulness when it occurred was rather greater than a rib's breadth and that the average widening was a little more than three-quarters of an inch. The change in the shape of the dulness is illustrated in Fig. 1.

FIG. 1.



Normal heart dulness. The shaded area A = the dulness in the recumbent position. The line B C = the outline of the dulness in the erect position.

### *The Effect of Posture on the Normal Heart Sounds at the Apex.*

The same change of position also changes the character of the normal heart sounds, as they are heard over the apex of the heart. In the erect position the first sound is usually sharper, and the second sound duller, than in the recumbent position, so that the two sounds become much more like each other in the erect position than they are in the recumbent. The "lub dup" of the text-books is in most cases a fair description of the sounds of the apex only when the body is recumbent; "lup-lup" better describes them when the body is erect.

*Explanation of the changes in the normal dulness.*—The lowering of the cardiac dulness when the erect position is assumed appears to be due to an actual lowering of the heart. The occasional rise of dulness (replacing the commoner fall) may be caused by some peculiarity of the supports of the heart, whereby it is held up unusually firmly and in such a way that its upper part comes further forward in the erect position than is generally the case. The widening of the dulness is the result of a forward movement of the heart when the erect position is assumed. Its converse, the fall of the heart away from the anterior chest-wall on assuming recumbency, is well illustrated in a pair of radiograms recently published by Professor Rudolf and Dr. Cummings of Toronto.[1] So long ago as 1885 Mr. C. J. Bond of Leicester demonstrated this change in the position of the heart by means of an air tampon passed down the œsophagus.[2]

TABLE I.*—*Thirty-six Unselected Cases with Normal Hearts.*

| Sex. | Years of age. | In hospital for— | Changes on rising from recumbent to erect posture in— | | |
|---|---|---|---|---|---|
| | | | Width of dulness. | Height of dulness.† | Depth of chest.‡ |
| M. | 7 | Circumcision. | + ¾ inch. | − 1 rib, 1 space. | + ¼ inch. |
| F. | 7 | Accident. | + ¼ ,, | − 1 ,, 1 ,, | + ⅜ ,, |
| M. | 10 | ,, | + 1¼ ,, | − ½ ,, | + ¾ ,, |
| M. | 13 | ,, | + ¾ ,, | − 1 ,, 2 ,, | + ⅝ ,, |
| M. | 13 | Hypospadias. | + ¼ ,, | + 1 ,, | + ⅝ ,, |
| F. | 14 | Flat-foot. | No change. | No change. | + ⅜ ,, |
| M. | 15 | Accident. | + ⅜ inch. | − ⅛ inch. | No change. |
| M. | 15 | ,, | + 1 ,, | − 1 rib, 1 space. | + ⅞ inch. |
| F. | 16 | Housemaid's knee. | + ¾ ,, | − ½ ,, 1 ,, | + ⅞ ,, |
| F. | 16 | ? | + 1¼ ,, | − ½ ,, | + ½ ,, |
| F. | 16 | Lateral curvature. | + ⅜ ,, | No change. | + ½ ,, |
| M. | 17 | Accident. | + ⅝ ,, | ,, ,, | + ⅜ ,, |
| M. | 17 | ,, | + 1¼ ,, | − 1 rib. | + ¾ ,, |
| M. | 17 | Varicocele. | + 1 ,, | − 1 ,, | + ½ ,, |
| M. | 17 | Hammer-toe. | + ¾ ,, | − ½ ,, | + 1 ,, |
| M. | 18 | Hernia. | + 1 ,, | − 1 ,, | + ⅝ ,, |
| M. | 18 | Accident. | + ⅝ ,, | − ½ ,, | + 1 ,, |
| M. | 18 | Varicose veins. | + 1¼ ,, | No change. | + 1⅛ ,, |
| F. | 18 | ? | + 1 ,, | ,, ,, | + ½ ,, |
| F. | 19 | Synovitis, knee. | + ¾ ,, | − 1 rib, ½ space. | + ½ ,, |
| M. | 20 | Varicose veins. | + ¾ ,, | − 1 ,, | + ⅞ ,, |
| F. | 21 | Synovitis, knee. | + ¾ ,, | − ½ ,, | + ⅜ ,, |
| F. | 22 | Phlebitis. | + ¾ ,, | ? | + ⅞ ,, |
| F. | 23 | Hip disease. | + ¼ ,, | + ½ rib, 1 space. | + ¼ ,, |
| M. | 24 | Varicocele. | + ¼ ,, | + ½ ,, | + ¼ ,, |
| F. | 24 | Tuberculous glands. | + 1 ,, | − 1 ,, | + ⅝ ,, |
| F. | 26 | ? Appendicitis. | + 1 ,, | − 1 ,, 1 space. | + ½ ,, |
| M. | 29 | Perineal abscess. | + ½ ,, | No change. | + ¼ ,, |
| M. | 30 | Sebaceous cyst. | + 1 ,, | − 1 rib. | + ⅞ ,, |
| M. | 30 | ? Carcinoma, penis. | + ¾ ,, | − ½ ,, | + ½ ,, |
| M. | 31 | Varicose ulcer. | + 1 ,, | − ½ ,, 1 space. | No change. |
| M. | 33 | Tuberculous knee. | + ½ ,, | − 1 ,, 1 ,, | + 1 1/16 inch. |
| M. | 34 | Talipes. | + 1 ,, | − ½ ,, | + 1 ,, |
| F. | 35 | Ulcer of leg. | + 1⅛ ,, | − 1 ,, 1 space. | + ¾ ,, |
| F. | 36 | "Uterine." | + 1 ,, | ? | + ,, |
| M. | 43 | Tuberculous ankle. | + ½ ,, | − ⅛ inch. | + 1 ,, |

* From a paper on the Influence of Posture on the Normal Cardiac Sounds and on the Normal Cardiac Dulness, published in the Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix., 1906.

† I.e., nearness of upper limit of dulness to clavicle.

‡ I.e., antero-posterior diameter measured at nipple level.

+ Indicates nearer to clavicle.

− Means further from clavicle.

---

[2] The perchloride in these cases has only the effect of an adjuvant, since it has been shown that its action on the trypanosomes, if administered alone, is quite inadequate.

[1] R. D. Rudolf and S. Cummings: The Influence of Bodily Posture upon the Position of the Heart, Brit. Med. Jour., vol. ii., 1906, p. 1028.

[2] C. J. Bond: Brit. Med. Jour., Dec. 12th, 1885.

### *The Effect of Posture on Chest Depth.*

The change in the width of the dulness would probably be greater than it is were it not that on recumbency the sternum itself usually falis backward towards the spine. The decrease thus produced in the antero-posterior diameter of the chest varies considerably; in a rigid chest it may not occur at all; in a very elastic chest it may exceed an inch; in Table I. the average decrease amounted to nearly five-eighths of an inch. The measurements there recorded were made with a specially designed pair of callipers (Fig. 2) having one arm capable of slipping under a recumbent patient, the other arched to meet the front of the chest wall, and fitted with a hinge which could be fixed when the instrument had been adjusted before removing it for measurement. The measurements were taken at the nipple level. This change of chest depth, consequent on change of posture, is important because it helps to account for some of the coincident changes in the cardiac physical signs. (The changes in the cardiac sounds will be better dealt with when the changes in cardiac murmurs are presently under consideration.)

FIG. 2.

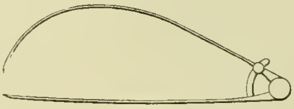
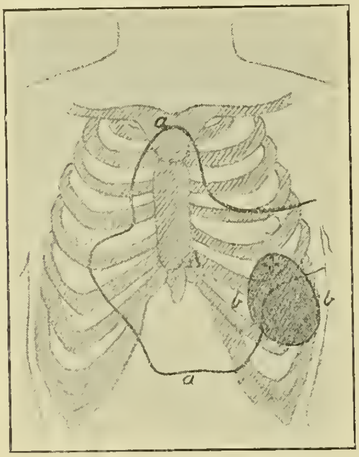
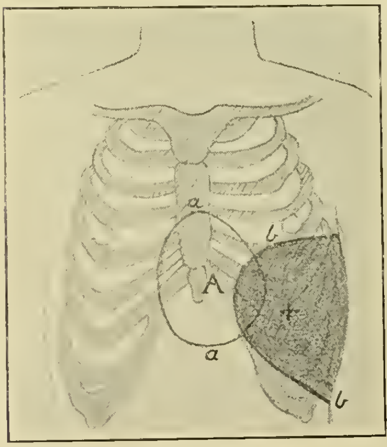


FIG. 3.



Recumbent position.

FIG. 3 A.



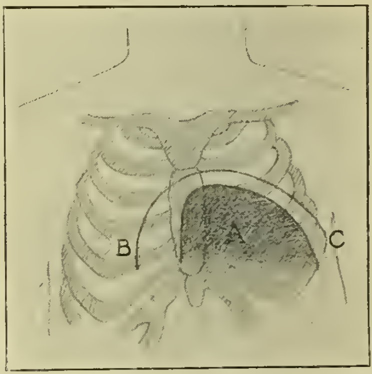
Erect position.

From a case of mitral stenosis. The outline *a a* = systolic murmur area. A = its point of maximum loudness. The shaded area *b b* = presystolic murmur area. + = position of apex beat.

### *The Effect of Posture on the Heart Dulness in Disease.*

The changes which accompany change of position in the cardiac physical signs in disease are often even more striking than those occurring in normal conditions. When the weight of the heart is increased, its fall in the chest, when the erect position is assumed, is sometimes made evident by the descent of the apex beat into a lower intercostal space as in Fig. 3, whilst the widening of its dulness is often very remarkable (Fig. 4). I have referred in a former paper[3] to a case of enlarged heart with mitral and aortic disease where the width of dulness was five inches in the recumbent position and increased to eight inches on assuming the erect position. This might be thought to have been an extreme instance, but Table II. shows that it was not so. This table gives the records of 11 unselected cases of enlarged hearts, in one of which the measurements were recorded before and after treatment. The dulness measured was in all cases the relative dulness. The importance of this relative dulness is sometimes under-estimated. It is, for clinical purposes, *the* important heart dulness (although, like other clinical signs, it should not be considered by itself), for the absolute cardiac dulness merely indicates the area uncovered by lung; as Dr. S. J. Gee says,[4] the relative dulness

FIG. 4.



From a case of hypertrophy and dilatation of the heart due to arterio-sclerosis. A, the shaded area represents the dulness in recumbency. B C = the outline of the dulness in the erect position.

TABLE II.—*11 Unselected cases with Enlarged Hearts.*

| Sex. | Years of age. | Cardiac disease. | Width of dulness. | | |
|---|---|---|---|---|---|
| | | | Recumbent. | Erect. | Difference. |
| F. | 19 | Perforate septum ventriculorum. | 4½ inches. | 6 inches. | 1½ inches. |
| F. | 31 | Mitral stenosis. | 4 ,, | 5¼ ,, | 1¼ ,, |
| F. | 39 | ,, ,, | 6½ ,, | 7 ,, | ½ ,, |
| M. | 46 | Aortic regurgitation. | 5 ,, | 7 ,, | 2 ,, |
| M. | 48 | Mitral regurgitation. | 5 ,, | 8 ,, | 3 ,, |
| M. | 49 | Dilatation (no murmur) | 6 ,, | 8½ ,, | 2½ ,, |
| F. | 50 | ,, (emphysema). | 5 ,, | 6 ,, | 1 ,, |
| M. | 53 | Hypertrophy and dilatation. | 5 ,, | 8¼ ,, | 3¼ ,, |
| M. | 60 | Hypertrophy and dilatation. | 6¾ ,, | 9½ ,, | 2¾ ,, |
| — | — | Same case after treatment. | 5¾ ,, | 6½ ,, | ¾ ,, |
| F. | 60 | Dilatation. | 5 ,, | 9 ,, | 4 ,, |
| F. | 64 | Hypertrophy and dilatation. | 7 ,, | 9 ,, | 2 ,, |

---

[3] The Influence of Posture on the Normal Cardiac Sounds and on the Normal Cardiac Dulness, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix., 1906.

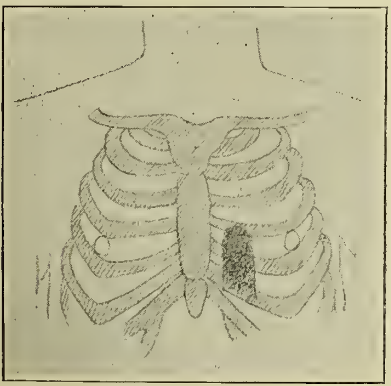
[4] Auscultation and Percussion, London, 1893, p. 79.

alone "is indicative of the size of the heart." Such remarkable changes in such an important physical sign might have been expected to have received considerable attention; if the case in Table II., of which two records are given, had been examined, before treatment, in the recumbent posture only and, after treatment, in the erect only the marked improvement attained would have been almost wholly overlooked; on the other hand, had the case been examined at first only erect and, after treatment, only recumbent, the apparent improvement would have been much in excess of reality. Yet, extraordinary as it seems, these changes have received no adequate notice. Dr. A. Morison is one of the few who have strongly directed attention to them. His diagram of the change in dulness in a case of chorea with apical systolic murmur[5] somewhat resembles Fig. 4. That the changes have entirely escaped the observation of writers who have not referred to them I do not venture to imagine.

### *The Effect of Recumbency on the Heart Dulness in Cancer.*

An extreme instance of the narrowing of the heart dulness on recumbency is furnished by certain cases of cancer in which ordinary emphysema can be excluded. When this marked narrowing is observed it is a sign of some value in diagnosis. It is not to be found in all cancerous cases and it is sometimes present, though rarely I think, in patients suffering from non-cancerous disease. Cases of carcinoma of some part of the alimentary canal are those in which it most commonly occurs, especially in their later stages. In cases of sarcoma it seems not to occur.[6] To be of diagnostic value the area of dulness must be greatly reduced or actually obliterated. I have ventured to lay some stress on an area only three-quarters of an inch wide, with its upper limit about the level of the fourth rib and its rightward limit about an inch to the left of the middle line of the sternum, as in Fig. 5. This small dulness is often associated with a rather characteristic pulse—very small, very soft, almost toneless—and with feeble heart sounds. The rhythm and rate of the pulse may be normal and the artery may or may not be atheromatous.

FIG. 5.



Small heart dulness in the recumbent position in a case of gastric cancer.

*Explanation of this sign in cancer cases.*—No doubt the lessened or lost cardiac dulness of some cases of cancer is due partly to the marked wasting of the heart which is known to occur in association with carcinoma. But this cannot be the whole explanation, since one sometimes finds at the necropsy of a cancer case, in which the dulness was lost on recumbency, that the heart is of normal size. In such cases the heart is found enveloped in lung, the two lungs meeting over it in front as in emphysema. Yet sections made of the lung tissue in two such cases by my friends Mr. J. Miller and Dr. R. V. Solly of Exeter failed to show evidence of ordinary emphysema. I have provisionally ventured upon the following explanation. Just as in many cases of abdominal cancer there is a remarkable loss of elasticity in the skin of the abdomen, so possibly there may be a loss of elasticity in the tissue of the lung in virtue of which ordinary respiration gradually produces a sort of spurious emphysema, the lung edges advancing and diminishing the area of cardiac dulness. Certainly I have seen the cardiac dulness gradually grow less (in the recumbent posture) in a patient leading the quiet life of the hospital ward, who had a carcinoma of the cardiac end of the stomach verified by operation. Perhaps in the same way one might explain the peculiar tonelessness of the pulse in some of these cases as being due to diminished arterial elasticity.

### *The Effect of Posture on Heart Murmurs.*

In 1902, when I suggested an explanation of the effect of posture on heart murmurs,[7] very little consideration appeared to have been given to the subject. Current opinion was thus summed up by Dr. Gee[8]: "Some murmurs, which are audible whilst a patient is lying down, become much less loud, or even disappear, when he sits or stands. This is especially the case with mitral and tricuspid murmurs. The reason of this occurrence is not understood." The fact that posture affects murmurs is far from new. Dr. A. E. Sansom has described carefully in Professor T. Clifford Allbutt's "System of Medicine,"[9] the changes in "hæmic" murmurs; the changes in organic murmurs referred to by Dr. Gee have long been recognised; and Dr. G. W. Balfour[10] has pointed out that the murmur of the mitral stenosis is usually loudest in the erect position. What was perhaps new four years ago was the explanation offered and the observation made that the areas over which the murmurs were audible also changed with the change of position.

In investigating these changes there are certain sources of fallacy which require to be carefully avoided. *The influence of exertion* must be eliminated by getting the patient's posture changed for him by an assistant without effort on the patient's part. The *transitory effects of the change* of posture, if any, must be given time to pass off—a few pulse-beats generally suffice. To avoid *changes due to altered positions of the auditory apparatus* a straight wooden stethoscope should be used. "*Cardio-pulmonary*" *murmurs* are to be distinguished by their dependence on respiration, their limitation to areas lying over an edge of lung, and by their failure to follow the usual directions of conduction which characterise murmurs of intracardiac origin. In dealing with the changes in the murmurs I shall confine my remarks to the murmurs most commonly met with.[11]

"*Hæmic*" *murmurs.*—1. *In the pulmonary area.*—The systolic murmur over the pulmonary artery is often greatly increased on recumbency and sometimes a murmur may be heard in that position which is inaudible when the patient is erect. The area of its audibility also is often much extended on recumbency.

2. *At the apex.*—The same holds good.

3. *In the aortic area.*—Similar changes occur here also. In a former paper I have figured an aortic and a pulmonary murmur the areas of audibility of which were separate in the erect position but fused in the recumbent.

4. *Venous hum in the neck.*—Although this is not a cardiac murmur it is desirable to refer to it here. It is often only heard in the erect position, entirely vanishing when the patient lies down.

*Organic murmurs.*—1. *Mitral regurgitation.*—The influence of position is often pronounced in cases with recent systolic murmurs developed in the course of chorea or acute rheumatism. These murmurs are nearly always more evident and more widely heard when the patient is lying down. Posture nearly always, too, affects in the same way the regurgitant mitral murmurs of confirmed valvular disease and of dilated auriculo-ventricular orifice.

2. *Mitral stenosis.*—Here, however, the change which most commonly occurs is just the reverse of the foregoing. The presystolic murmur is generally louder and more widely heard when the patient sits up. One of the loudest mitral presystolic murmurs I have met with was scarcely audible when the patient was recumbent. Fig. 3 illustrates the opposite changes of area of audibility on change of position undergone by a presystolic and a systolic murmur in a case of mitral stenosis. Both were carefully mapped out. The systolic murmur appeared to be chiefly tricuspid.

3. *Tricuspid regurgitation.*—This murmur usually follows

---

[5] Cardiac Failure, London, 1897, p. 33.

[6] The Cardiac Dulness in Cases of Cancer, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvii., p. 327.

[7] Posture and Heart Murmurs, Brit. Med. Jour., 1902, vol. i., p. 638.

[8] Op. cit., p. 149.

[9] A System of Medicine, vol. v.

[10] Diseases of the Heart, London, 1895, p. 135.

[11] Figures illustrating these changes were given in the paper referred to on Posture and Heart Murmurs.

the same rule as that of mitral regurgitation but less constantly. I have figured a case in which it seemed little affected by posture, but in that case there was also adherent pericardium.

4. *Aortic regurgitation.*—Posture seems to have little effect on this murmur.

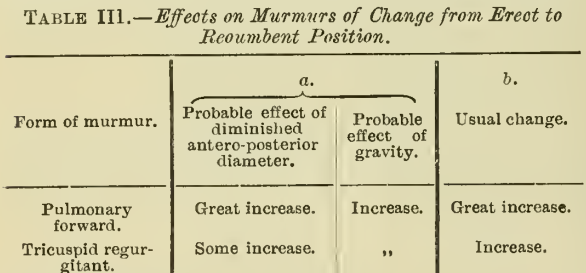
5. *Aortic stenosis.*—This murmur usually follows the same rule as the murmur of mitral regurgitation.

*Explanation of the changes in the murmurs.*—When looking for an explanation of the changes in the murmurs it occurred to me that, as most of the murmurs are increased on recumbency, perhaps the antero-posterior diameter of the chest might be less in that position. I found it was so. Then it seemed clear that this lessening of chest depth, by bringing the stethoscope relatively much nearer the pulmonary valves, relatively a good deal nearer the aortic valves, and relatively somewhat nearer the tricuspid and mitral valves, should greatly increase a murmur at the pulmonary valves, decidedly increase a murmur at the aortic valves, somewhat increase a murmur at the mitral valves, and somewhat increase a murmur at the tricuspid valves. But some further explanation was required, because all murmurs are not increased on recumbency and some are increased on recumbency although the antero-posterior diameter of the chest is unchanged. The action of gravity on the intra-cardiac currents then suggested itself as this further explanation. Professor Clifford Allbutt had pointed out that gravity seems to increase the venous hum in the neck in the erect position. A careful examination of the positions of the parts of the heart in the upright and recumbent positions appeared to indicate that gravity, when the recumbent position is assumed, should increase a mitral regurgitant murmur, increase a tricuspid regurgitant murmur, increase an aortic forward murmur, increase a pulmonary forward murmur, diminish a mitral forward murmur, and diminish an aortic regurgitant murmur. Now putting together the effects of gravity and variation in chest depth, Table III. shows: (*a*) what the combined influences of change in chest depth and changed relation to gravity might be expected to do; and (*b*) the changes in the murmurs which actually occur. It is interesting to note how closely *a* and *b* correspond. That gravity can considerably affect a fluid murmur is indicated by the following experiment. A round wide-mouthed bottle A (Fig. 6), 5 inches deep and 2½ inches wide, is fitted with a cork B, through which pass two glass tubes, C and D. D reaches to within 2 inches of the bottom of the bottle and is connected, outside the cork, by a short rubber tube E, with a rubber ball-syringe F. C ends just inside A and is connected outside by a long rubber tube G with the outflow pipe of a reservoir of water, so that when F has been emptied it can be refilled through A. The whole apparatus is filled with water, air-bubbles being excluded. If the bottom of A be placed against the ear and moderate pressure exerted by the hand on F a fluid murmur is heard. Let A be first held in Position 1 and let the pressure on F sufficient to produce a murmur be mentally noted. Then let A be held in Position 2 and the same pressure be applied to F. The murmur is louder and F is more easily and quickly emptied. *In both positions A must be held at the same level and just about that of the water in the reservoir, as a considerable counter-pressure of water in A naturally lessens the contrast between the observations in the two positions.*

TABLE III.—*Effects on Murmurs of Change from Erect to Recumbent Position.*

| Form of murmur. | a. | | b. |
|---|---|---|---|
| | Probable effect of diminished antero-posterior diameter. | Probable effect of gravity. | Usual change. |
| Pulmonary forward. | Great increase. | Increase. | Great increase. |
| Tricuspid regurgitant. | Some increase. | ,, | Increase. |
| Mitral regurgitant. | ,, ,, | ,, | ,, |
| Aortic forward. | Decided increase. | ,, | ,, |
| Aortic regurgitant. | ,, ,, | Decrease. | No change. |
| Mitral forward. | Some increase. | ,, | Decrease or no change. |

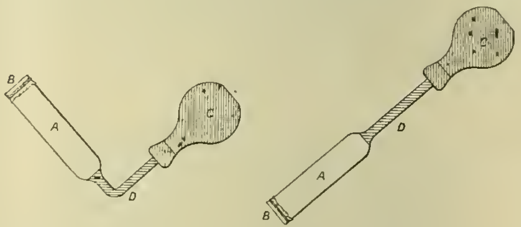
FIG. 6.



Position 1. Position 2.

*Explanation of the changes in the normal sounds at the heart's apex.*—As the influence of gravity helps to explain the changes in the murmurs it occurred to me that it might also help to explain the changes in the normal sounds. The explanation I have put forward is as follows. When the body is recumbent the blood in both ventricles is above the auriculo-ventricular valves, whilst the blood in the aorta and pulmonary artery is below the semilunar valves. On the other hand, when the body is erect the blood in both ventricles is below the auriculo-ventricular valves, whilst the blood in the aorta and pulmonary artery is above the semilunar valves. Possibly therefore a weight of blood resting on a set of valves tends to dull the sound of their closure. This explanation was supported by the following experiment.

FIG. 7.



Position 1. Position 2.

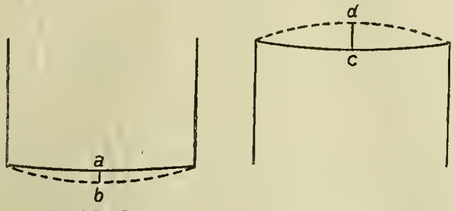
A glass tube A (Fig. 7) three centimetres in diameter has one end open and the other drawn out to a neck. A membrane B of inelastic waterproof material is stretched not quite tightly over the broad end. The neck is connected with a ball syringe C, by a short length of rubber tubing D. The whole apparatus is filled with water so that a slight sudden pressure on C makes B suddenly tense and thus produces a sound. It will be found that when A is held in Position 1 with B upwards—i.e., with no weight of fluid on B—the sound is sharper that when A is held in Position 2 with B downwards—i.e., with a certain weight of water resting on B.

*Objections to these last two explanations answered.*—So far as the normal first sound and the regurgitant murmurs at the auriculo-ventricular orifices are concerned, it has been objected that the intra-ventricular systolic pressure is so great that it is hardly conceivable that gravity could affect the sounds.

*Normal sounds.*—My own want of precision in statement is responsible for the objection as regards the normal sounds. The weight which rests on the auriculo-ventricular valves in recumbency is not the whole weight of blood in the ventricles, but only that small part of it which the want of rigidity of the ventricular walls allows to rest on them. This weight is acting before systole begins and has the effect of making the valves already partially tense. Consequently when systole begins the completion of the tension of the valves cannot produce so sharp a sound as if no weight had rested on the valves so that they were quite relaxed at the moment when systole begins. A diagram (Fig. 8) will make clearer what I mean. In Position 1 a weight of fluid has put a membrane slightly on the stretch in the position *a*; a sudden rise of pressure in the fluid then makes the membrane fully tense at *b*. The short movement *a* to *b* in Position 1 of the membrane already slightly stretched can scarcely be expected to give rise to so sharp a sound as the greater movement *c* to *d* of the membrane in Position 2 where no weight of fluid previously rested on the membrane which lay relaxed at *c*.

*Mitral and tricuspid regurgitant murmurs.*—As regards these murmurs it should be remembered that the full intraventricular systolic pressure is not immediately attained when the ventricle begins to contract and that the murmur is loudest at its beginning, whilst the pressure is relatively low. With regard to the sounds produced at the semilunar valves the following objections have been urged: (*a*) that, as the circulation forms a system of closed tubes, gravity can produce no effect within it, ascending columns of blood balancing descending columns; (*b*) that the aorta acts as a syphon; and (*c*) that the change in the second sound on assuming the upright position is due to an increase in the blood pressure in the aorta and pulmonary artery consequent on that position.

FIG. 8.



Position 1. Positton 2.

To these objections the following reply may be made: (*a*) It has been shown by Dr. Leonard E. Hill and others that gravity does act within the circulation. Table IV., prepared from observations kindly taken for me with the Riva-Rocci instrument by Mr. A. Hawkins, house physician to the Royal Devon and Exeter Hospital, shows in the majority of the cases observed a very decided effect of gravity on the blood pressure. The pressure was taken in the brachial artery in three positions—viz., (1) with the body erect (sitting) and the arms hanging at the side, elbow bent, the hand resting on the arm of the chair; (2) body erect (sitting) with the arm held extended vertically over the head by an assistant so that no exertion was made by the person under observation; and (3) body recumbent, with the arm extended by the side. (*b*) Directly after systole the aorta and its branches are so over-distended with blood that their elastic recoil shuts the aortic valves. Under these circumstances it seems impossible to argue that just before the closure of the valves the aorta is acting as a syphon. In the pulmonary circuit gravity can act as well as in the systemic circulation for the same reason—viz., that the vessel walls are not rigid and are under the influence of atmospheric pressure. When the body is upright it is clear that the blood in the pulmonary artery and the lungs above its level is above the level of the semilunar valves; when the body is recumbent the whole pulmonary circulation is clearly below the level of these valves. All that is necessary to account for the change in the sounds is that a very small weight of the pulmonary blood, just enough to close and slightly stretch the valves, shall be allowed to rest on them by the want of rigidity of the pulmonary vessels. (*c*) Table IV. seems to show that the third objection rests on a mistake. The cases given are too few to make a more general assertion. At all events, this third objection is quite unsupported by proof.

TABLE IV.—*Blood Pressure Estimations with Riva-Rocci Instrument applied over Brachial Artery on 12 Different Persons in Three Different Positions. These were kindly made for me by Mr. A. Hawkins.*

| Sitting up. | | Lying down, arm at side. |
|---|---|---|
| Arm by side. | Arm held up. | |
| 130 | 120 | 110 |
| 90 | 70 | 85 |
| 140 | 110 | 135 |
| 180 | 140 | 190 |
| 140 | 130 | 160 |
| 126 | 110 | 140 |
| 130 | 110 | 160 |
| 120 | 105 | 140 |
| 110 | 80 | 165 |
| 120 | 60 | 130 |
| 140 | 90 | 150 |
| 110 | 100 | 130 |

### *The Effect of Posture on the Accentuated Pulmonary Second Sound.*

The accentuated pulmonary second sound, as heard in the second left interspace close to the sternum, is more marked—often much more marked—in the recumbent posture than it is in the erect. This is doubtless due to the coincident decrease of chest-depth bringing the chest wall so much closer to the pulmonary valve. That it does is in some cases proved by the fact that on recumbency the shock of their closure becomes here actually palpable.

### *The Effect of Posture on the Reduplicated Second Sound.*

The reduplicated second sound, as heard over the pulmonary artery, even in mitral stenosis, is often more markedly divided in the recumbent than in the erect position—indeed, it is sometimes only reduplicated on recumbency. It is generally supposed that the reduplication is due to asynchronous closure of the aortic and pulmonary valves. Balfour,[12] however, has pointed out that this cannot be always the case, because the reduplication of the second sound has been observed in patients in whom the aortic second sound was completely replaced by an aortic regurgitant murmur. Guttmann has suggested that the reduplication may be sometimes due to asynchronous closure of the cusps of one set of semilunar valves, but I cannot discover that he has offered any proof of this. My observations lead me to think that the mode of production suggested by Guttmann is the usual one and that the pulmonary cusps are usually those whose want of synchronism in closure divides the sound. My reasons for this conclusion are as follows. In the recumbent posture: (1) the reduplication is best heard in almost all cases directly over the pulmonary artery, not midway between the points where the second aortic and second pulmonary sounds are respectively best heard; (2) its area of audibility frequently does not include the aortic area, though it extends a considerable distance to the left of the pulmonary area; (3) the two parts of the doubled sound are often loud when the aortic sound heard directly over the aorta is weak; and (4) in two cases in which the shock of the closure of the pulmonary valves could be easily felt in the second left space close to the sternum, the shock was distinctly felt to be double, just as the sound was.

### *Conclusion.*

To sum up briefly the foregoing, in most cases the change from the erect position to the recumbent: 1. Raises and narrows the normal cardiac dulness. 2. Makes the first heart sound duller and the second sharper, thus producing the classical "lub-dup." 3. Diminishes the antero-posterior diameter of the chest. 4. Markedly narrows the dulness of an enlarged heart. 5. Increases the loudness and area of audibility of (*a*) "hæmic murmurs" both at the base and apex; (*b*) mitral and tricuspid regurgitant murmurs; and (*c*) aortic stenotic murmurs. (Some of these murmurs may only be audible in the recumbent posture.) 6. Lessens the loudness and area of audibility of (*a*) the "venous hum" in the neck; and (*b*) the presystolic murmur of mitral stenosis. (Some of these murmurs may only be audible in the erect posture.) 7. Leaving unaffected the murmur of aortic regurgitation. 8. Increases the loudness of the accentuated pulmonary second sound. 9. Makes more marked the reduplication of the reduplicated second sound. (In some cases the reduplication is only heard in the recumbent position.) 10. Causes the partial or complete disappearance of the cardiac dulness in certain cases of cancer in their later stages. Taking all these facts into consideration, I would submit that it has been shown that no description of the cardiac physical signs can be regarded as complete which does not include a statement of the position of the patient at the time of observation.

Exeter.

---

[12] Op. cit., p. 35.

---

THE CULTIVATION OF QUININE IN THE CONGO.—The Congo Government has sent out a certain number of quinine trees (cinchona), chosen from the eight best kinds, to Central Africa. It is proposed to plant them in different provinces at a minimum altitude of 2400 feet above the sea. During the coming winter 2000 more shoots from the nurseries in the colonial garden at Laeken will be sent out.

# FURTHER RESEARCHES INTO THE ETIOLOGY OF CARCINOMA: NOTE UPON CERTAIN HISTOLOGICAL FEATURES OF CARCINOMATOUS TUMOURS REVEALED BY AN IMPROVED AMMONIO-SILVER PROCESS.

BY W. FORD ROBERTSON, M.D. EDIN.,
PATHOLOGIST TO THE SCOTTISH ASYLUMS;
AND
M. C. W. YOUNG, M.B., CH.B. EDIN.

TWO and a half years ago there was published in THE LANCET a paper by Mr. Henry Wade and one of us[1] in which it was contended, on the ground of observations recorded, that carcinomatous tumours are etiologically related to a special protozoan organism, capable of being demonstrated in such tumours and cultivated from them. In the course of researches carried out during the past year, we have obtained much new evidence that we regard as confirmatory of this view. This evidence has been derived both from cultural and histological observations. We shall deal here only with the latter; the former have not been devoid of further definite results, but on account of certain difficulties of interpretation that have arisen we wish to repeat and to extend the experiments before making any communication regarding them.

As is well known, the view that carcinomatous tumours are of parasitic origin, at one time strongly advocated, has of late years fallen into disfavour owing to the inability of most observers to obtain convincing evidence of the presence of any special parasites and for other reasons. There are, however, signs that the question of the etiology of these tumours is now entering upon a new phase in which the investigations that will add materially to our knowledge of the subject will be concerned mainly with the study of certain special micro-organisms now demonstrable in the tissues, the cultivation of these parasites and their destruction by vaccine and serum-therapeutic methods.

Gaylord, Clowes and Baeslack[2] have shown that a large percentage of tumours produced in mice by inoculation of Jensen's adeno-carcinoma undergo spontaneous retrogression and disappear. They were the first to obtain extensive evidence of this fact, though it had been observed previously by Michaelis and Apolant. They have, moreover, shown that mice which have thus spontaneously recovered cannot be successfully reinoculated. The conclusions of these American workers were at first seriously questioned, but have now been fully confirmed. There are at present many who endorse their opinion that these phenomena of spontaneous retrogression and immunisation are best explained on the view that there is a living virus concerned in the production of these tumours which is capable in certain instances of being successfully combated by the protective forces of the host. Gaylord[3] has reported some observations showing that infected cages may be a source of spontaneous cancer in rats and mice. Ehrlich[4] has observed the transformation of the adeno-carcinoma of the mouse into a sarcomatous tumour, an occurrence which would be satisfactorily explained by such growths being dependent upon infection of the tissues by a special micro-organism. Schüller[5] has recently, in confirmation of previous contentions, maintained that he has been able, with the aid of a special double staining method, to demonstrate the presence of certain parasitic bodies in the nuclei of the proliferating cells of carcinomata and sarcomata. It seems probable that these bodies are identical with the "granular phase" described in the previous paper in THE LANCET as having been found especially in the cells of a malignant adenoma of the intestine and shown in one of the photographs (Fig. 5) illustrating that communication. Gaylord,[6] in a paper published a few months ago, has described a special spirochæta in primary and transplanted carcinoma of the breast in mice. This organism differs from the spirochæta microgyrata of Löwenthal and from the organisms found by Borrel in mouse tumours, in respect of the fact that it is not coloured by the Giemsa stain. It is best revealed by Levaditi's method which shows it as a characteristic spiral organism from 2·5 to 2·8 $\mu$ in length and 0·6 $\mu$ in width, with from 4 to 13 turns per individual. These spirochætæ were found in ten consecutive spontaneous carcinomata of the breast in mice obtained from various districts, and in all of 16 transplanted mouse tumours examined. Gaylord states that they occur chiefly in the most actively growing portions of the tumour and live in the connective tissues at the margin of the growth and in the stroma, but also between the epithelial cells and in cyst cavities where these are present. The organisms are also occasionally found in the protoplasm of the epithelial cells, and their presence in this situation is regarded by Gaylord as an evidence of phagocytosis on the part of the tumour cells. He recognises that his observations do not as yet establish an etiological relation between these spirochætæ and cancer of the breast in mice. Gary N. Calkins,[7] in a paper published at the same time, names these organisms spirochæta microgyrata (Löwenthal) var. Gaylordi. He finds that the average length of the node (the part from the crest of one undulation to the crest of the next adjacent) is 0·6 $\mu$, and considers this fact at the present time the most satisfactory basis for the identification of the organism. This spirochæta is also 0·6 $\mu$ in width and therefore the nodes are characteristically crowded and the undulations steep. Compared with spirochæta Obermeieri, spirochæta refringens, and spirochæta pallida, it has more crowded nodes and a greater diameter, both relatively and absolutely. The ends are blunt and rounded, and there is no evidence of tapering at the extremities, of undulating membrane, or flagella. The closing paragraph of Calkins's paper is of special interest in connexion with the observations we are about to record, and we therefore quote it in full: "Various enigmatical structures are found in the nuclei of the epithelial cells of these primary cancers—structures which I have failed to find in any of the normal glandular tissue which has been treated in the same way as the cancer tissue (i.e., by the Levaditi silver impregnation method). For this comparison I have examined carefully tissue from thyroid, liver, intestine, and, in addition, mesentery connective tissue and muscles, all from normal mice, and in no case have I found the organism or intranuclear bodies mentioned above. In a future publication I hope to be able to throw some light on the significance of these intranuclear structures."

Our own recent histological observations have been essentially a continuation of those already recorded in THE LANCET. We have made numerous experiments with a view to improving the ammonio-silver process. Distinct advances as regards the clearness of the histological pictures have been obtained by stronger silver impregnation and by the employment of various agents which partially remove either the silver deposit or the gold which has replaced it. For the removal of the silver deposit platinum bichloride has been of most service; for the removal of the gold deposit potassium cyanide has been used. A still further and very striking improvement has recently been effected by fixing the tissues with corrosive sublimate. The necessary directions for the carrying out of this improved ammonio-silver process are given below.

The general result of these new investigations has been to obtain a considerable amount of additional evidence of the occurrence of special intranuclear bodies of the nature of those previously described, to show that structures morphologically identical with the spirochæta microgyrata can be demonstrated in human carcinomata, and to confirm the previous observation of the occurrence of small nucleated bodies, evidently of amœboid character, in such tumours. We have also to record some observations upon the Jensen mouse tumour, including that of the presence of a body morphologically identical with the spirochæta described by Gaylord and Calkins. We shall first briefly describe the appearances presented in some tumours of which specially successful preparations have been obtained.

1. *Squamous epithelioma (anus). Removed by operation. Received from Mr. Henry Wade. Ammonio-silver process,*

---

[1] W. Ford Robertson and Henry Wade: THE LANCET, Jan. 28th, 1905, p. 215.

[2] Medical News, Jan. 14th, 1905; Clowes. Bulletin of the Johns Hopkins Hospital, April, 1905; Clowes and Baeslack, Medical News, Nov. 18th, 1905; Gaylord and Clowes. Surgery, Gynecology, and Obstetrics, June, 1906; Clowes, Brit. Med. Jour., Dec. 1st, 1906.

[3] Brit. Med. Jour., Dec. 1st, 1906.

[4] Berliner Klinische Wochenschrift, 1905, No. 28.

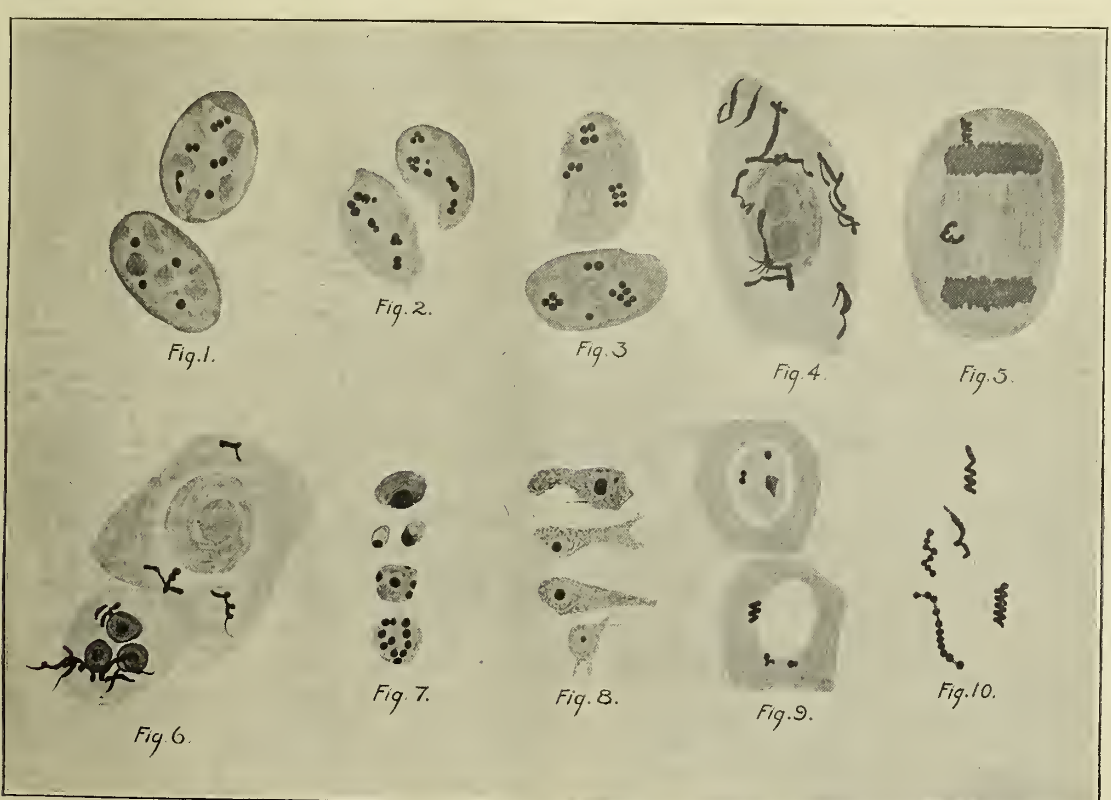
[5] Ibid., 1907, No. 9.

[6] The Journal of Infectious Diseases, vol. iv., No. 2, April 10th, 1907.

[7] Ibid.

*with sublimate fixation, gold-tungstate toning, cyanide decolourization.*—In some of the preparations the nuclei of the epithelial cells at the growing edge of the tumour contain from one to 20 black spherical bodies varying from about 0·2 to 0·5 μ in diameter (Fig. 1). They occur singly or in pairs, less commonly in chains of three or four. Elongated forms are very occasionally to be observed. These bodies persist during the mitotic division of the cell. The chromatin and nucleoli of the epithelial cells are decolourized, as are also most of the other tissue elements throughout the preparation and therefore these special bodies may conveniently be spoken of as cyanide-fast. This character is, however, only comparative, for, by continuation of the action of the cyanide, the gold deposit can be completely removed from the tissues. In another set of preparations these spherical intranuclear bodies are only rarely to be observed, but most of the epithelial cells contain in their protoplasm, occasionally also in their nucleus, more or less numerous bodies of elongated form, appearing for the most part as short twisted and kinked threads (Fig. 4). Many of them are distinctly spiral in form. The ends are often tapered to a fine point. Many curious forms occur, which, however, need not be described here. These elongated bodies appear to have developed from the intranuclear structures just described, as transition forms can be seen and both types are cyanide-fast. They may frequently be observed in cells undergoing mitosis (Fig. 5). The cell figured contains a body which is morphologically identical with spirochæta microgyrata. It is, however, to be noted that indirect division of the cell appears often to result in the ejection of these bodies, as an aggregation of them may not infrequently be observed at the edge of a dividing cell, the protoplasm of which is devoid of them. As a rule, however, the dividing cells contain these bodies. In some portions of the tumour there may be observed, lying in the connective-tissue spaces, numerous delicate bodies of irregular outline from about 2 to 8 μ in length (Fig. 8). They constantly show a small rounded black body in their interior and thus they have the aspect of nucleated structures. They are to all appearance delicate amœboid bodies. As a rule, they are extracellular, but they have occasionally been seen within the protoplasm of an epithelial cell. They appear to arise by a simple transition from the thread-like bodies just described. This tumour is infiltrated with wandering polymorphonuclear leucocytes which show the most remarkable evidences of chemiotactic attraction towards all forms of these peculiar bodies. They push their way between the epithelial cells and when in this situation they almost constantly show cyanide-fast bodies in their interior (Fig. 6). Quite commonly these leucocytes can be seen to be lying in part within the protoplasm of an epithelial cell; some have been observed to be inclosed by the protoplasm and one has even been found within a nucleus. The phagocytes among the connective tissues contain the same bodies in various stages of disintegration and represented ultimately by only a mass of fine granules of a reddish-brown colour.

2. *Squamous epithelioma (face). Post mortem tissue obtained, however, in very fresh condition. Received from Dr. R. A. Lundie. Ammonio silver process with sublimate and picric acid fixation, gold-tungstate toning, cyanide decolourization.*—The nuclei of many of the proliferating epithelial



DESCRIPTIONS OF FIGURES.

FIG. 1.—Two nuclei of tumour cells in a squamous epithelioma, showing cyanide-fast bodies (× 1200).

FIG. 2.—Two nuclei of tumour cells in another squamous epithelioma, showing similar cyanide-fast bodies.

FIG. 3 —Two nuclei of tumour cells in a malignant adenoma of the intestine, showing similar bodies revealed by palladium-gold toning.

FIG. 4.—A cell of a squamous epithelioma, showing thread-like cyanide-fast bodies in protoplasm and nucleus.

FIG. 5.—Dividing cell in the same tumour as the preceding, showing a spiral cyanide-fast body and another body of similar nature. The chromatin is stained with methylene blue.

FIG. 6.—Epithelial cell and leucocyte in the same tumour as that from which Figs. 1, 4, and 5 were drawn. To illustrate the phagocytic action of the leucocytes upon the supposed parasites.

FIG. 7.—Examples of supposed amœboid bodies observed in the tumour cells in a malignant adenoid of the breast.

FIG. 8.—Similar bodies observed in the connective tissue spaces in an epithelioma of the lip.

FIG. 9.—Two tumour cells in an adeno-carcinoma of the mouse. The upper cell shows cyanide-fast bodies in its nucleus. In the protoplasm of the lower cell (the nucleus of which has dropped out) there are three similar bodies, one of which has the form of the spirochæta microgyrata.

FIG. 10.—Examples of thread-like, spiral, and dumb-bell-shaped bodies in the lymph spaces in palladium-gold preparations of a malignant adenoma of the intestine.

cells contain numerous black spherical bodies, identical with those described in the preceding case (Fig. 2). Similar bodies occur locally between the epithelial cells and among the connective tissue. No thread or spiral forms have been detected, but a few amœboid forms have been seen. Processes of phagocytosis seem to be in abeyance.

3. *Very rapidly growing squamous epithelioma (foreskin). Removed by operation. Sent by Dr. R. B. Campbell of Inverness District Asylum. Formalin fixation, ammonio-silver process, gold-tungstate toning, cyanide decolourization.*—Black spherical bodies, identical with those already described, are present in the nuclei of many of the epithelial cells, but there are rarely more than three or four in one nucleus. Many cells do not contain any. Similar cyanide-fast bodies can be seen lying in the spaces between the epithelial cells. There are abundant polymorphonuclear leucocytes among the adjacent connective tissues and locally among the epithelial cells; most of them are loaded with the cyanide-fast bodies in various stages of disintegration. Some twisted thread-like bodies, similar to those described in Case 1, have been observed among the connective tissues. In the nucleus and protoplasm of the epithelial cells, between the epithelial cells, and in the connective tissues numerous examples of bodies morphologically identical with the spirochæta microgyrata have been detected, but composed of rarely more than three or four nodes.

4. *Secondarily infected mesenteric lymphatic gland from a case of malignant adenoma of the intestine. Removed by Dr. F. M. Caird. Formalin fixation, ammonio-silver process, palladium-gold toning.*—Some of the histological features presented by this tissue, more especially the granules in the nuclei, were described in the previous paper. In some of the pieces examined the nuclei of the epithelial cells contain from six to 12 or more black spherical bodies, morphologically identical with those described in the foregoing cases (Fig. 3). Similar bodies are sometimes to be seen in the nuclei in the connective-tissue corpuscles. They occur also in the protoplasm of the epithelial cells and are fairly abundant in the spaces of the surrounding connective tissues. There is marked phagocytic activity on the part of the polymorphonuclear leucocytes, which commonly contain similar black granules. Spiral forms have not been recognised within the nuclei of the cells, but they are fairly common in the connective-tissue spaces. In one set of sections they are locally very abundant (Fig. 10). Many of the preparations from this case show the supposed amœboid bodies. These occasionally assume an elongated form with knob-like extremities; such bodies were also described and figured in the previous paper as occurring in this tumour.

5. *Malignant adenoma of breast. Removed by Dr. David Wallace. Sublimate fixation, ammonio-silver process, gold-tungstate toning, cyanide decolourization, re-toning with gold-tungstate solution.*—The most striking feature in the preparations from this case is the presence in the protoplasm of very many of the epithelial cells of numerous bodies of the nature of the supposed amœboid bodies already described as occurring especially in Case 1. They differ, however, in having generally a spherical instead of an irregular outline (Fig. 7). This difference may be accounted for by the fact that they are lying within the protoplasm of a cell instead of in a lymph space. From one to 20 may occur in a single cell. In many of the sections they are the only structures that have resisted the action of the cyanide, everything else being colourless. The most common form is that of a finely granular rounded body about 2 $\mu$ in diameter containing a minute black dot, generally eccentric in position. Some of the smaller forms, commonly oval in shape, are outlined by a dark band, internal to which there is a clear space and at one end a black granule (Fig. 7). Some of the larger forms contain numerous cyanide-fast bodies, identical with the black spheres already described in the other cases. Some thread-like forms, similar to those seen in Case 1, have been observed, but no spiral bodies have been detected.

Appearances similar to those described in these five tumours have been observed with less distinctness in very numerous other carcinomatous growths, fixed in formalin and prepared for examination in accordance with an earlier technique. Various normal and morbid tissues have also been studied as controls. The black spheres in the nucleus are not a normal feature of either squamous or glandular epithelium. In morbid tissues there are, as might be expected, many degenerative granules which hold on to the gold deposit with considerable tenacity, and among these there are especially certain fatty granules. As a rule, however, these are easily distinguished from the bodies we have described.

We have also examined by our new method an adeno-carcinoma of a mouse (Jensen's tumour) kindly supplied to us by Mr. Wade. The tumour had been hardened in formalin. In a set of preparations from a rapidly growing portion of the growth appearances are presented very similar to those we have described in human carcinomata. Over extensive areas the nuclei of nearly all of the epithelial cells contain several cyanide-fast bodies, occurring as single spheres, in pairs, and in short chains (Fig. 9). In some instances the black granule appears to be contained within a paler structure of irregular outline. In these preparations the chromatin of dividing cells is stained red and the black spheres can be seen to persist during the mitosis of the cells. Similar bodies are occasionally to be observed in the protoplasm of the cells (Fig. 9) and in the surrounding connective tissues. In all of these tissues forms may occasionally be detected which have the morphological characters of the spirochæta microgyrata, excepting that the number of nodes rarely exceeds two or three.

Several questions arise in regard to these histological features that we have described. The first naturally is, What are the cyanide-fast bodies? They are certainly not normal structures and it is at least extremely improbable that they are merely degenerative products. They occur especially in the rapidly dividing tumour cells, they have certain regular forms which are repeated in successive tumours, and they have not been found in other pathological conditions. Numerous observed facts support the view that they are stages of a special protozoan organism. They appear to undergo proliferation; the spherical forms commonly occur in pairs and not infrequently as short chains. The bodies of the form of the spirochæta microgyrata and those that have the appearance of minute nucleated amœbæ cannot be explained away as degenerative products. The strong chemiotactic attraction that is manifested by the polymorphonuclear leucocytes towards these special bodies could hardly be developed towards any simple degenerative product, but might quite well be exhibited towards a special parasite. Agar cultures made from the malignant adenoma of the intestine show certain spherical bodies, evidently proliferating and advancing into the medium, as described in the former paper. We have recently tested these bodies in sections of the agar medium and find that they are cyanide-fast, like the bodies observed in carcinomatous tissues.

If it is admitted that these bodies are parasites the next question that arises is, Are they spirochætæ? If they are spirochætæ such organisms have a much more complicated cycle than has been supposed, for it is pretty clear that the spherical intranuclear bodies, the threads, the spirals, and the amœboid forms, are all stages of the same structure. There is some ground for questioning that the supposed spiral is always really of this form. In examples such as those shown in Figs. 5, 6, and 9 this form occurs almost beyond a doubt. It is different, however, in the case of the bodies shown in Fig. 10, observed in great numbers in a malignant adenoma of the intestine. The lymph-spaces of this tumour are in places filled with spherical, dumb-bell, and chain-like forms, and it is only occasionally that a spiral character is assumed. Many of the bodies that on first view appear to be spirals are, however, capable of being interpreted as composed of a number of closely approximated dumb-bell forms which have assumed a regular zigzag arrangement.

The observations now recorded may be held to support certain of the conclusions already advanced by Mr. Henry Wade and one of us—namely, those regarding the frequent presence in carcinomatous tumours of special intranuclear bodies which persist during the division of the cells, the occurrence of intra-cellular and extra-cellular amœboid bodies and the contention that the great activity of the polymorphonuclear leucocytes is a manifestation of a phagocytic action directed against a specific parasite. Whether the speculations regarding the exact nature of the parasite and its life cycle were near the mark or not is a comparatively trivial matter.

In conclusion, we would acknowledge our indebtedness to the persons already named who have kindly supplied us with tissues, and also to Dr. M. B. Hannay who has sent us many tumours that have been of much value to us in our work.

### APPENDIX.

*The technique of the ammonio-silver method with gold-toning and cyanide decolourization.*—Place thin slices of tissue in Heidenhain's sublimate solution. After from 12 to 24 hours wash the pieces shortly in water and place them in 80 per cent. alcohol (made with absolute alcohol), to which iodine dissolved in absolute alcohol has been added until the fluid has the colour of pale sherry. Renew this fluid daily until it ceases to be decolourized (generally from four to six days). Then place the tissues in 80 per cent. alcohol without iodine. After 24 hours transfer them to 5 per cent. formalin in water. In this they may remain for an indefinite period, but at least one day must elapse before the next stage is proceeded with. Place a piece of tissue in a bowl of water (which should be changed at least once) for from two to three hours. Make the ammonio-silver solution by adding 5 per cent. ammonia to 5 per cent. silver nitrate in distilled water, until the precipitate which at first forms is completely dissolved; then add more silver nitrate until a distinct cloudiness returns. Filter this solution into a bottle or specimen tube, add the piece of tissue and put the bottle, tightly corked, in the incubator at 37° C. for seven days. The silvering may thereafter be continued in the cold if it is not convenient to go on at once to the next stage. Place a piece of the impregnated tissue in a bowl of water (500 cubic centimetres) to which about two cubic centimetres of 5 per cent. ammonia have been added. Remove the surface deposit as far as possible. This is best done simply with the aid of the fingers whilst the piece of tissue is held under water. Transfer the piece to a second bowl of ammonia and water. Renew the fluid after about an hour and leave the tissue in this for three or four hours longer. Transfer to dextrine solution (dextrine five ounces or 140 grammes, water ten ounces or 280 cubic centimetres; dissolve by boiling; filter the solution through cotton-wool while still hot; after it has cooled add 1 per cent. of carbolic acid) to which ammonia has been added in the proportion of ten drops of a 5 per cent. solution to one ounce, immediately before use. Allow the tissue to remain in this for from 12 to 24 hours. Cut thin sections on the freezing microtome. Transfer them from the knife to a bowl of water to which about ten drops of 5 per cent. ammonia have been added. After about five minutes transfer the sections to another bowl of ammonia and water, and after a similar period give them a third wash. Transfer the sections to a bowl of water to which there have been added from five to ten drops of a saturated solution of citric acid in water, and allow them to remain in this for four or five minutes. Place the sections in a bowl of tap water and after a few minutes transfer them to a second bowl of water. They are now ready for toning.

The reagents required for the toning and decolourization processes are 1 per cent. solution of gold chloride in distilled water, 1 per cent. solution of pure sodium tungstate in distilled water (it is necessary to effect the solution of the salt by boiling), and 1 per cent. potassium cyanide in distilled water. Using only a clean glass rod or platinum needle, place from six to 12 sections in a watch-glass containing a mixture (carefully filtered) of the sodium tungstate and gold chloride solutions in equal portions. Allow the sections to tone for about half an hour, or until they assume a distinct red tint, and then transfer them to a bowl of water in which they should be allowed to wash for some minutes. Next place the sections one at a time in a watch-glass containing a little of the cyanide solution. When the section has lost its deep red colour and assumed a light pink tint, transfer it to a bowl of water and allow it to wash for from ten to 15 minutes, giving at least one change of water. Next stain the section for from five to ten seconds in Löffler's or Neisser's methylene blue, wash it well in water, dehydrate with absolute alcohol, clear in equal parts of turpentine and benzol, and mount in benzol-balsam.

Edinburgh.

---

AT a special court of the governors of the North-West London Hospital held at the institution on July 31st, Lord Rathmore being in the chair, it was unanimously resolved to act on the recommendation of King Edward's Hospital Fund to amalgamate the hospital with the Hampstead General Hospital. The present building in the Kentish Town-road will be reserved, we understand, as an out-patient department.

---

# A STUDY OF THE CONDITIONS PRODUCING THE ANOMALOUS REACTION NOT INFREQUENTLY MET WITH ON TESTING URINE FOR SUGAR WITH FEHLING'S SOLUTION.

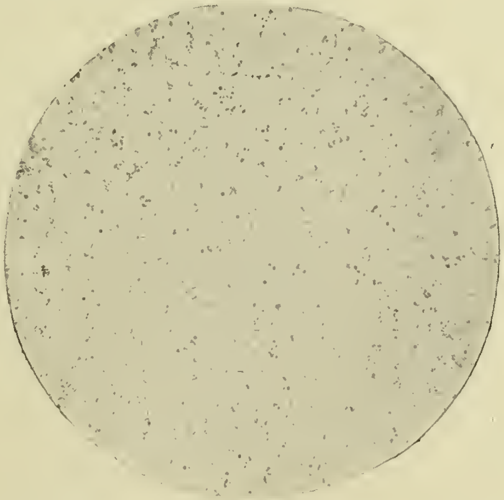
BY F. W. PAVY, M.D. LOND., LL.D., F.R.S.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL; HONORARY PHYSICIAN TO KING EDWARD VII. HOSPITAL.

(*Concluded from p. 293.*)

### STUDY APPLIED TO THE URINE.

THE details that have been entered into may be regarded as constituting a foundation for the study of what must be spoken of as the complicated conditions existing in connexion with the urine. It has been shown that when dextrose is dealt with in a pure state the suboxide of copper produced becomes deposited in a more or less crystalline form. There being nothing to interfere with the normal procedure of coalescence, the particles of the newly formed suboxide cohere in a definite manner and lead to the production, when not too hurriedly thrown out, of bodies seen by the microscope to possess a quadrilateral shape. A widely different result is observed when dextrose is present in urine. The associated constituents, by their influence upon the coalescing process, physically alter the character of the precipitate both as regards colour and form. Instead of the vermilion-coloured deposit of the form above described it is noticeable, as regards form, that no matter what the amount of sugar present the precipitate thrown down is of an infinitely finer nature, and, as regards colour, that this varies with the amount of sugar present, beginning with yellow and passing to orange yellow, orange red, brick red, and where much surplus sugar exists to be caramelised by the alkali of the test to brown and brownish black. Throughout in these instances nothing at all resembling the normal type of precipitate is discernible on microscopic examination. Fig. 6 displays a representation of the microscopic appearance of the suboxide precipitate obtained from urine containing 50 per 1000 of sugar.

FIG. 6.



It is thus seen that the effect of the urinary constituents is in all cases, whether the amount of sugar is large or small, to produce a marked alteration from the normal type of suboxide precipitate, and that the alteration is heightened in proportion as the amount of sugar is lessened. In this way the deviation from the normal type gradually becomes more and more pronounced until the anomalous reaction is reached. Furthermore, when this is arrived at the progression of deviation is still carried on upon the same lines as before. As the amount of sugar present is smaller, so there is a more altered kind of reaction produced. For instance, after more or less delay of precipitation, a point to which I will refer later, the contents of the test-tube may become muddy and yellowish-green, followed by a yellow precipitate settling out, or they may assume a muddy green or a muddy bluish-green state. In a stage further on, with the change of colour, there may be a translucent instead of a muddy state. The microscope shows that associated with these conditions there is a progressive diminution of the size of the precipitated particles, and the diminution may advance till they are no longer susceptible of being perceived. When the translucent stage is reached the particles may be of sufficient fineness to remain suspended in like manner to what occurs in the case of an emulsion.

The variation in the colour of the contents of the test-tube is easily to be accounted for. The precipitate is yellow and the liquid out of which it is deposited is blue. According to the relative proportions of these two colours present, so will be the colour of the admixture.

Thus far what has been dealt with resolves itself simply into an alteration of the physical character of the precipitate. By virtue of an inhibiting agency upon coalescence the newly formed suboxide shows itself in a form varying according to the relative coalescing and inhibiting powers existing, these standing in proportion to the specific amounts of reducing and inhibiting materials present.

I have already entered fully into the consideration of creatinine as an inhibitor of suboxide coalescence and have shown that it possesses great power in this direction. I should say that it is the great modifier of the physical character of the precipitate as it is found to be modified by the influence of the urinary constituents. Seeing, as has been learnt from the experimental evidence adduced, that one milligramme of creatinine is capable of modifying the character of 200 milligrammes of suboxide precipitate, it is conceivable that so far as this action is concerned the amount of creatinine present in the urine may suffice to account for the production of the altered state in which the precipitate falls in the circumstances that are being referred to.

It is noticeable in connexion with urine testing that when the precipitate is formed it afterwards, during the process of boiling, more or less speedily changes colour in the direction from yellow to red. With this change the precipitated particles are observed to group themselves into clustered masses representative of a coarser state. Boiling briskly promotes this process of agglomeration.

The other points to be considered in connexion with the anomalous or modified reaction are delay of precipitation, and the occurrence of reduction without precipitation, in which case the blue colour of the test solution becomes replaced, when the reduction is complete, by a colourless state.

It is not infrequently noticeable on testing urine that delay, it may be for what appears a considerable period, of precipitation occurs without any apparent change of colour and then all of a sudden a well-marked precipitate becomes developed. It seems as if reduction was from some cause or other for a time delayed and the impression may be formed that no reaction is going to be produced. In connexion with this occurrence it may be remarked that the amount of sugar present has a marked influence on the result, even in the absence of extraneous matter to produce a complicating effect. For instance, experimenting with Fehling's solution and a pure solution of sugar reveals the fact that precipitation takes place much more rapidly when a large quantity of sugar is present than when only a small quantity exists. Immersing two tubes in the saline bath, one containing one cubic centimetre of a 1 per 1000 solution of dextrose and one cubic centimetre of adjusted Fehling's solution, and the other one cubic centimetre of a 5 per 1000 sugar solution and one cubic centimetre of ordinary Fehling's solution, it is observable that whilst precipitation in the latter almost instantly appears there is some amount of delay before signs of it are visible in the other. It must be borne in mind with reference to the mechanism of reduction that the sugar does not in a direct manner act upon the cupric oxide. It is through the breaking-down influence of the alkali contained in the test on the sugar that the effect is brought about. Without the alkali no reduction would occur.

When delay of precipitation occurs without loss of blue colour it may be taken to be the result of delayed reduction. The delay of precipitation attended with the loss of blue colour constitutes an event of a different nature. Reduction takes place but the reduced oxide instead of being precipitated is held in solution. I have spoken of creatinine in relation to suboxide precipitation and have discussed at some length on the great power it possesses of modifying the character of the precipitate. The retention of the suboxide in an unprecipitated state is another matter—one that is mixed up with complicated associations, as will be seen from the consideration that will now be given to it.

Creatinine, dealing with the quantity existing in healthy urine, has but a limited power in delaying suboxide precipitation, and the power is only made manifest when the amount of suboxide being dealt with is exceedingly small. In the case of one cubic centimetre of a 1 per 1000 solution of sugar, one cubic centimetre of adjusted Fehling's solution, and one milligramme of creatinine compared with the counterpart without the creatinine, marked delay is seen to occur. With a larger quantity of suboxide, however, brought into the question, as, for instance, when a 5 per 1000 solution of sugar is used with the ordinary Fehling's solution, it may be said that practically no material indication of delay is perceptible. In urines giving the anomalous reaction it may be considered that somewhere about 3, 4, or possibly 5, per 1000 of sugar may be reckoned to be present, from which it follows that the creatinine constituent cannot be regarded as answerable to any material extent for the delaying effect that may be noticed to occur.

Although potash promotes the destruction of creatinine, its addition has the effect of rendering delay in the occurrence of precipitation more pronounced. For perspicuously showing this let one cubic centimetre of a 2 per 1000 solution of sugar be taken with one cubic centimetre of adjusted Fehling's solution and one milligramme of creatinine in one tube, and in the other a similar mixture with the addition of one drop of a 40 per cent. solution of potash. Precipitation in the tube containing the potash is seen to occur considerably later than in the other. With five drops of potash solution instead of one drop the interval is greatly extended. With creatinine as the inhibitor of precipitation it is inconsistent that the promotion of its destruction should lead to a manifestation of increased efficiency.

I have shown that urea, from which ammonia is liberated by the alkali of Fehling's solution, has the effect of increasing the delaying action seen in working with a 1 per 1000 solution of sugar to be exerted by creatinine. Taking the experiment with one cubic centimetre of a 1 per 1000 sugar solution, one cubic centimetre of adjusted Fehling's solution and one milligramme of creatinine and a counterpart with the addition of one drop of a 40 per cent. solution of urea, a considerable interval is found to occur between the periods of the two precipitations, showing the delaying action exerted by urea.

The delaying action exerted by urea is increased by the addition of potash, which has the effect of promoting the liberation of ammonia. This can be well shown by operating upon urine that gives a traceable indication of sugar reaction with Fehling's solution. It has been stated that urea alone and potash alone produce an inhibiting effect. With the two combined the effect is increased. For illustration, let one cubic centimetre of the urine and one cubic centimetre of ordinary Fehling's solution be taken as representing the control to be immersed in the saline bath by the side of a second tube containing a counterpart with two drops of a 40 per cent. solution of urea, a third with two drops of a 40 per cent. solution of potash, and a fourth with two drops each of the urea and potash solutions mixed. In the first, precipitation quickly occurs and is followed shortly afterwards by its appearance in the second, whilst an interval of several seconds may lapse before it subsequently appears in the third, and again another similar or even longer interval before it appears in the fourth.

With respect to ammonia, in a direct manner derivable from the urine, as an inhibiting agent, the following piece of evidence, derivable from the extensive series of experiments recorded in the communication of Dr. A. M. Kellas and Dr. F. J. Wethered, referred to at the beginning of this article, appositely fits in. As a result of the experiments conducted with sodium urate on the one hand and ammonium quadriurate on the other, boiled with Fehling's solution, it is noticeable[1] that a certain amount of inhibiting effect occurred in the case of the latter. The only difference existing between the two cases is that in the one a sodium salt is present and in the other a salt from which ammonia would be set free in the process of boiling. The fact alluded to serves to add another link to the chain of evidence connecting ammonia with the inhibition phenomenon.

---

[1] THE LANCET, Oct. 27th, 1906, pp. 1136, 1137.

From all sides it is seen that evidence stands forth pointing to ammonia constituting a factor concerned in the production of the modified reaction being referred to. As a natural consequence it follows that in the presence of ammonia precipitation is inhibited as long as sufficient is present for the purpose. When this ceases, through dissipation by boiling, to be the case the copper suboxide comes into view.

To epitomise, we have clearly two events to deal with in connexion with the modified reaction under consideration, one being the inhibition of precipitation and the other the production of an altered form of precipitate. How far these two events are primarily connected constitutes a problem that may be regarded as open for solution. Doubtless creatinine is the prime agent at the foundation of the production of the modified form of precipitate. As I have shown, it possesses great power as an inhibitor of suboxide coalescence. Now, with regard to the inhibition of coalescence, it is easy to comprehend the *rationale* of the phenomenon as long as visible matter has to be dealt with. It is demonstrable by the aid of the microscope that the degree of fineness of the product stands in proportion to the extent to which coalescence has been interfered with. I have previously discussed this question and have suggested that by an extension of the process of interference we become carried to the state existing in the case of a solution. Have we not here particles of a substance, so minute as to be invisible, held apart by the attraction influence of the elementary material of the solvent, which must of necessity be greater than the attraction power that leads to self coalescence? It is conceivable that creatinine as an inhibitor of coalescence may carry on the inhibition to an extent to affect the elements of the body concerned before coalescence has sufficiently advanced to give a visual something to be dealt with. In such circumstances we are supplied with a representation of the physical condition of solution, and possibly in the presence of a large quantity of creatinine on the one hand, or of a minute quantity of suboxide on the other, by the mechanism in question, newly-formed suboxide might be concealed from view. The amount of creatinine, however, existing in urine I consider may be taken to be inadequate for the production of such a result.

It is known that by altering the relative amounts of Fehling's solution and urine different results are obtainable when only small quantities of sugar are present. The difference may be such that by one mode of testing the urine may appear to be free from sugar whilst by another a pronounced reaction may speedily show itself. The experienced clinician can excite surprise by modifying at will the character of the result produced. Dr. Kellas and Dr. Wethered dilate upon the point mentioned and give[2] a number of experimental representations of the result obtained with the employment of altered relative quantities of urine and test solution. The effect of the urine being in undue quantity in relation to the test solution is to promote the occurrence of a reaction when none might be visible if the test solution stood in larger relative amount to the urine. I agree with Dr. Kellas and Dr. Wethered in considering that the best standard procedure is to employ equal quantities of urine and test. I am also of opinion that they stand upon right ground in suggesting that high specific gravity urines create a demand for an increased proportionate quantity of the test solution to bring them into a parallel position with equal quantities for average specific gravity urine.

What, it may be asked, is the explanation of the varying results to which I have just been alluding? I think the explanation can be given and I propose to pass to its consideration. The actual circumstances before us are that a show of reaction is restrained in one case in a manner that does not occur in the other. In both cases the sugar is present; in the one case it is revealed, in the other it is not. All urine contains sugar, but we are accustomed to speak of it as free from sugar because it does not give a reaction under the ordinary mode of testing employed. It may be said to be fortunate that things stand as they do, for otherwise diagnostic uncertainties might present themselves where none now exist.

Why is it that the sugar known to be present is not revealed by the Fehling's test? This is the problem before us. It is not in reality on account of the want of delicacy of the test reagent, for this, as we know, is delicate enough to reveal an infinitely smaller quantity of sugar than that present in the urine when existing in a state of pure solution. The test solution contains a fixed alkali, and the urine contains nitrogenous matter from which ammonia is liberated during the process of boiling that is carrried out in the application of the test. We have here something to exert a restraining influence on the precipitation of the suboxide, and often it may be seen in testing urine that there is more or less fading of the blue colour of the test, which means that reduction without precipitation has occurred. By long enough boiling precipitation is found to take place. It follows that the larger the amount of test solution present the greater the restraining power in operation on precipitation. Thus no precipitation may occur with the employment of the larger apportionment of the test solution, whilst with the smaller, which entails the presence of a less amount of alkali, precipitation may be observed to take place.

It is the alkali in the test solution that is productive of the effect described, and instead of employing the extra amount of Fehling's solution the result may be brought about by the addition of a few drops of a strong solution of potash. To a specimen of urine giving a somewhat delayed precipitation, if, say, two drops of a 40 per cent. potash solution be added, precipitation is found to be further delayed. The potash restrains precipitation, deductively through leading to the development of ammonia, and if too much potash be used the production of the proper reaction belonging to the test is profoundly interfered with. To promote escape from the reaction producible by the sugar normally present in the urine it is desirable that precipitation should not with too great facility occur, and upon this ground I consider that more alkali should be present than that which is contained in the Fehling's solution in ordinary use. In the liquid that I have from a very early period been in the habit of myself employing the amount of alkali is such, reckoning it to consist of potash, as to stand in the proportion of 170 to the 100 representative of the amount in the ordinary Fehling's solution. I consider it supplies a more dependable and thereby a better liquid. The composition of my solution is as follows:—

*Pavy-Fehling's Solution.*

| | |
|---|---|
| Copper sulphate (crystallised) ... ... ... ... | 34·65 grammes. |
| Potassium sodium tartrate (Rochelle salt) ... | 170·00 ,, |
| Caustic potash ... ... ... ... ... ... ... ... ... | 170·00 ,, |

Distilled water to 1 litre.

I suggest that the question of the amount of alkali in Fehling's solution to which I have been referring is one that is deserving of consideration by others and am decidedly of opinion that the larger amount spoken of leads to the production of a more trustworthy test liquid for urinary application. It must be borne in mind in connexion with this matter that we are confronted with a pitfall on either side. With too little alkali the indication of normal sugar is favoured and with too much alkali sugar present to an abnormal extent may fail to be indicated on account of the restraining effect exerted on the reaction. It behoves us, therefore, in avoiding Scylla to escape from falling into Charybdis.

There is another point to mention touching the respective merits of the two liquids. It is often noticeable on adding Allen's Fehling solution to specimens of urine in equal quantities that a more or less considerable amount of a flocculent precipitate is produced, which becomes rather increased on heating. The deposition is prevented by a little extra alkali and does not ordinarily occur with my own liquid.

### THE BEARINGS OF THE SUGAR NORMALLY PRESENT IN THE URINE.

The presence of sugar as a constituent of normal urine is no longer open to controversy. With the advance of knowledge, the means that have been placed at our disposal for the recognition of sugar are now such as to establish incontrovertibly the point and dispense with the necessity of adverting to the discussion that in former days took place. We stand upon new ground in connexion with the matter but at the same time it is noticeable that a disposition exists to minimise the accepted condition to an unjust extent. For instance, I notice that Dr. Kellas and Dr. Wethered in their communication to THE LANCET already alluded to only grudgingly, as it were, assent to sugar being regarded as a constituent of normal urine. At page 1058 they say: "As a result of a careful review of the whole field of argument we have been led to the conclusion that a small quantity of grape sugar—or a body giving identical reactions —is probably an almost constant constituent of normal urine." At pages 1140–1141 they enter with considerable detail upon the subject and furnish a supply of figures from different sources. As the question of quantity has underlying physiological and other points of importance connected with it, it ought not, I consider, to be allowed to pass without attention being given to it. "We have already stated," they say, "that we venture to differ from Dr. Pavy's method of stating his results. We find by the safranine test that from 0·2 to 1·5 per 1000 [transformed by me from per cent. to per mille expressions] of a body or bodies reacting identically with grape sugar may normally be present, say 0·8 per 1000 (approximately) as an average by the experiments so far carried out. Diet and amount of exercise, as well as specific gravity of the urine, may alter the values considerably. In very concentrated urine values up to 2·5 per 1000 might be found. Above 3 per 1000 should probably be regarded as abnormal, *provided the diet has been normal*, and above 4 per 1000 should, in our opinion, be regarded as of pathological import. Pavy gives 2·79 per 1000 as an average of several experiments (his values varying from 0·91 to 4·88). This value is certainly too high if seriously referred to sugar alone, and has been obtained because the reducing action of creatinine, creatine, mucin, and urates has not been allowed for. Dr. Pavy is aware that these substances exercise reducing action but does not regard them as 'answering for much in this direction.' In our opinion these substances may represent 50 per cent. or more of the reducing effect observed."

---

[2] THE LANCET, Oct. 20th, 1906, p. 1059.

Looked at in its entirety what is here stated is a little mixed up and I cannot consent to safranine being placed in a position to settle the question that confronts us. I hold that a very incorrect notion exists with regard to the condition of normal urine in relation to sugar and in substantiation I will proceed to examine the points bearing on the matter.

In my recent work on "Carbohydrate Metabolism and Diabetes" I have given the results derived from 42 observations conducted upon the urine of the rabbit, cat, dog, horse, and the human subject. The point raised regarding the deduction to be made from my values for the reducing action of other urinary ingredients existing in addition to sugar does not bear anything approximating to the significance that is shown in the above remarks to be claimed for it. The matter is open to being put into shape for being viewed through definite terms of expression and let us see what the reduction to be made in reality amounts to.

Both creatinine and creatine are named amongst the reducing substances but it is generally considered that the former only is in ordinary circumstances present. Mucin, although enumerated, does not possess, *per se*, reducing power. Only creatinine and uric acid in the list are consequently left, and through what has been said in a former part of this communication about these bodies, to which I may refer the reader, a definite estimate of the effect producible by them can be framed.

For average conditions it was found to work out that, expressing the reducing power exerted by them in terms of glucose, the figures representative of the effect produced by the amounts respectively present in the urine stand at 0·25 per 1000 for creatinine and 0·35 per 1000 for uric acid, making 0·60 per 1000 for the two. The average total reducing power of urine, derived from my observations and mentioned in the quotation given, amounts to 2·79 per 1000. From this the deduction to be made for creatinine and uric acid is 0·60 per 1000, which brings the figures for glucose to 2·19 per 1000. In taking exception to my assertion that I did not consider the reducing substances apart from sugar could be regarded as answering for much in the sum of reduction occurring Dr. Kellas and Dr. Wethered hazard the opinion that they may represent 50 per cent. or more of the reducing effect observed. Upon the basis of the calculation given the figures expressive of total reducing effect—viz., 2·79—become reduced by deducting from them those for the other than sugar reducing action to 2·19, giving for this other than sugar reducing action the proportion of a little over one-fifth of the whole in place of the suggested 50 per cent. or more.

Dr. Kellas and Dr. Wethered afterwards set forth results obtained by various other observers and in the main they are seen, as is admitted, fairly to agree with mine. Amongst the results mentioned I noticed those of Baisch, referred to below, which I submit ought not to have found a place where they stand. After stating that "according to Baisch the quantity of glucose averages 0·005 per cent. and of total carbohydrates about 0·01 per cent.," there follows the remark that the results "are probably considerably under the true quantities present," succeeded by reference to an author who says that the test made use of cannot be regarded as in any way quantitative in its indications. The impression created by the figures here given may have the effect on the mind of reducing to insignificance the amount of sugar present in normal urine, but the cause of truth is not likely to be benefited thereby.

Not only must it be considered as thoroughly established that sugar in decidedly manifest quantity exists in normal urine, but recent advance of knowledge has placed us in a position to bring sugar differentiation into connexion with the matter. Dextrose was formerly thought to be the kind of sugar present within the system. It is now susceptible of being shown, however, that such is not exclusively the case. A joint paper by Pavy and Siau is to be found in the *Journal of Physiology*, Vol. XXVI., 1901, bearing the title, "On the Nature of the Sugar Present in Normal Blood, Urine, and Muscle," in which demonstrative evidence is supplied in proof of the presence of sugar of lower cupric oxide reducing power than dextrose. A maltose type of sugar is recognisable through the character of the osazone crystals obtainable, and it may be inferred that dextrinoid bodies are also present.

In the case of urine it is particularly noticeable that low cupric oxide reducing material is found to exist. About 60, indeed, is found to represent the average associated cupric oxide reducing power, viewed in relation to 100 reckoned as the cupric oxide reducing power of glucose. Thereby, on account of the lower cupric oxide reducing power possessed by the material in comparison with glucose, in terms of which the expression is made, what is indicated as amounting to 60 parts stands in reality as the equivalent of 100 parts. Owing to this position of matters the indication afforded by a quantitative examination that has not been preceded by hydrolysis is only representative of a little more than half of the carbohydrate actually present.

In the series of observations upon the urine of various animals, to which allusion has been made, titration was in every case effected before and after hydrolysis, and when 2·79 per 1000 was spoken of as representing the average amount of sugar for the specimens from the human subject it referred to carbohydrate matter estimated before hydrolysis which was shown by estimation after hydrolysis to amount to 4·63 per 1000. With respect to these increased figures resulting from hydrolytic action, there can be no suspicion of their being derived from cupric-oxide reducing bodies other than of a carbohydrate or of a glucoside nature, inasmuch as the process adopted for effecting hydrolysis has no action in the direction of raising the cupric-oxide reducing power of the other bodies.

I consider that valuable information from divers points of view is derived from the subjection to hydrolysis that was adopted in the observations to which I have been referring. Taking the urine before and after hydrolysis gives a twofold result which adds materially to the weight of the evidence supplied. Throughout the 42 observations recorded a striking consistency is noticeable in the results obtained before and after hydrolysis, and looked at altogether no doubt can be left in the mind that in the first place a very measurable quantity of sugar is present in normal urine and in the next that much fluctuation in the quantity exists in different instances. The highest figures of all were derived from the urine of a rabbit where 8·80 per 1000 constituted the amount indicated before hydrolysis and 16·54 after. The lowest figures were likewise derived from the rabbit and stood at 0·68 per 1000 before hydrolysis and 1·80 after. The mean figures for the 16 observations upon the rabbit were 3·69 per 1000 before hydrolysis and 7·03 after.

It is found that the degree of concentration of the urine constitutes a main factor in determining the extent of sugar indication presented. As an illustration in connexion with this point I may refer to two specimens of normal urine passed by a person within a few hours of each other. One had a specific gravity of 1008 and gave a sugar indication of 0·91 per 1000 before hydrolysis and 1·89 after. The other had a specific gravity of 1024, which was associated with a sugar indication of 2·87 per 1000 before hydrolysis and 5·05 after. Common experience it may be further said shows that it is especially with high specific gravity urines that reactions may be obtained, giving rise to suspicion that an abnormal glycosuric state exists. In an extreme case of low specific gravity urine—viz., one in which it stood at 1002—the sugar indication stood at 0·34 per 1000.

I have stated that in the case of normal urine the cupric-oxide reducing power shown to exist before and after hydrolysis stands ordinarily in the relation of about 60 to 100. The symbol K is used to represent this relation, a body with a cupric-oxide reducing power of, say, 60 before hydrolysis which becomes raised to 100 by conversion into glucose, being spoken of as possessing a K value of 60. In the fasting animal it is noticeable that K stands at a lower point than in the fed animal. In one of my observations upon the rabbit, the one that has been referred to above as giving the lowest cupric-oxide reducing figures, it was noticed that K stood as low as 38, the cupric-oxide reducing power before hydrolysis being 0·68 per 1000 and 1·80 after. In another instance it stood at 42, the figures before and after hydrolysis being respectively 3·70 and 7·90 per 1000.

In mild glycosurics where the urine may give a traceable indication of sugar with Fehling's solution it may be mentioned as a noteworthy point that K stands higher than in the actually normal condition. The initial titration figures may not be higher than those that may possibly be met with in concentrated urine from the healthy person, but the figures after hydrolysis do not show the extent of rise that occurs in the case of normal urine. This means that there is a larger proportion of glucose in the carbohydrate that is present, and it is the elimination of carbohydrate in the glucose form that constitutes the particular feature appertaining to abnormal glycosuria.

I have given in my work, from which I have been drawing examples, a series of ten observations to illustrate the point in question. The mean of the K figures belonging to the series stands practically at 80, the lowest figure in the series being 67 and the highest 88. There are two examples with a K of 88. Taking one of these two, the figures before hydrolysis were 7·69 and after 8·72. I refer to this example to show the contrast with the condition in the normal rabbit's urine referred to above, where the figures before hydrolysis were 8·80 and after 16·54, giving a K of 53. As the abnormal variety of glycosuria attains greater intensity K becomes higher and higher until the glucose so overpowers everything else as to lead to the same figures being obtained before and after hydrolysis, as is found to be the case in pronounced diabetes.

Dr. Kellas and Dr. Wethered[3] extol the safranin test and think that it "deserves to come into more general use." Being unaffected by creatinine and uric acid, they speak of it as a more scientific test than Fehling's solution. This is so far true, but it happens to be of sufficient delicacy to give, as stated by them, more or less reaction with ordinary urine. It is just this character which, in my opinion, renders it unsuited for clinical use and I feel that much danger of frequent error would be incurred if its employment in a general way were adopted. The great value, I consider, of Fehling's solution is that the sugar normally present in urine escapes being revealed except under the existence of special circumstances. In these circumstances, mainly consisting of undue concentration of the urine, whilst only a slight reaction may be given by Fehling's solution, a full reaction would be given by the safranin test with exclusion of the opportunity of seeing any gradational indication.

Assuming that a slight reaction is given by Fehling's solution the question naturally presents itself, does it constitute an exaggerated normal reaction or is it the result of an abnormal condition? To give full opportunity for a trace of reaction to show itself the contents of the test-tube should be briskly boiled for a short time and the tube looked at after being allowed to stand aside for a few minutes. Over and over again it is found, on adopting this procedure, that at the end of boiling there may be no sign of precipitate to be seen, whilst on standing a precipitate comes into view. The scientific way of ascertaining the true significance of a doubtful reaction is through the medium of a test-meal. If two or three hours after a plentiful allowance of starchy matter and sugar has been taken, there is no effect produced upon the urine, it may be concluded that nothing abnormal exists.

Grosvenor-street, W.

---

[3] Loc. cit., p. 1141.

# A METHOD OF AMPUTATION AT THE ANKLE-JOINT WHICH LEAVES THE HEEL INTACT.

WITH A REPORT OF TWO CASES OPERATED UPON AND SHOWN AT THE CLINICAL SOCIETY OF LONDON ON APRIL 24TH, 1907.

By C. GORDON WATSON, F.R.C.S. Eng.,
SURGEON TO THE METROPOLITAN HOSPITAL AND SURGICAL REGISTRAR AT ST. BARTHOLOMEW'S HOSPITAL.

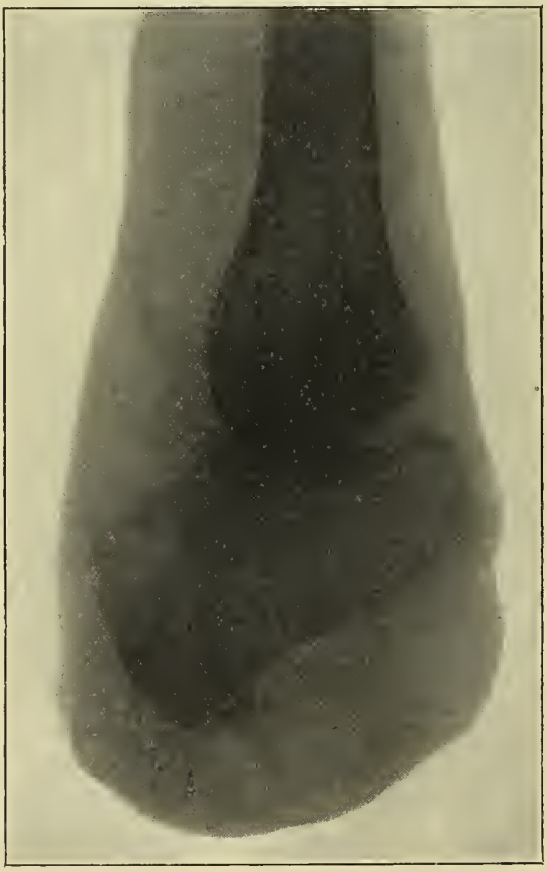
The method here given was made use of in the two cases described below for long-standing talipes equino-varus, with equinus predominating. In both cases the deformity had been untreated in the past and owing to the stretched and enfeebled condition of the extensors and the shortened and contracted condition of the flexors offered little chance of improvement without relapse, so long as an ankle-joint remained, which would allow the flexors again to overpower the extensors. The operation resembles in many respects le Fort's modification of Pirogoff's operation and may be termed "trans-calcaneal amputation of the foot."

*Details of the operation.*—For the anterior flap three points are taken as follows: half an inch below and half an inch behind the tip of the internal malleolus, a quarter of an inch below the tip of the external malleolus, and one and a half inches below the mid-point of a line joining the tips of the two malleoli across the dorsum. A semilunar flap is then cut joining these three points. The plantar flap is then cut by an incision dividing skin only, which extends from the inner extremity of the anterior flap downwards and forwards to half an inch in front of the prominence of the tubercle of the scaphoid, then transversely across the sole to half an inch in front of the prominence of the base of the fifth metatarsal, and then straight back to the outer extremity of the anterior flap. The anterior flap is then dissected up, the extensor tendons are divided, the anterior tibial and musculo-cutaneous nerves are cut short, and the dorsalis pedis artery is ligatured. The ankle-joint is then opened from the front and the foot is forcibly depressed (the equinus position greatly facilitates this stage of the operation), the internal lateral ligament is severed from its attachments to the astragalus, with the edge of the knife held close to the bone, and the anterior and middle fasciculi of the external lateral are similarly dealt with; then with the foot inverted the knife is passed from without between the os calcis and astragalus and the interosseous ligament is divided. The astragalo-scaphoid joint is now opened and the head of the astragalus is freed from the scaphoid. The body of the astragalus is next seized with lion forceps and twisted round so as to detach it from the posterior fasciculus of the external lateral ligament and the posterior ligament and so removed.

The next step is tenotomy of the tendo Achillis and all contracted fibrous tissue around it, taking great care to avoid the posterior tibial vessels and nerve. It will then be seen that the os calcis can be brought up to the lower surface of the tibia, except for the projection of the sustentaculum tali which comes into contact with the internal malleolus. With a broad gouge the cartilage is then removed from the lower surface of the tibia, working from within outwards so that the gouge is checked against the internal surface of the external malleolus, and then the malleoli are cleared of cartilage and the posterior inferior tibio-fibular ligament is removed. Next, with the foot well depressed and pulled forwards, the upper articular surface of the os calcis is cleared of cartilage either by sawing off a thin slice with a fine saw or with a gouge. Owing to the slope of this surface it is necessary to take a little bone as well from the posterior part of this surface. The sinus pedis is then cleared of all fibres of the interosseous ligament and extensor brevis digitorum. Then so much of the sustentaculum tali is cut obliquely as will allow the os calcis to fit into the hollow between the malleoli.

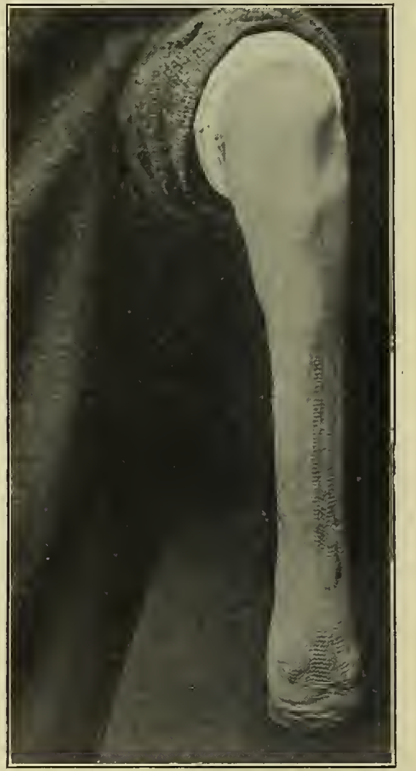
Up to this point the front of the foot has been left articulated to the os calcis for purposes of manipulation. The os calcis is now disarticulated from the cuboid and the separation of the foot is completed by cutting obliquely through the soft tissues of the sole to the margin of the skin flap already marked out. Before fixing the os calcis to the tibia the plantar vessels are tied, the plantar nerves are cut short, the tourniquet is removed, and all bleeding points are secured. About a quarter of an inch of the anterior extremity of the os calcis is then removed and the os calcis is brought into apposition with the tibia and fixed there with a six-inch excision pin driven through the sole with about two inches left projecting. A second pin may be used and passed through the tibia into the os calcis from the front and tension subsequently—i.e., after suture and dressing—kept up on the projecting ends by rubber tubing passed in figure-of-eight round them. After suture of the flaps the stump is put up preferably in plaster for a fortnight, when the stitches and pins may be removed. Plaster is then re-applied and the patient is allowed to get about with the leg flexed on a peg leg. Plaster should be continued until firm bony union has occurred and the patient should not be allowed to put the foot to the ground under three months but should continue to use the peg leg. At the end of three months an artificial foot can be fitted and gradually made use of.

Fig. 1.



The stump in Case 1 three months after operation.

Fig. 2.



The stump in Case 1 a year after operation. The ridges on the skin are due, of course, to impressions left by a coarse stocking.

Case 1. *Infantile hemiplegia involving left arm and leg.*—The patient, a man, aged 30 years, was admitted to the Metropolitan Hospital on March 31st, 1906, with the following history. When one year old he had had infantile hemiplegia which left partial paralysis of the left hand and leg below the knee. He had had no treatment in the past. The deformity of the foot had gradually increased. He had worn a high boot for the previous six months (O'Connor extension) but it had constantly given away and had not afforded him much support. He was unable to work as a labourer owing to difficulty in standing. The left arm and leg were much wasted. The foot was in the position of marked equino-varus with the dorsum directed downwards. Electrical reactions.—The left thigh was normal. The superficial calf muscles reacted to strong galvanic and faradic currents. The tibialis posticus and flexor longus digitorum reacted to very strong faradism and slightly to very strong galvanism. There was no reaction in the extensors. The peronei reacted to strong faradism and galvanism. The movements at the hip and knee were good. The left leg measured to the malleoli was one inch shorter than the right.

The operation performed on April 17th, 1906, was practically identical with the one described above except that the internal malleolus was removed and only the cartilaginous surface of the sustentaculum tali cut off. Two steel pins were used and cross tension was kept up on the projecting ends by means of rubber drainage tubing. The stump was put up on a splint for ten days and then the pins and stitches were removed. Plaster was then applied and the patient was allowed up on a peg leg. There was firm bony union at the end of four weeks. An artificial foot was fitted, and the patient began to walk on it on Sept. 8th—i.e., five months after the operation. Up to the time of the foot being fitted the patient walked about well on the peg leg. He can now walk well on the artificial foot without additional support. The stump is quite firm and has no tender spot.

Case 2. *Infantile hemiplegia involving the right arm and leg and slightly also the left leg.*—The patient, a man, aged 44 years, was admitted to the Metropolitan Hospital on June 28th, 1906. The deformity in this case was almost identical with the first but the varus was rather less marked. An additional factor in this case was some paresis of the extensors of the opposite leg with rectangular talipes. The operation was identical except that rather more of the front of the os calcis was removed as the plantar flap had been cut a little too short. When the dressings were removed the central portion of the anterior flap was found to be gangrenous and was cut away. Some blood-clot had collected underneath the flap. The tourniquet in this case was not removed until after the wound had been closed and firm pressure applied with dressing and bandage. As there is a certain amount of slack under the anterior flap this is probably an unwise proceeding in these cases. Subsequent skin-grafting produced a good scar but a little depressed in the centre and not free as in the first case. The patient commenced to walk on a peg leg five weeks after the operation, when bony union was firm and the wound was soundly healed. He began to walk on an artificial foot seven months after the operation.

*Remarks.*—1. It will be found that with the incision given the margin of the plantar incision will be about from one to two inches longer than the margin of the dorsal, so that in suturing slight puckering of the plantar flap will be necessary. Any attempt at lengthening the anterior flap at the expense of the plantar offers two disadvantages—danger of sloughing in the dorsal flap, which consists only of skin and is not too well supplied with blood, especially in paralytic limbs, and also a risk of getting the ultimate scar too near the sole. 2. At the completion of the operation the plane of the sole remaining will not be horizontal but tilted forwards and upwards at an angle which corresponds to the position of the os calcis and sole in the normal foot. 3. The tendo Achillis having been divided there is no likelihood of the os calcis becoming displaced backward and lateral displacement is prevented by retaining the malleoli. It is important to remove all cartilage and to get accurate adaptation of the bony surfaces before fixing. 4. The results of the two cases reported offer encouragement to repeat the operation in similar cases. The resulting stump is certainly as good as, if not better than, that produced by any other known amputation at the ankle. The operation should be applicable also to some cases of disease and injury in which it is possible to leave the os calcis. The accompanying illustrations are from Case 1.

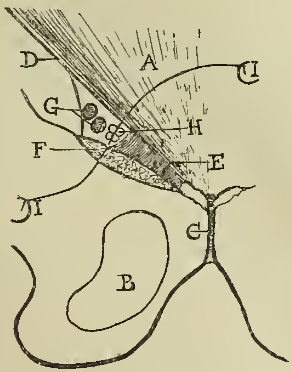
Welbeck-street, W.

# A SUGGESTION FOR THE RADICAL CURE OF FEMORAL HERNIÆ.

By J. SIDNEY PEARSON, M.A., M.B. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
LATE SENIOR RESIDENT MEDICAL OFFICER, ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, PLAISTOW, E.

ONE hears on all sides of the unsatisfactory nature of the usual attempts at the radical treatment of femoral herniæ so that the suggestion here made, if it does not appeal to the profession, can receive no worse fate than many others. Briefly, it consists in twisting the isolated sac, transfixing and tying it with No. 4 silk, and leaving the two ends of the silk long Both ends are then threaded with curved needles. One end, A, is passed twice through Poupart's ligament and then out through Gimbernat's ligament, whilst the other end, B, is buried deep in the pectineus and also brought out through Gimbernat's ligament. The ends are then tightly tied and the opening is found to be securely closed. The tied sac acts as a thick plug at what appears to be the weakest point in other radical cures.

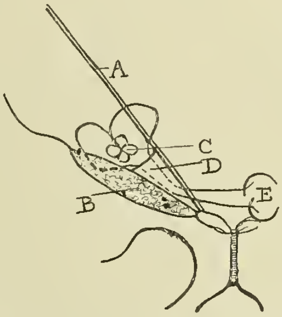
FIG. 1.



Schema of operation. A, External oblique muscle. B, Obturator foramen. C, Symphysis pubis. D, Poupart's ligament. E, Gimbernat's ligament. F, Pectineus muscle. G, Common femoral vessels. H, Sac of hernia, cut and tied. I, I, Curved needles on long suture transfixing sac.

My opportunities as resident medical officer for performing this operation have naturally been few but through the kindness of Mr. A. E. Kennedy I have operated in the above manner on two cases in females, aged 30 and 37 years, with femoral herniæ of three and five years' standing respectively. Six months in one case and four months in the other have elapsed since the operations and the wounds are quite sound with no sign of recurrence. This, of course, is no commendation for the operation. I merely wish to throw out the suggestion in case it might appeal to other surgeons of greater opportunity and experience. I may mention that this method was very easy in my own cases; I do not know how it would be in cases of strangulation or in very old people with lax tissues.

FIG. 2.



Schema of operation. A, Poupart's ligament. B, Pectineus muscle with lower suture passed. C, Stump of sac transfixed. D, Gimbernat's ligament with both sutures passed. E, Needles on ends of sutures which are ready for tying. The femoral vessels are omitted for the sake of clearness.

Sydenham, S.E.

# A CASE OF STREPTOCOCCIC SEPTICÆMIA:

## TREATMENT BY WRIGHT'S METHOD WITH A VACCINE MADE OF ORGANISMS OBTAINED FROM THE PATIENT'S BLOOD, THE INOCULATIONS BEING CONTROLLED BY THE OPSONIC INDEX; RECOVERY.

By W. GREENWOOD SUTCLIFFE, F.R.C.S. ENG.,
SURGEON TO THE ROYAL SEA BATHING HOSPITAL, MARGATE;

AND

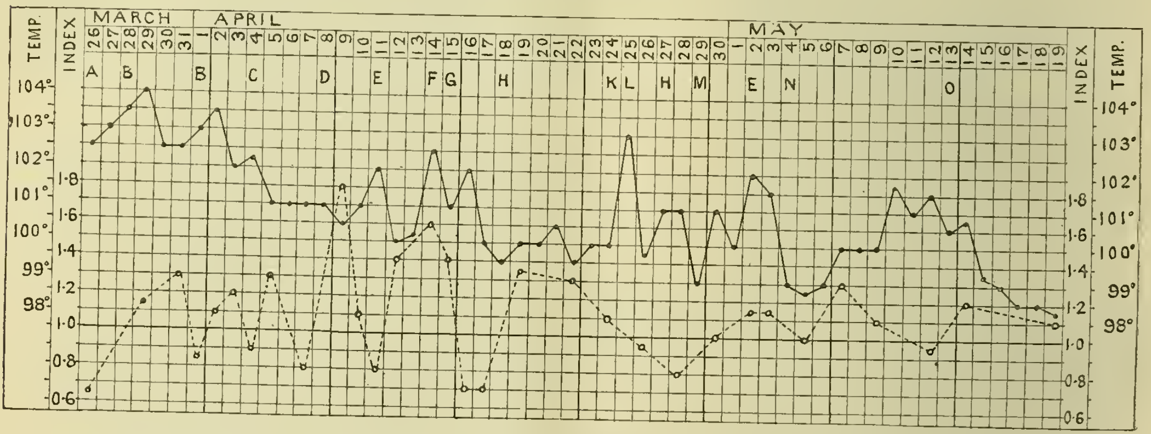
H. WANSEY BAYLY, M.R.C.S. ENG., L.R.C.P. LOND.,
DIRECTOR OF THE OPSONIC DEPARTMENT OF THE CLINICAL RESEARCH ASSOCIATION; LATE DIRECTOR OF INOCULATIONS TO THE ROYAL SEA BATHING HOSPITAL, MARGATE.

(*From the Bacteriological Department, St. George's Hospital.*)

THE patient, a lad, aged 14 years, was first seen by one of us on Feb. 28th, 1907, when the following history was obtained. A year previously he had been operated on for a breaking-down tuberculous gland of the neck. This wound healed and gave no trouble till December, 1906, when some discharge was noticed from the scar and some thickening detected beneath it. On examination some deeply situated tuberculous glands were found on the left side of the neck and a sinus discharging thin pus. Otherwise the boy was apparently in good health. On March 2nd the old scar with the sinus was excised and the wall of the former cavity and the deep glands were dissected out. The latter were more than usually adherent and the internal jugular was in their removal wounded and ligatured above and below the injury. On the 3rd the temperature rose to 102·6° F. The stitches were at once removed and the wound cavity was flushed out with biniodide solution. A gradual improvement took place until the 8th, when for the first time since the operation the temperature fell to normal. On the 12th the temperature rose to 103·4° and considerable discomfort was caused by a violent spasmodic cough, probably due to irritation of the vagus by the ligature. The cough persisted for several days and stopped on the silk ligature coming away. On the 16th the boy complained of pain high up in the *right* thigh, and on the following night a definite rigor took place. The rigors continued daily and on the 19th the temperature reached 106·2°. The pain in the right thigh continued but no hardness or swelling could be detected.

The question of vaccine treatment was now considered and a Wright's capsule of blood from the finger together with two agar tubes, one inoculated with blood obtained by pricking a cleaned finger and one inoculated with discharge from the wound in the neck, was sent to one of us. The agar tube inoculated from the blood from the finger was found to be contaminated and that inoculated from the discharge from the neck was found to contain staphylococcus pyogenes aureus. The staphylococcic opsonic index was found to be 1·1. Rigors continued daily to the 22nd, when the evening temperature was 103·6°. On the 23rd ten cubic centimetres of blood were withdrawn by venipuncture from the right basilic vein and two broth flasks were inoculated. An inoculation of 10,000,000 staphylococci was also given to the boy in case the infection should prove to be staphylococcal in origin. On the 25th some swelling was detected over the upper part of the right thigh and a free incision was made over the hip-joint and along the femur. Pus was found deep in the thigh in the track of the deep femoral vein at the apex of Scarpa's triangle and large drainage-tubes were inserted. On the same date one of the broth flasks was found to contain a pure culture of streptococcus pyogenes, while the second was found to be sterile. The boy's index against this streptococcus was taken and was found to be 0·66, and a vaccine was therefore prepared according to Sir A. E. Wright's method, and on the 28th the first dose, consisting of 10,000,000 dead streptococci, was given, the temperature then being 103·5° and the index to staphylococcus pyogenes aureus then being 1·2. The condition therefore appeared to be due to a pure streptococcus infection. On the 29th the index to the streptococcus had risen to 1·15 and on the 30th the evening temperature had fallen to 102·5°. On the 31st severe pain and some tenderness were felt in the upper part of the *left* thigh and half-drachm doses of citric acid were therefore given every four hours, with the result that in five days the left thigh was entirely free from pain or tenderness. On April 1st the index had fallen to 0·85 and the temperature had risen to 103°, and another 10,000,000 streptococci were therefore given, with the result that by the 3rd the index had risen to 1·2 and temperature had fallen to 102°. On the 4th the right leg was straightened out under an anæsthetic and a weight extension was applied to the leg. This evidently produced an auto-inoculation, as on the evening of the 4th the index had fallen to 0·9, to rise on the 5th without a dose of vaccine to 1·3, when the temperature was 101°. On the 7th and 11th the index fell below normal and 20,000,000 and 25,000,000 streptococci were inoculated respectively, with the result that the index rose to 1·8 and 1·6 on the 9th and 13th respectively. On the 14th there was a return of pain in the right leg and on the 15th the leg was again dressed and straightened under an anæsthetic, and there must again have been a considerable auto-inoculation, as on the 16th and 17th the index was 0·7. No vaccine was given on the 17th, as we hoped that the negative phase produced by the auto-inoculation would be followed by the positive phase, but as the index remained low on the 18th 12,500,000 were inoculated and the index rose to 1·45 on the 19th. On the 24th the boy was taken on the sea front in a spinal carriage and on the following day he complained of pain in the leg again and the temperature rose to 103°. Probably the moving to and from the spinal chair or the slight unavoidable jolting produced an auto-inoculation, as on the 26th the index had fallen to 0·95. 12,500,000 streptococci were inoculated on the 27th, but probably it would have been better not to have given it during this negative phase, as the index fell still further to 0·8 on the 28th, and did not rise to the normal line until the 30th, when the index to staphylococcus was also taken and found to be 1·1.

CHART SHOWING PATIENT'S TEMPERATURE AND OPSONIC INDEX.



A Abscess in right leg opened. B, Inoculation with vaccine of 10,000,000 streptococci. C and G, Leg dressed under chloroform and straightened. D, Inoculation with vaccine of 20,000,000 streptococci. E, Inoculation with vaccine of 25,000,000 streptococci. F, Pain in right thigh. H, Inoculation with vaccine of 12,500,000 streptococci. K, Out in spinal carriage. L, Pain in leg. M, Counter-opening made under chloroform. N, Free discharge from counter-opening. O, Inoculation with vaccine of 50,000,000 streptococci. Pain was felt in the left hip from March 31st to April 4th. The upper (continuous) line shows the highest temperature recorded in the 24 hours and is plotted from the lateral columns marked "Temp." The lower (dotted) line shows the opsonic index to the patient's own streptococcus and is plotted from the lateral columns marked "Index." Owing to the blood having to be sent to one of us in London the dose of vaccine was given, as a rule, about 18 hours after the taking of the sample of blood on which the dose of vaccine was regulated.

As the marked improvement in the boy's general condition pointed to a local rather than a general condition as now being the cause of the elevated temperature, in order to obtain a freer drainage than was possible from the anterior incision, on April 29th a counter opening was made at the inner side of the thigh below the adductor muscles, and a tube was passed through. Notwithstanding the free drainage the temperature rose on May 2nd to 102°, and 25,000,000 streptococci were inoculated. On the 4th the temperature fell to 99°, where it remained for three days. For the following week the evening temperature was 100° to 101·8°. On the 12th the index had again fallen to just below normal and on the 13th 50,000,000 streptococci were inoculated with the result that the index rose and the temperature fell to 99·5°. On the 17th the anterior incision had entirely healed and as the discharge from the lateral counter opening had practically stopped the tube was removed. There was no further rise in the temperature and the case progressed steadily to complete recovery.

The chief feature of interest in the case is the non-development of the second threatened focus in the left thigh and this may, we think, be fairly ascribed to the vaccine and the administration of citric acid. There was, moreover, a marked general improvement after each inoculation with the vaccine, which, except in the case of the inoculations on April 27th and May 2nd, in every case was followed by a rise in the index within 24 hours, associated with a fall in the temperature. The boy was throughout kept out of doors from morning till night. The infection evidently took place at the time of the operation, the streptococci no doubt being already present in the discharging sinus and gaining admission through the wound in the vein into the general circulation and setting up rigors and a general septicæmia 15 days after.

We have considered it advisable to record this case, as it seems to confirm in every particular the conclusions arrived at by Sir James Barr, Dr. W. Blair Bell, and Captain S. R. Douglas, I.M.S., in their report in THE LANCET of Feb. 23rd last, of the first case of streptococcic septicæmia that had been successfully treated by means of a vaccine prepared and controlled by Sir A. E. Wright's method.

In conclusion, we wish to acknowledge our indebtedness to Dr. Charles Slater, bacteriologist to St. George's Hospital, for his kindness in placing the resources of his laboratory at our disposal.

Margate.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

◆

### POLYDACTYLISM.

By WILLIAM J. MORRISH, M.D. LOND., L.R.C.P. LOND., M.R.C.S. ENG.

REFERRING to Dr. W. H. W. Attlee's case of supernumerary digits, published in THE LANCET of July 20th, p. 163, I may perhaps record the following.

On Nov. 29th, 1906, I attended a woman in her seventh confinement, the child proving to be a girl. She had previously had two boys and four girls. Both boys were normal, but the girls presented the following peculiarities as regards their hands and feet. Each child had six digits on both hands, the additional digit being situated on the ulnar side, and in the case of the three eldest having bony union with the rest of the hand; while in the two youngest the additional finger was attached by a pedicle of skin and vessels as in Dr. Attlee's case. The mother had had the sixth fingers removed from the first and second girls, but on account of her delicacy the hands of the third had not been operated on and I was thus able to see the extra members. On the right hand the finger possessed a metacarpal bone which was in relation with the carpus, but on the left side the digit was very rudimentary, though having bony connexion with the ulnar side of the little finger. The pedunculated sixth fingers of the fourth and fifth girls were removed after ligaturing their pedicles. The middle and ring fingers of the eldest girl's left hand were also webbed throughout their entire length. Their feet showed even greater variation. The eldest girl had six toes on her left but only five on her right foot, with webbing of the great, second, and third toes of both feet. The second had five toes, with slight webbing of the second and third on each foot. The third had six, with the second and third completely webbed on each foot. The fourth girl presented the greatest abnormality of any, having an apparently spatulate condition of each great toe, which on closer examination gave the appearance of a fusion of two separate toes, while in addition to this on the right foot there were two little toes apparently in relation with the fifth metatarsal, the remaining digits of the left foot being normal. The only abnormality of the feet of the newly-born fifth girl was a very slight degree of webbing of the second and third toes of each side. The father of these children had six digits on each hand and foot, with bilateral webbing of the second and third toes. He was an only child and his father and mother were quite normal as regards their hands and feet. He was not related to his wife prior to their marriage.

This remarkable case is another example of the well-established fact of the hereditary tendency of this sort of deformity, and it is noticeable that the male children should have escaped.

Streatham, S.W.

### NOTE ON A CASE OF BELLADONNA POISONING.

By H. JEAFFRESON BREWER, L.R.C.P. LOND., M.R.C.S. ENG.

IT is said that children are able to take belladonna well and do not suffer from any toxic effects, and on looking through Woodman and Tidy's "Toxicology" the only cases of poisoning in children were caused by taking large quantities of the berries. From this point of view I think the following case of what was obviously belladonna poisoning may be of interest.

To a boy, aged four years and three months, suffering from whooping-cough, I prescribed two minims of tincture of belladonna and two grains of bromide of potassium, to be taken every four hours. Within half an hour of the administration of the first dose, the mother told me, a red flush came out round the child's neck and on his chest. The mouth seemed dried up and the child was slightly delirious, but in about an hour he got much better. A second dose of the mixture was given four hours after the first, and again in half an hour the child suffered in the same way and was violently sick. Then I was sent for. On arrival I found the child almost covered with a scarlatiniform rash, chiefly on the neck and chest; the pulse was rapid (120) and very feeble; the mouth was dry; the pupils were fully dilated, a narrow ring of the iris only being visible; and the temperature was slightly raised (100° F.). The child was only semi-conscious and was with difficulty roused and could not speak. On administering brandy consciousness and speech returned, the pulse slowed, and the pupils began to contract. When I saw the child on the next morning he had quite recovered, except for a very faint rash which entirely disappeared within 24 hours.

Considering the very small dose administered I think this idiosyncrasy worth recording.

Dalston, N.E.

### NOTE ON THE EFFECTS OF BORAX ON INFANTS.

By JAMES CHARLES McWALTER, M.D. BRUX., L.R.C.S. IREL., D.P.H.

THE question of the propriety of employing borax or other compounds as a preservative for milk or other foods is one which cannot be decided by the mere *obiter dicta* of the medical man. Powerful commercial influences are concerned in the use of preservatives in food and it is not sufficient for a medical man absolutely to condemn the practice if he finds himself in the witness box under the examination of an able King's counsel. This gentlemen will doubtless demand specific instances of the harmful effects, either from the witness's experiences or from credible works. These instances seem to be particularly scanty in British journals, although Dr. Wyley has done a lot of work on the subject in America. I wish, then, to record a case of chronic borax poisoning which is just now under my care and which seems as conclusive of the evil effects of the drug as a single instance can possibly be, for in this case the mother suckled the infant all the time and gave it no other nourishment.

The infant was two months old when I saw it and had been born a strong, healthy child. A fortnight after birth it developed thrush, for which borax and honey were applied. The child seemed to be relieved of the thrush by this remedy and developed such a liking for it that it was applied most liberally—from two to three four-drachm boxes having been used every week from the second to the eighth week. During this time a progressive wasting had set in, and when I saw the infant there was a marked erythematous eruption on the palmar aspect of the hands and on the plantar aspect of the feet, with distinct desquamation between the toes and the fingers; well-marked urticarial eruption was present on the arms and forearms, but the region between the legs was notably free from eruption. There were tumefaction and tenderness of the abdomen, and a raw, pinky redness of the lips, tongue, palate, and throat, with vomiting and looseness of the bowels. The face had a wizened look, the skin was soft and brownish, the eyes were bright, and the joints, especially the knees, tender, swollen, and somewhat stiff. There was no evidence of syphilis or other cause for the wasting and rash except the borax, of which the child had about ten grains every day for six weeks. On stopping the borax and confining the infant to the breast milk, together with a little raw beef-juice, it appears to be recovering rapidly.

Dublin.

"MINER'S PHTHISIS."—At a recent meeting of the Redruth (Cornwall) board of guardians the Local Government Board inspector (Mr. J. Preston Thomas) referred to "miner's phthisis" and its effect on the pauperism of the union. He mentioned that nearly 350 cases of pauperism were due directly to this disease, or about one-quarter of the whole pauperism in the Redruth union.

# Medical Societies.

MEDICO-LEGAL SOCIETY. — The sixth annual general meeting of this society was held on July 23rd, Dr. W. Wynn Westcott, Vice-President, being in the chair.—Satisfactory reports were presented by the honorary treasurer and by the honorary secretaries and the following officers were elected for the coming year:—President: Mr. Justice Walton. Vice-President: Mr. John Troutbeck. Honorary treasurer: Mr. Walter Schröder. Honorary secretaries: Dr. Stanley B. Atkinson and Mr. Digby Cotes-Preedy. Auditors: Mr. Hubert Sweeney and Dr. F. S. Toogood. The following members were elected to fill vacancies on the council: Mr. R. Henslowe Wellington, Mr. J. Howell Evans, Dr. W. H. Willcox, and Dr. C. H. Wise.—The meeting then proceeded to discuss a paper by Mr. George Pernet on the Teaching of Medical Jurisprudence in Paris and in London.—In the subsequent discussion Dr. Wynn Westcott suggested that a similar paper dealing with German practice would be a valuable contribution. His recollection and experience led him to consider that the Morgue was a wretched, miserable, and depressing place in comparison with the mortuaries attached to his coroner's courts, though he was forced to admit that the scientific work done was of an inferior quality in the London buildings. Personally he had not missed refrigerating apparatus. He regretted that students were encouraged to analyse merely "faked" toxicological solutions, since if teachers applied to coroners they could be supplied with viscera containing the real thing from poisoned bodies; further, subject to certain regulations, he would like to see medico-legal post-mortem examinations available for teachers to use in instructing their pupils. The regulations would have to prohibit the possibility of the operators being prompted by interested parties.—Mr. Troutbeck thought that the province of a medical man was the exercise of his powers of observation rather than the deduction of legal conclusions. He noted that in Paris the study of the bodies of the living was associated with the study of post-mortem results. In London the attention paid by medical men to methods of identification was slight; this was an important matter where insurance moneys were involved. He thought that a freezing chamber attached to a mortuary was not only useful for purposes of delayed identification but also as a preventive against pathological changes in decomposing viscera. Although 60 per cent. of the inquests of London were based upon post-mortem dissections nothing further was done with the valuable material. He agreed that a large practical and official school of medical jurisprudence was necessary, and he believed that it would arise from the medical rather than from the legal profession. Given the opportunity and need experts of the highest skill would result.—Mr. Henslowe Wellington stated that at the Westminster Hospital Medical School he had striven to make the study of forensic medicine more real and practical than was usual. He had arranged that medical students should be notified as to when medical men were making necropsies at the nearest mortuary and he had gained the coroner's permission for the pupils to be present; unfortunately the times which were fixed by general medical practitioners were unavoidably inconvenient to busy students. He had also, with the consent of Sir Edward Henry, Chief Commissioner of the police, taken his class to a demonstration on the methods of finger-print identification at the Criminal Investigation Department, Scotland Yard. Further, he had taken students to the Central Criminal Court to show them the methods of criminal procedure and of giving evidence. He also announced in his syllabus of lectures that students of law were admitted to his course of lectures.—Mr. Howell Evans was convinced from experience in teaching operative surgery that bodies should be frozen, notably in order to prevent the generation of volatile bodies which, by their presence, would raise an element of doubt in the toxicological examination of minute quantities of poisons. He thought that toxicological chemistry came too early as a branch of study in the medical curriculum; the anatomy of the organs likely to be affected by the poison should be known. Similarly post-mortem work should not be enforced upon students until an appreciation of clinical and pathological entities was present. He would insist on law students having a two months' course of medical jurisprudence.—Dr. Willcox regretted the lack of thoroughness with which toxicology and forensic medicine were considered in this country; the position was largely the result of the crowded curriculum, for students seldom studied beyond the confines of the set syllabus. Toxicology, when met in a practical case of criminal poisoning, was a very technical and difficult exercise, and no student without previous prolonged training could ever dare to pose as an expert analyst in these matters. Most lectureships on the subject in London were honorary posts and until the hard cash obstacle was removed he doubted whether even the University of London would consider the foundation of a central School of Legal Medicine. He thought that the attendance of medical students at post-mortem examinations should be more seriously imposed.—Dr. Cowburn said that there was little teaching of morbid anatomy from the medico-legal standpoint in this country; the examination of external appearances was seldom full and complete. The remedy was to institute a post-graduate diploma in forensic medicine; even then he feared that the inducements to adopt this side of the profession would be very few as there was no great demand for this class of skilled knowledge.—Mr. Pernet, in reply, said that medical men should be encouraged to keep up their knowledge of post-mortem pathology and thereby stimulate their medico-legal interest. Every medical man should at least know how to put up viscera suspected of containing poison in such a way as to aid the toxicologist. He was surprised at the low rate at which pathologists were remunerated. To sum up the whole matter, he would urge that medico-legal examinations should be conducted in a medico-legal fashion.

# Reviews and Notices of Books.

*Some Problems of Existence.* By NORMAN PEARSON. London: Edwin Arnold. 1907. Pp. 168. Price 7*s.* 6*d.* net.

THIS book is an exposition of the author's philosophy of existence which is evidently written for the large class of thinking men with some scientific knowledge but no technical training in moral philosophy, and as such it should appeal to many of our readers. It is hardly within the province of a purely medical journal to review critically a work that is more than half theological, but it is written with such evident earnestness of purpose, and the author expresses his theses and conclusions with such lucidity and dialectical ability, that we feel justified in bringing it to our readers' notice.

Mr. Pearson starts by postulating as the working hypothesis of his theory the existence of a Deity, the personal immortality of man and a divine scheme of evolution proceeding under the sway of an inflexible order. From these premisses he elaborates a theistic scheme of religion which is boldly conceived and fearlessly expressed. There are many minds that will grant these postulates—for without the first two no religion in its full sense is possible and to deny the last is to deny modern science—but which have a too hazy and colourless conception of what they do "believe." The book offers a very strong and roseate explanation of some of the great mysteries of existence, and the man who has come under such chilling influences as the querulous wailings of the school of Nietzsche, or who still applies to the belief in predestination the awful consequences taught by Calvin's followers, may find in these hopeful pages an excellent moral corrective and tonic. The author's scheme is perhaps a little too highly polished on its speculative side, although he does not claim to be always supported by ascertained facts; in this connexion we think he would be well advised to refrain in a future edition from adducing Mr. Burke's "radiobe" experiments even as an auxiliary piece of evidence in support of his contentions, since Mr. Burke's ingenious speculations on the interpretation of the phenomena which he made known to the scientific world would seem to have been refuted by Mr. W. A. Douglas Ridge at the Royal Society. Mr. Pearson's metaphysical speculations are always stimulating and not seldom beautiful in their expression, as witness his chapter "After Death," which is a veritable prose poem, even though, as some may think, it is "too good to be true." In this and other parts of the book the ultimate destiny of man is set upon a plane that almost transcends intellectual comprehension, but in such chapters as that in which he makes out a powerful case for the deterministic view of life and at the same time demonstrates that it is not really incompatible with the doctrine of moral responsibility he succeeds notably in unfolding highly philosophic concepts in a way to be understood clearly by readers not trained in such subtleties. Perhaps the most original hypothesis is that in which he seeks to explain the Existence of Evil; the thesis is closely reasoned and far more satisfying than many more orthodox explanations and his treatment of evil as a valuable evolutionary force, if less original, is as well expressed. The chapters on Right and Wrong and the Sanction of Morality fall into line with current rationalistic thought, but the author is always careful to insist that the discovery of the machinery by which such ends are wrought should only serve to strengthen the faith in the inflexible divine purpose acting through such means.

Those who enjoy the full faith in "revealed religion" will, if they read Mr. Pearson's book, doubtless disagree with some of his conclusions, but they cannot quarrel with the moderation with which he states his case; and to many who are seeking in vain an answer to the eternal question, "What is Truth?" his pages will present a scheme of philosophy that may well satisfy their intellect and at the same time afford them the basis of a real and helpful "Natural Religion."

*The Children of the Nation: How their Health and Vigour should be Promoted by the State.* By the Right Hon. Sir JOHN E. GORST. London: Methuen and Co. 1907. Pp. 297. Price 7*s.* 6*d.* net.

THIS volume is evidently to be taken not as a standard contribution to sociological literature but as an attempt to open the eyes of educated and thoughtful people to the many and terrible causes of degeneracy that are at work amongst the children of the poorer classes and to suggest some means for their remedy. Its publication was some months ahead of the present International Congress in School Hygiene and it can be recommended to the attention of all who are interested in the success of the objects for which that Congress is convened. As such the book deserves wide recognition, for it contains much food for reflection. The argument hangs practically on these two texts, the one quoted from a working man: "There are some folks whom society has got to pay for either at the beginning or end of their lives, and it is much cheaper to pay at the beginning"; the other the author's own dictum: "The child is worth a great deal too much to be used for improving the moral character of the parent." In other words, if the State finds a starving child its duty is to feed him, even at the risk of undermining the parents' sense of responsibility, with which pious opinion few will cavil. The very vexed question of the universal State feeding of school children Sir John Gorst discusses fully, and approves the provision of a nourishing dietary at the public expense in the case of destitute children and at the parents' expense where they can afford it. He points out fully the delinquencies of boards of guardians in shirking their plain duty of feeding starving children under the present law and also in evading the responsibilities of providing free medical treatment for poor people by the means of casting discredit on even worthy applicants for such relief. The need of medical supervision of the conditions of child life and education, including routine physical examination of all elementary school children, is warmly advocated, and also the advantages of properly supervised crèches, as well for their value as domestic training schools for girls over 15 years of age as for their advantages to mothers and children. The common diseases of children, hereditary and acquired, are touched on and the common-sense remedies for them are pointed out; the most radical step suggested is the protracted segregation in hospitals of persons suffering from syphilis. The vital questions of infant mortality and infant feeding receive fairly adequate attention; these problems cannot be forced too insistently on the public. The present conditions of child employment are criticised with full knowledge. The author goes wide of his subject on several points but the reader who knows nothing of the admirable system of compulsory insurance against sickness and old age that was Bismarck's splendid legacy to the working classes in Germany will forgive this digression. The account of the Forest School at Charlottenburg, where ailing children are tended and taught, forms another severe object-lesson from the same country. The indictment of our local authorities for their supineness in administering the existing public health enactments includes a statement that will surprise many—viz., that it is within the power of any local authority to build and to administer a general hospital for the public use out of public money.

Sir John Gorst claims that free medical treatment of the working classes would be no more socialistic a measure than is the present provision of free hospitals for infective diseases, but he does not suggest a means of finding the money to pay the medical men, and in his account of the friendly societies we could have wished for a mention of the inequitable terms of remuneration which they afford to our profession. On the whole the work leaves a feeling of dissatisfaction at the position of England in this great matter of child-rearing as compared with other civilised countries.

*Theories of Chemistry.* By SVANTE ARRHENIUS. Edited by T. SLATER PRICE, D.Sc., Ph.D., F.I.C. London: Longmans, Green, and Co. 1907. Pp. 212. Price 5*s.* 6*d.* net.

THE name of Svante Arrhenius, the distinguished director of the Nobel Institute, Stockholm, is honoured by chemists of all nations as belonging to one who has enriched very considerably our knowledge of the nature of solution. To him we owe largely the development of the theory of ionic dissociation, a theory which has placed many physiological phenomena in a new and important light. His researches led him to suppose that chemically active molecules are identical with electrically active ones, and therefore that the conductivity of an acid was to be regarded as a measure of its strength. Ostwald, another brilliant investigator in the same field, tested this speculation with the result that he pronounced Arrhenius's view to be in fact a law. Finally, the subject was pursued further with most fruitful results which culminated in the formulation of general laws for dissolved substances. The application of these laws in plant and human physiology is of the utmost interest. The power possessed by plant cells of sucking in pure water from a surrounding weak salt solution is a case in point. When the solution reaches a certain concentration equilibrium is established and no water enters into the cells; the solution and the cell-content are then said to be "isotonic." If the solution is still more concentrated water passes from the cells to the solution, and the protoplasm contracts and does not fill out the surrounding cell-wall. Similarly, the red blood corpuscles behave like the plant cell. When the solution surrounding the red blood corpuscles is too weak they give up their colouring matter or hæmoglobin to the solution. When the solution is too strong the corpuscles shrink and sink to the bottom.

We have chosen these examples because they illustrate how faithfully chemical research in this direction is serving in the interests of medicine in the hands of such giant investigators as Ostwald, Kohlrausch, van 'tHoff, and the author of the book before us. Nor do we forget those illustrious men of the past who well and truly laid the foundation of the science upon which our modern conceptions are constructed. The book is a series of lucid lectures on a difficult subject.

---

*Treatment by Hypnotism and Suggestion, or Psycho-Therapeutics.* By C. Lloyd Tuckey, M.D. Aberd. Fifth edition, revised and enlarged. London: Baillière, Tindall, and Cox. 1907. Pp. 418. Price 10*s.* 6*d.* net.

Sir Francis R. Cruise contributes an interesting introductory chapter to this valuable work by Dr. Lloyd Tuckey, describing how, with a prejudice against hypnotism, he began to study the subject at first from books and later at the cliniques of Dr. Liébeault and Dr. Bernheim at Nancy, and of Professor J. Charcot and others at Paris. He soon became so convinced of the value of hypnotic suggestion as a therapeutic agent that he began to employ it in his private practice and now advises other physicians to do likewise. Though 18 years have elapsed since the publication of the first edition of the book under review there is still much prejudice against hypnotism in medical circles in this country. This is due probably to the fact that hypnotism is scarcely mentioned in the medical curriculum, and also because it is associated in the minds of many with quackery and foolish public demonstrations. The danger of these public exhibitions has, as Dr. Tuckey points out, been recognised abroad, and in Switzerland, Holland, and France they are prohibited by law. It is to be hoped that the Society for the Study of Psycho-Therapeutics, which has been newly formed in England with Dr. Tuckey as president, will be the means of introducing a similar law into this country.

The book is written so lucidly and pleasantly that it is difficult to lay it down. Many cases are described, both of failures and successes, and in a future edition it would be helpful to the reader if the headlines of the pages indicated their contents; at present, if the reader desires to refer to a case he has to glance through the whole book to find it. Some rearrangement of the matter would also be of advantage. Chapters VI., VIII., and IX., which deal with the scientific explanations of hypnotism, might be condensed and Chapter VII., which breaks in upon the line of argument, might be made to precede or to follow them. Dr. Tuckey's book has now grown large enough to be able to dispense with the description in Chapter X. of 31 cases of other medical practitioners, and we trust that when this chapter is abbreviated the author will omit the case of syphilitic retinitis to which we objected in our review of the fourth edition.

The question of the use of hypnotism in organic disease is discussed more fully on pp. 200 et seq. than on the page (390) mentioned in the index. The author states: "No physician will have the temerity to maintain that destroyed lung tissue can be restored, or that liver cells spoilt by cirrhosis can be replaced. But there are stages in a disease short of the dissolution of tissue in which ...... we may hope for *restitutio ad integrum*. ...... We can also afford relief by removing symptoms ...... as in incurable diseases, such as cancer."

Treatment by suggestion is to-day so widely believed in by the public that every medical man should know something about it if only to answer the questions put by his patients. The recent interest in psychical subjects and the power of mind over matter and the rise of various faith-healing sects have led to a prolific production of pseudo-scientific writings by irresponsible persons who are regarded as authorities by the laity. We therefore heartily welcome this new edition of a book on healing by suggestion which is scientific, careful, and written with the candour and adherence to fact which are characteristic of the genuine searcher after truth. We consider that this unprejudiced study of an important subject should be in the hands of every medical man.

---

*Surgical Instruments in Greek and Roman Times.* By John Stewart Milne, M.A., M.D. Aberd. Oxford: The Clarendon Press. 1907. Pp. 187 and 54 plates. Price 14*s.* net.

It is a matter for congratulation that the first description of the surgical instruments of the ancients which has been published since the recent discoveries of new works of classical literature and the great increase in the number of specimens of such instruments themselves in museums and private collections should have been produced in our country. This work by Dr. John Stewart Milne provides a very able if not entirely complete account of almost all the known specimens of Greek and Roman surgical instruments, and gives very adequate illustrations of the uses to which they were applied by extracts from the classical medical authors, accompanied by intelligible translations of their remarks into English, a matter of no small difficulty. He also gives a commentary upon the citations themselves, and describes, so far as possible, the instruments, assisted by numerous reproductions of photographs, and the manner in which they were utilised.

As he points out in his preface, many interesting operations described in detail in the classic authors were rendered obscure or even unintelligible because we were ignorant of the shape and action of the instruments they used. He specially instances the vaginal speculum, to which Paulus Ægineta devotes a long chapter well known to classical scholars, but it was impossible to appreciate properly his explanation of its use until specimens of the ancient instrument were found. Dr. Milne does not, however, appear to be familiar with Dr. Deneffe's treatise, "Le Speculum de la Matrice à Travers les Ages," treating of this special subject, and giving illustrations of several instruments for dilating the vagina. It is doubtful, however, whether a mirror ever formed part of the ancient apparatus, although Dr. Deniffe thinks it was so.[1] Dr. Milne does not in his illustrations show, or in his work discuss, the ancient mechanical contrivances for the reduction of deformities or the adjusting of dislocations and fractures, such as splints or pads, neither does he more than allude to the special vessels which, in antiquity, were used for containing unguents and medicaments, but to have done so would have been outside the intention of his book and may well be left for another work. He gives, however 54 excellent heliotype plates, many of them presenting from six to eight different surgical instruments. Unfortunately, the book contains no list of these plates or table of their contents, and so in doubtful cases their uses can only be ascertained by searching for the reference to the plate in the body of the book. The introduction gives a summary of the chief medical authors of classic times, commencing with the Hippocratic collection, but omitting the papyrus manuscript of the Iatrica of Menon which has been adequately edited by Diels. Special mention is made of the seventh book of Celsus, which gave a detailed account of the surgical school at Alexandria and describes the instruments used therein, many of which probably were copied from those known to the ancient Egyptian surgeons. The summary of ancient medical writers includes those of

---

[1] The fragments of a circular mirror were found together with what appears to be a surgeon's lancet, in what is believed to be the tomb of a medical man at Wroxeter.

Roman times and also mentions the most important early Arabic works.[2]

Before proceeding to describe the instruments themselves a chapter is devoted to the materials of which they were made, which most frequently was bronze. Iron was commencing to be used for them in the age of Hippocrates who speaks of cauteries being made of it. Iron instruments, however, of all kinds have necessarily almost invariably perished by oxidation and so it is not surprising that of the innumerable cauteries that must have existed few are ever found, though some made of copper and some of brass have survived. Two scalpels from Pompeii are of the latter metal, containing 25 per cent. of zinc. Leaden sounds and tubes for intrauterine medication are spoken of by Hippocrates, or in writings of his school, and later authors refer to leaden tubes for insertion in the rectum and vagina to prevent cicatricial contractions and adhesions after operations. Gold was also used; Priscianus advised it for cauteries for stopping hæmorrhage of the throat and Hippocrates used it as a dental support in an operation necessitated by fracture of the jaw. The Athens Museum possesses a forceps of silver and others are known of this metal. Hippocrates describes a uterine syringe with a silver tube and Albucasis mentions silver catheters.

The chief sites of the discovery of ancient medical instruments have been Pompeii and Herculaneum. In the former city a physician's house and at least two chemists' shops have been excavated. Another large find was at a Roman military hospital at Baden. It contained 14 rooms and a colonnaded portico for the patients. Sporadic relics are those contained in the tombs of medical men. One such collection may be seen in the Museum at Namur. The instruments discovered find their way into various museums and Dr. Milne gives a list of these, but appears to be unaware of the magnificent collection accumulated by Dr. Deneffe which is stored in the École du Génie Civil, Rue Plateau, Ghent.[3]

Dr. Milne commences his account of the instruments, of which examples are known, with the knives, and ten of the plates are occupied with specimens of various kinds. A common practice was to make one end of the instrument into a weapon of another kind; thus many knives are united to a scalpel, whilst some lithotomy knives have a hook at the other extremity to extract the stone after the perineal incision was made. Chapter IV. is devoted to the probes; these frequently had a spatula at the other end. Several bifurcated probes are shown but no example of a three-pronged one is known which the Aldine edition of Celsus makes him mention. The chapter upon ancient forceps follows and describes those for epilation, the polypus forceps, and the vulsellum, and those for the uvula, and the pharyngeal forceps, and illustrations of all are given. The accounts of bleeding cups, clysters, and bone and tooth instruments are very complete. The *βελουλκόν*, a kind of forceps for extracting the points of weapons from wounds, is described from Paulus Ægineta and then illustrated by the fresco of Æneas wounded, found in a house at Stabiæ, where Iapix the surgeon is withdrawing the weapon by means of a long forceps with crossed levers. The chapter upon gynæcological instruments is of much interest. The question is debated as to whether the Greeks and Romans ever had an instrument for extracting the child alive and that is decided in the negative. Of course, some of the traction hooks and toothed forceps may have withdrawn the infant mutilated but living. The bibliography does not mention the great French "Dictionary of Greek and Roman Antiquities," by Daremberg and Saglio, published by Hachette et Cie, in which much information on the subject will be found, but the omissions in the work are few; it is a most useful survey of the subject and we hope a second edition will soon be required and that it will be translated into other European languages.

## LIBRARY TABLE.

*Catholic Churchmen in Science.* By JAMES J. WALSH, M.D., LL.D. Philadelphia: The Dolphin Press. 1907. Pp. 221. $1 net.—Dr. Walsh has collected a series of short sketches of the lives of Catholic ecclesiastics who have laid foundation-stones in different branches of science with the expressed intention of refuting the oft-heard contention that between the scientific and religious minds there is an impassable gulf fixed. No unbiassed reader of his book can deny that he has well fulfilled his purpose; indeed, a capitulation of his chapters would be sufficiently convincing to anyone even slightly acquainted with the history of science, for they include the honoured names of Copernicus, Basil Valentine the chemist, our own Linacre, Father Kircher, S.J., Bishop Stensen, anatomist and geologist, Abbé Haüy, the first crystallographer, and lastly, a name that succeeding generations will hail as one of the foremost pioneers of biological science, Abbé Mendel. That great and unassuming man's splendid research in heredity conducted during patient years in his monastery garden at one time with a display of religious zeal that brought about his election as abbot is incontrovertible proof of the author's thesis. A lucid epitome of his work is given and that of the other masters of science is as well summed up. All English medical men should at least know something of Linacre, fellow and peer of Erasmus and Colet and pious founder of our College of Physicians; it will be news to many that in later life the religious life led him to abjure his well-earned worldly honours. Whilst in sympathy with nearly all of Dr. Walsh's claims we can scarcely pass unchallenged his ingenious suggestion that Galileo's persecution was brought on himself by his irritating habit of upholding his opinions over-strenuously and inopportunely; had he never spoken of anything else his message should surely have excused him those epithets! The omission of Roger Bacon from the list of great scientific ecclesiastics is a little surprising.

*Materia Medica.* By W. HALE WHITE, M.D. Lond., F.R.C.P. Lond. Tenth edition. London: J. and A. Churchill. 1907. Pp. 692. Price 6*s.* 6*d.*—When a book has reached its tenth edition there is but little to say about it. Dr. Hale White's work treats, in addition to Materia Medica, of Pharmacy, Pharmacology, and Therapeutics. It is one of the best of the smaller treatises upon the subjects in question. We would suggest that in the next edition the warning rightly given under the head of Strychnine as to its incompatibility with the bromides and the iodides should be repeated in the list of incompatibles given under the heading of the two last-mentioned preparations. A combination of a bromide with a strychnine-containing preparation is both useful and commonly prescribed, but the two drugs should always be administered separately. In this way there is no danger of strychnine poisoning occurring.

*Synopsis of the British Pharmacopœia, 1898.* By H. WIPPELL GADD. Sixth edition. London: Baillière, Tindall, and Cox. 1907. Pp. 227. Price 1*s.* net.—This is a useful little book, as it gives in a handy form the mass of details contained within the pages of the British Pharmacopœia. In addition to the synopsis the present edition contains the poison laws for both Great Britain and Ireland. In one respect at least the Irish schedule is superior to the one for Great Britain, for in Ireland phosphorus and all preparations containing it in a free state are scheduled as poisons. Were this the case in Great Britain a stop would be put to the sale of quack remedies containing free phosphorus, which are widely advertised in the daily press, and we presume widely bought by the public. Another drug scheduled as a poison in Ireland is sulphuric ether, which used to be commonly used in the north of Ireland with a view to obtaining rapid intoxication.

---

[2] The new inscriptions, found at Ephesus, recording the acquisition of prizes by successful medical students, who wrote theses upon special subjects, mentions a class whose monographs were devoted to surgical instruments: both those already known and suggestions for new ones.

[3] The curator is M. von Hammer, 49, Rue van Hulthem.

*A Handbook to the Workmen's Compensation Act, 1906.* By G. F. EMERY, LL.M., Barrister-at-Law. London: Bemrose and Sons. 1907. Pp. 102. Price 1*s.* net.—This handy exposition of the most prominent measure of the present Government will prove a useful guide to the intricacies of the Act. Many sorts of employers who have not fully mastered its clauses would do well to study them in this little book. If it served no other good purpose it would be a salutary reminder of the urgent necessity for insurance against its penalties. It is essential for practitioners in general to be familiar with its provisions, and they may here find them clearly set forth and explained as far as they may be at present.

*Low's Handbook to the Charities of London.* London: Eliot Boothroyd. 1907. Pp. 288. Price 1*s.* net.—The fact that this handbook has attained its seventy-second year of issue is sufficient proof of its utility. Information is given about over 1200 charitable institutions which is thoroughly trustworthy. A short historic sketch of St. Bartholomew's Hospital is included in the preface of this edition.

*Police Surgeon's Emergency Guide.* By C. GRAHAM GRANT, L.R.C.P. & S. Edin. London: H. K. Lewis. 1907. Pp. 77. Price 2*s.*—Mr. Grant has compiled a valuable little book, one, moreover, which not only police surgeons but other general practitioners, more especially resident medical officers in hospitals, will find most useful. His hints and experiences on the all-important questions of "Drunk or sober?" "Drunk or dying?" are interesting. We note that under the heading of Camphor Poisoning he says: "For treatment see appendix." We were unable, however, to find any further mention of camphor. Mr. Grant also has the good sense and the candour to tell his readers how and where he made mistakes, and though it is most easy to learn from our own mistakes it is only a little less easy to learn from the mistakes of others. "If," says Mr. Grant, in discussing the question of the opinion which the practitioner gives on the question of how long life has been extinct, "you are wrong, you will look a fool, and if right a wise man. The author has done both." One omission we hope to see filled up in the future editions of this book which we have no doubt will be called for, and that is the omission of syncope as a cause of death in bodies found in the water. Also on page 69, in mentioning blood stains, Mr. Grant, after giving directions for the guaiacum and peroxide of hydrogen test, says "the Prussian blue will be seen." We suppose that he means the colour so called, but Prussian blue in chemistry is a substance and not a colour, and, moreover, to our eyes the blue colour of the guaiacum test is not Prussian blue but rather the blue of perchromic acid. Possibly, however, Mr. Grant's intimate association with the police has given him a special affection for the colour in question. Everyone will remember Leech's omnibus driver addressing the policeman as "Vell, my Prooshian Blue!" But these two slight blemishes notwithstanding, we congratulate Mr. Grant upon his book.

## JOURNALS AND MAGAZINES.

*The Edinburgh Medical Journal.*—In the July number is published an oration delivered before the Medical Society of London by Dr. G. A. Gibson on the Cause of the Heartbeat, in which he criticises the accepted view that the movements of the heart are due to the intrinsic properties of its muscular substance and argues in favour of nervous influence as the effective cause. Mr. H. Alexis Thomson writes on Differentiation of Partial from Total Transverse Lesions of the Spinal Cord, and Mr. William Guy on the Administration of Gas and Ethyl Chloride for Anæsthetic Purposes. Dr. H. Douglas Wilson deals with the Signs and Symptoms of Mucous Colitis and enumerates the many troubles arising in other parts of the body besides the intestines, such as arthritis and mental and circulatory disturbances. Mr. K. W. Monsarrat writes on Renal Sarcoma in Children and tabulates the recorded cases of the affection, which afford distinct encouragement to operate; and Dr. G. A. Gordon as the result of observations on a performer who gave an exhibition of prolonged club-swinging concludes that gentle exercise tends to raise the blood pressure but violent exertion to reduce it.

*The Scottish Medical and Surgical Journal.*—The July number of this journal contains a very instructive article by Mr. Charles W. Cathcart on the Use of Massage and Movement in the Treatment of Fractures. The change which has recently taken place in this branch of surgery is very remarkable and the advantages of the new methods are beyond dispute. A paper by Dr. J. S. Fraser and Dr. J. D. Comrie calls attention to peculiarities in the mode of conveyance of infection in epidemic cerebro-spinal meningitis. Here school epidemics are unknown, second cases are rare in one house, and cases introduced into scarlatinal wards do not lead to further infection. They show that meningococci haunt the naso-pharynx and are conveyed by adults to children; hence it is advisable to isolate all "contacts" and to examine their nasal and pharyngeal cavities bacteriologically, only allowing them out of quarantine when the organisms have disappeared from these parts.

*The West London Medical Journal.*—The July issue of this journal opens with the Cavendish lecture, delivered by Mr. C. R. B. Keetley on the Conservative Surgery of the Abdomen, which was published in THE LANCET of June 29th, p. 1761. Mr. Richard Lake writes on the results of nasal obstruction as it affects the pharynx, the ear, the larynx, and other parts. Mr. George Pernet contributes a learned paper with an extensive bibliography on hæmorrhagic rashes, in which the complexity of the problem presented by these affections is pointed out and attention is drawn to the coexistence of bacterial infection in many of them. Mr. Leonard S. Dudgeon reports a case of poisoning by antikamnia, in which the livid blue colour of the patient's skin was remarkable.

*St. Bartholomew's Hospital Journal.*—The July number contains some clinical notes on pericarditis by Dr. Samuel West and a series of "Pædiatric Aphorisms" by Dr. William P. S. Branson, both of which articles are well worthy of study. Dr. J. G. Gibb records two cases of traumatic coxa vara illustrating the association of adolescent coxa vara with slight injuries, the long interval which may elapse before the development of any severe disability, and the occurrence of a stage in which the limitation of movement is far greater than that produced by the bony deformity, being caused by muscular fixation.

---

CARDIFF INFIRMARY.—The foundation-stone of the new out-patient department of this infirmary was laid on July 30th by Sir William T. Lewis and after the ceremony an address was given by Mr. Edmund Owen, who spoke in high terms of the good work which was being carried out in the institution. The cost of the extension is estimated at £8000, a sum which has been already subscribed. It is anticipated that the larger scheme for providing an additional pavilion will also be realised. One half of the estimated cost of £30,000 has already been promised and with the trade of the district in its present flourishing condition there ought to be no difficulty in raising the remaining amount. The latter project includes provision for 70 more beds, a new gynæcological operating-room, lifts to connect the wards on the first floor, and a clinical laboratory, museum, and new post-mortem room.

### THE

# BRITISH MEDICAL ASSOCIATION.

## MEETING AT EXETER.

THE Science and Education Committee of the National Temperance League held its annual breakfast in the Royal Public Rooms at Exeter on the morning of Thursday, August 1st, at which some 160 members of the British Medical Association were present. The Mayor of Exeter, Mr. W. H. Reed, presided, and was supported by, amongst others, Dr. Ransom Pickard (Sheriff of Exeter), Dr. Henry Davy, Dr. R. A. Reeve of Toronto, the Archdeacon of Exeter, Sir John Moore, and Mr. W. McAdam Eccles, who subsequently took the chair on the departure of the Mayor for another engagement. A statement concerning the evolution of scientific temperance was read by the secretary of the league, Mr. John T. Rae, in which he said that while recognising that the medical administration of alcohol in scientific doses as an instrument of precision was one wholly for the determination of the profession, the National Temperance League was convinced that the evils of intemperance could only be thoroughly eradicated by the application of preventive measures to the present and rising generations. With the adult of to-day the issue joined was between abstinence from alcohol and its moderate use. The former was abundantly sustained by the scientific evidence already available and by the daily growing experience of its value in resistance to, and recovery from, disease; the latter displayed lack of knowledge as to the action of small doses of alcohol in producing mental and physical inefficiency. The National Temperance League therefore pleaded for a corrective and confirmative investigation, conducted under thoroughly scientific conditions, of the results of recent research with a view to the enlightenment of the public. The Mayor of Exeter said that he was only too glad to find himself associated with such a proceeding. The subject was one of such great importance that he wondered sometimes that the profession as a whole did not take it up with more vigour and more seriously than it did. Dr. Davy said to his mind the evils of drink which were brought on this country in crime and disease merited the serious attention of every Englishman, and it merited it all the more because there was no question that drink was increasing among the women in England, and if the women of England were going to turn out a drunken lot of mothers who would not look after their children then England was in a very bad way: but yet the hesitation he had in coming there was because most of the temperance societies and a large number of the temperance advocates talked the most unscientific twaddle ever invented. He expressed himself in favour of light beers, giving them a preference over much of the tea which is used as a popular beverage. On the other hand, he emphatically supported the principle of temperance. He never had recommended a patient to take alcoholic drink and never would do so. There was as yet little definitely known concerning alcohol and its effects but the scientific facts which they did know were that alcohol was not a necessity of life and very rarely useful in disease, and that it was not advisable to drink half as much as was done. Dr. Pickard contended that there was a great future in teaching children on temperance lines. He believed that the public, especially among the middle classes, were becoming much more temperate. Dr. Reeve said that the principles which actuated the league had been the guiding principles of his life and he had always been what was known as a total abstainer. He could not refrain from saying that the influence of the medical profession and of the laity at large would be much greater with those who took too much alcohol if they would practise at least moderation in the sister habit of tobacco smoking. Sir John Moore (Dublin) said he thought the drinking of actual alcohol *per se* was not very prevalent in this or any other country. It was the preparations containing alcohol that were taken and with which they had to deal. Alcohol was a most disagreeable thing to take and he did not suppose anybody in their senses would dream of taking alcohol, but he went further and said a great many of the beverages taken by total abstainers contained an appreciable amount of alcohol. It was quite possible to take too much alcohol in ginger ale. As a physician of one of their large Dublin hospitals, his experience was that intemperance in beverages containing alcohol was a most potent factor in the production of disease. He had no hesitation whatever in saying that intemperance led to tuberculosis. A vote of thanks to the Mayor for presiding was proposed by Dr. T. N. Kelynack and seconded by Dr. G. Basil Price, and was responded to by Alderman H. Gadd, J.P., on behalf of the Mayor.

The annual dinner of the Association was held on August 1st under the genial chairmanship of the President, Dr. Davy, in the large hall of the Royal Public Rooms. After the usual loyal toasts had been enthusiastically honoured Mr. Andrew Clark proposed "The Imperial Forces of the Crown," in the course of which he dwelt on the importance of the toast it was his duty and privilege to submit to the audience he addressed. This was replied to by Inspector-General James Porter, R.N. (President of the Naval and Military Section), and by Brigadier-General G. Kirkpatrick. Mr. P. M. Deas was entrusted with the toast of "The Bishop of the Diocese and Clergy of all Denominations," which was eloquently responded to by the Bishop of Crediton. Chancellor J. Edmonds proposed the toast of "The British Medical Association," which was duly acknowledged by the Chairman of Representative Meetings, Dr. J. A. Macdonald. After Sir John Moore had given "The Health of the President," which was drunk with great enthusiasm, the dinner concluded with the toast of "The Guests," proposed by Dr. W. Gordon, and replied to by Professor S. Leduc. The company then repaired to the Rougemont Hotel where a reception was held by the ladies of Exeter.

On August 1st the Continental Anglo-American Medical Society held its annual luncheon at the New London Hotel. Professor W. Osler was in the chair and some 24 members and guests were present. The toast of the guests was proposed by Dr. F. M. Sandwith who intimated that his speech was his swansong, inasmuch as he was resigning his official posts in the society. Dr. G. Newton Pitt and Dr. T. McCrae of Baltimore replied for the guests and so terminated a very pleasant meeting.

On the same afternoon the Irish Medical Schools' and Graduates' Association held its annual summer general meeting and luncheon at the Rougemont Hotel.

The address in Surgery was delivered on Thursday afternoon in the theatre by Mr. Butlin, before a large audience; a full report of this address appeared in our issue of August 3rd, p. 279.

Following this address a garden party given by the Lord Bishop of Exeter at the Palace was attended by some 2000 guests and the weather being fine the beautiful gardens looked their best. Music was provided by the band of the Royal Marines.

The public lecture was delivered by Sir John Moore on Friday evening. He took for his subject, Weather, Climate, and Health. Practical meteorology was of great importance and he criticised the British Government for only devoting £70,000 per annum to this subject. Infantile mortality was shown to be specially connected with the rise of temperature in the summer. Tuberculosis was not closely connected with climate and Sir John Moore gave figures showing that in the western portion of Ireland there was a relatively low death-rate from tuberculous diseases, while in the urban districts of Dublin, Cork, Belfast, and Derry the rate was much higher. This was due to the fact that the old urban tenements were very unhygienic and were full of the poison of tuberculosis. Sunlight was one of the most powerful remedies against the tubercle bacillus and owing to the window tax of 100 years ago old urban tenements were very badly supplied with window space.

Under the high-sounding title of the International Golf Match an annual contest between medical golfers of different nationalities takes place at each meeting of the Association and this year the contest took place on the Exeter links, which are beautifully situated on the hills overlooking the cathedral city. The views from the course are unrivalled, but the golf was only excellent in parts, for although the competitors were enthusiastic sportsmen the strange links and the exceedingly difficult hazards played havoc with the best-intentioned shots. The match resolved itself into a fight between England and Scotland through the absence of any Irish or Welsh champions and resulted in a tie. Subjoined are the scores :—

ENGLAND *v.* SCOTLAND.

| *England.* | | *Scotland.* | |
|---|---|---|---|
| R. L. Langdown ... ... ... | 0 | K. W. Goadby ... ... ... | 0 |
| H. Jefferies ... ... ... ... | 1 | A. Hill Griffiths ... ... ... | 0 |
| Boyd B. Joll ... ... ... ... | 1 | H. A. Latimer ... ... ... | 0 |
| W. C. Bluck ... ... ... ... | 0 | G. R. Tadman ... ... ... | 1 |
| L. E. Creasy ... ... ... ... | 0 | G. B. Batten ... ... ... ... | 1 |
| Total ... ... ... | 2 | Total ... ... ... | 2 |

## THE SECTIONS.

### MEDICINE.

THURSDAY, AUGUST 1ST.

*Discussion on the Diagnosis of Acute Pancreatitis.*

Professor W. **OSLER** (Oxford) in introducing the discussion referred to the work done upon the subject by various workers with whom he had been associated at the Johns Hopkins Hospital, notably Dr. Opie, Dr. Halsted, and Dr. Thayer. Within his memory there had been three stages in their knowledge regarding the pancreas : firstly, when it was regarded as a silent region of the body, only affected by cancer and such conditions as an occasional cyst; secondly, when the interesting work of Dr. R. Fitz had revealed the importance of such conditions as acute pancreatitis and pancreatic hæmorrhages and also had shown that pancreatic cysts were not uncommon ; and thirdly, the light thrown on the subject by the experimental work on acute pancreatitis and on the relation of disease of the pancreas to other conditions such as diabetes. There were two great groups of cases of acute pancreatitis, one in which there was marked swelling of the gland tissue, partly serous and partly hæmorrhagic in character, involving the whole gland or a part of it, the hæmorrhage sometimes being so extensive that it was difficult to say whether there were inflammatory changes present as well, though these could usually be recognised. In the second class of case there was suppuration going on to abscess formation or necrosis proceeding to actual gangrene. It was also not easy to say whether the hæmorrhage preceded the inflammation or was a sequel of it, but in cases of rapid death from pancreatic hæmorrhage there was an absence of fat necrosis which was so marked in pancreatitis. Three groups of causes of acute pancreatitis could be distinguished : (1) mechanical, such as from stone in the duct, rendering it vulnerable to bacterial invasion ; (2) chemical irritation, from substances such as bile and gastric juice which on experimental injection in animals produced acute pancreatitis ; and (3) bacterial, this probably occurring only after stasis, causing the pancreatic juice to lose its bactericidal properties. A recent analysis of 105 cases had shown that in 45 the disease had been associated with gall-stones, particularly in the ampulla of Vater. Such cases with gall-stones might have recurring chills for years without developing pancreatitis, but in certain of them this occurred. In 32 out of the 105 cases there was a history of preceding gastro-intestinal symptoms, a large proportion being in alcoholics. In such cases there were probably duodenitis and catarrhal inflammation of the pancreatic duct allowing bacterial invasion. 11 of the 105 cases were associated with mumps ; of these ten recovered and one proved fatal after suppuration. In the diagnosis of the condition it was well to remember that there were clinically two types, an acute and a subacute. The acute form presented the most acute group of abdominal symptoms with which they met. The patient was seized abruptly by agonising pain, which at once rendered him prostrate. It was paroxysmal in character, but was a most constant feature ; vomiting occurred almost immediately after the pain and persisted ; it consisted at first of the gastric contents and subsequently became intestinal in character, like that of acute obstruction of the small intestine. Extreme collapse quickly supervened, with coldness and lividity of the hands and feet, and a very diffuse light cyanosis over a great part of the body. Tenderness was at first diffuse, but later became more marked in the upper part of the abdomen, where some diffuse swelling might occur which was soon masked by general distension. In a large majority of the cases it was not possible to make a diagnosis, but a history of previous alcoholism in a middle-aged man with such symptoms might be suggestive. It required early and prompt operation for its treatment, since it was a very fatal malady, the patient dying collapsed at the end of two or three days. In the second group, the subacute or suppurative type of case, the onset was less acute and fulminant in character ; the pain was less severe, there were fever, chill, and leucocytosis, and the gradual development of a tumour mass in the upper part of the abdomen. The examination of the fæces and the urine might help in the diagnosis ; in the former there might be fragments of necrotic pancreas with a fatty character of the stools. In regard to prognosis Ebner, from a study of 96 cases, found that 90 per cent. of those not operated upon died, while 52·8 per cent. were saved by operation. The prognosis was most serious in those cases with gall-stones. The points he would suggest for discussion were the symptoms associated with acute pancreatitis, its etiology, the value of the examination of the fæces and urine, and the question of operation.

Dr. P. J. **CAMMIDGE** (London) had been much struck by the small proportion in which a diagnosis was made before death or operation. On examining the records of 50 recent cases he found that 12 had been regarded as perforated gastric ulcer, 12 as intestinal obstruction, four as acute peritonitis, two as appendicitis, two as cholecystitis, one as strangulated hernia, one as angina pectoris, while in 11 no diagnosis had been arrived at, and in five the diagnosis had been made and confirmed. It was therefore important to discover some aid to diagnosis. An examination of the fæces, which might be expected to afford assistance, was usually impossible owing to the constipation which was the rule ; in chronic cases there was a large excess of undigested muscle fibre and of fat, especially an excess of unsaponified fat over the saponified. As far as he had been able to find out in acute cases these conditions were not present ; indeed, rather the reverse might be the case. With regard to the urine he had examined it in seven cases of acute pancreatitis, in one of the subacute form of the disease, and in one case of glycosuria following upon recovery after acute pancreatitis. In four of these cases there was a considerable amount of acetone and of diacetic acid, in five a large number of calcium oxalate crystals, in four bile, and in five urobilin. He thought that the presence of urobilin was an evidence of catarrh spreading into the bile passages and pancreatic duct. Wolsey had stated that a temporary glycosuria might be seen in 10 per cent. of these cases in the first day or two. Dr. Cammidge then referred to the so-called "pancreatic reaction" described by himself in 1904 and improved in 1906. Five of his cases had been examined by the original method, in which there was a serious personal element, two by his new method which largely did away with the personal factor. He gave brief details of the results of his methods as applied to the seven cases, showing that the reaction was given during the attack and disappeared after recovery. One of his cases occurred in association with mumps; it was one of seven cases of that disease in a boys' school. The boy gave a well-marked reaction and recovery occurred.

Dr. G. NEWTON PITT (London) wished to know the mortality in acute cases, especially in those not operated upon. He referred to a case observed by himself and Mr. Dunn occurring after a blow in the epigastrium during a rough voyage from America. Recovery occurred in this case without operation. He also mentioned another case in which operation was performed for abscess and inquired whether in a case which had gone on for three or four months without healing it would be well to explore further from behind with a view to secure better drainage.

Dr. G. CRAVEN MOORE (Manchester) had seen four cases in the post-mortem room, of which three were also seen during life. The condition was usually in persons of obese habit and in alcoholics. Of the four cases he had seen two were hotel proprietors and one was a barman and all of them had indulged in spirits. A history of previous anomalous dyspeptic attacks, regarded as bilious attacks, was common. The actual attack of acute pancreatitis came on suddenly with extreme collapse, and the patient appeared more desperately ill than in acute perforative peritonitis in which there was often for a time a slight reaction. In one case the pain simulated that of acute appendicitis, although the appendix was found to be healthy post mortem. Two of the cases developed acute maniacal delirium with widely dilated pupils. He regarded some of the anomalous attacks of dyspepsia which preceded the final attack as mild attacks of pancreatitis, and in one of his cases there was marked evidence of old inflammatory lesions in the pancreas. He suggested that some of the cases of gastroxynsis or periodic gastrosuccorrhœa might also be of this nature.

Dr. F. J. POYNTON (London) had seen a case of ulcerative endocarditis in a boy in which at the necropsy there was an infarct in the pancreas with inflammation around, and inquired whether this might not be more common than was supposed. He also suggested that the condition in children described by Dr. Gee as the cœliac disease or acholia, in which they passed white stools and wasted rapidly, with evidence of severe abdominal disease, might not be due to some acute disease of the pancreas.

The PRESIDENT of the Association (Dr. HENRY DAVY) described a case of acute pain with tenderness over the appendix occurring in an obese woman, the condition being regarded as appendicitis. After an interval of a fortnight there was a similar attack and then, after three or four months, a large pancreatic cyst developed which was recognised and drained.

Professor W. P. NORTHRUP (New York) pointed out the value of a discussion of this character in drawing general attention to conditions at first regarded as rare, but being found to be more common when carefully looked for.

Dr. W. J. TYSON (Folkestone) referred to the marked simulation of acute pancreatitis by the condition of embolism of the superior mesenteric artery, the chief distinction being the occurrence of some degree of hæmorrhage from the bowel in the cases of embolism.

Mr. C. S. MORRISON (Hereford) referred to certain cases of colitis or epidemic diarrhœa in asylums, the patients passing fatty stools for months and high-coloured urine without jaundice, in one of which he had seen fibrosis of the pancreas.

Dr. H. NOLAN (Cairo) endorsed the resemblance between these cases and those of embolism of the mesenteric artery and referred to a case seen by himself illustrating this.

Professor OSLER, in replying, said in answer to Dr. Newton Pitt that the mortality apart from operation was very high. He did not agree that gastrosuccorrhœa bore any resemblance to pancreatitis. He agreed with Dr. Tyson in regard to the simulation by embolism of the superior mesenteric artery.

A paper (with lantern demonstration) was read by Professor NORTHRUP on

### *The Treatment of Pneumonia and other Acute Infectious Diseases by Open-air Wards in Metropolitan Hospitals.*

He described certain shelters erected upon the roof of his hospital in New York in which at first convalescent children and adults were allowed to spend from two to six hours a day. Subsequently special shelters were built like the horse-sheds so common in America. These were protected on the east, north, and west but were open to the south. They were now being used for convalescent patients and cases of various kinds of acute disease were now being entirely treated in these shelters with most satisfactory results. An important feature was that the patients should be made as comfortable as possible, with plenty of warm covering or with hot-water bottles if they required them. Thus far, no single person had caught cold, although there had been snow and cold inclement weather. He was convinced of the value of this adjunct to the wards in metropolitan hospitals.

Dr. P. WATSON WILLIAMS (Bristol) had seen the open-air shelters erected by Professor Northrup and could testify to the comfort and the happiness of the patients.

Sir PHILIP SYDNEY JONES (Sydney, New South Wales), as an advocate for fresh-air treatment of pulmonary tuberculosis, welcomed Professor Northrup's observations and hoped that they would serve to assure those who were afraid of putting their patients out in the open that their fears were unfounded.

Dr. J. MICHELL CLARKE (Bristol) read a paper (with lantern demonstration) on

### *A Case of Lymphadenoma Treated by X Rays.*

The patient was a boy, aged ten years, in whom treatment by x rays caused a marked reduction in the size of the glands so that they were reduced to small swellings like kernels. Death occurred some time later and it was found that the growths in the liver and spleen had been unaffected by the rays. Microscopically the lesions were those of chronic lymphadenoma; there were three kinds of cells, small lymphoid cells, endothelioid cells, and large giant cells, and a peculiar hyaline degeneration of the fibroid tissue which looked like the waxy change but, apart from a slight iodine reaction, gave none of the other tests.

Dr. SAMUEL WEST (London) in a paper called

### *Some Remarks on the Diagnosis and Treatment of Pericarditis*

said the value of the signs of pericarditis varied in the different forms of pericarditis. *Pain* might be absent even when friction was loud. It was usually due to the friction. In large effusion it was rather distension than pain that was complained of. True cardiac pain (angina-like) was rare. *Friction* was localised and if the pericarditis were not in front it would be inaudible. With effusion friction was said to be present at first, to disappear as effusion formed, and to return (redux) as the effusion disappeared. But many cases of large effusion presented loud friction throughout, therefore the presence of friction did not prove the absence of effusion. *The cardiac dulness* was always increased—with effusion of course, but in other forms because of the effect of the inflammation upon the muscle fibres and the dilatation which resulted. The shape of the cardiac dulness with effusion was often described as characteristic and pyriform. This was not so. In moderate effusion it could not be distinguished from that of dilatation of the heart, with which condition confusion had been often made. In large effusion the shape might be pyriform and with the apex not towards the base, but the left axilla. *Systolic recession* of the apex-beat was a valuable sign of adherent pericardium, when it was present, but it was more often absent. The *respiration rate* might be very rapid and the pulse respiration ratio as much perverted as it was in acute pneumonia. The *pulsus paradoxus* only occurred in a typical form with mediastino-pericarditis. All forms of pericarditis might be latent, that was, develop without symptoms. Attention was drawn to the occurrence of latent purulent pericardial effusion after pneumonia. In respect of treatment two questions were considered: (1) the use of opium, which was of great benefit and devoid of risk; and (2) paracentesis. The safest place for puncture was outside the nipple line—the fact that the pleura was perforated here was no objection. All other places were risky. This was also the safest place for excision. The removal of ribs was not necessary and was undesirable. Reasons for these conclusions were given.

Dr. WILLIAM HUNTER (London) read a paper on

### *The Effect of Oral Sepsis and Antisepsis in Scarlet Fever.*

He drew attention to the frequency of septic complications in scarlet fever and differentiated the symptoms of the disease which were strictly scarlatinal and those due to superadded sepsis. He emphasised the effect of oral sepsis—

i.e., inflammatory conditions of the gums and mouth due to the streptococcus and staphylococcus—in increasing the severity of the primary and secondary angina of scarlet fever. He recommended extreme and rigid antiseptic treatment of the mouth when oral sepsis was found to be present in cases of scarlet fever.

Dr. Tyson read a paper entitled

*Some Remarks on the Prevention of Appendicitis.*

He gave statistics showing that of recent years appendicitis had increased in frequency both absolutely and relatively and that it tended to be more severe in type. He referred to the difficulty in persuading people to adopt preventive treatment in the form of proper regulation of diet and exercise. Appendicitis was a disease of civilised life, being rarely met with in the coloured races in America and Africa. He attributed the increase of the disease to the following conditions: oral sepsis, excessive eating, and the eating of unsuitable foods, such as too soft foods and frozen articles of diet, alcoholism, and the faulty position adopted in the act of defæcation. He suggested appropriate means regarding all these conditions in order to endeavour to lessen the frequency of the incidence of the disease.

## SURGERY.

### Wednesday, July 31st.

Mr. George A. Wright (Manchester), the President of the section, opened the meeting with a short speech in which he expressed his thanks for the honour which had been done him in appointing him to the post.

A discussion on

*The Relative Value of Inhalation and Injection Methods of Inducing Anæsthesia*

was to have been opened by Mr. H. P. Dean (London), but in his absence his paper was read by Mr. W. Sampson Handley (London), one of the secretaries of the section. Mr. Dean mentioned that he presumed he had been chosen to open the discussion in consequence of his having written a paper on the Value of Lumbar Injection in Acute Abdominal Diseases and therefore he had considered it advisable to limit himself to spinal analgesia. The point which had struck him the most in operations under spinal anæsthesia had been the great mitigation of surgical shock; it might almost be said that shock had been practically abolished. The operations which were most frequently followed by shock were those connected with the abdominal cavity, though it was necessary to include a few others, such as those on the thigh, the hip, and the knee, but most of these operations were much less frequent than they were 40 years ago. Trans-sacral excision of the rectum must also be included. When ether and chloroform were first introduced it was soon noticed that although the pain of the operation was not felt the amount of shock was almost as great as in the pre-anæsthetic days. It must also be remembered that both ether and chloroform were liable to give rise to troublesome after-effects as in the bronchial mucous membrane and these were especially troublesome in cases where an abdominal operation had been performed. Chloroform and ether affected primarily the higher nerve centres, especially those connected with consciousness; then the basal ganglia were affected; later the sensory and motor tracts; and, lastly, if the anæsthetic had been pushed too far, the centres necessary for maintaining life, those connected with the heart and lungs, were involved. In the choice of an anæsthetic they should look for one which would not irritate the respiratory mucous membrane, and also they should choose one which would paralyse completely all the afferent nerves coming from the area to be operated on. If the peripheral nerves of the affected part were completely thrown out of action no amount of damage could cause stimuli to pass to the central nervous system; at the same time consciousness and the integrity of the vital centres would be maintained. Within the last few years several drugs had been discovered possessing the power of paralysing the peripheral nerves without affecting the central nervous system. Cocaine was the first, but it was very poisonous and uncertain, and it was unsuitable. Beta eucaine was not much better. Within the last two years a more suitable drug had been discovered; it was called stovaine, and a similar substance had been used in Germany called novocaine. Stovaine was a vaso-dilator, and it had a tonic rather than a depressing effect on the heart. The formula that Mr. Dean preferred was stovaine 0·1 gramme, sodium chloride 0·1 gramme, and distilled water 1 gramme. It was unnecessary to discuss whether spinal anæsthesia should replace general anæsthesia in the ordinary operations of surgery. It was largely a question of sentiment; there certainly were patients who did not like having their "senses taken away," and for these spinal anæsthesia might be used. When, however, they were dealing with acute abdominal diseases, such as acute general peritonitis, the matter was different. They did not get the harmful irritation of the respiratory mucous membrane, nor the severe secondary effects of the anæsthetic, and, most important of all, the thorough paralysis of the peripheral nerves protected the patient from nearly all of the surgical shock. In this country spinal anæsthesia had made very little headway, and this was strange when they considered how extensively it was employed abroad. Mr. Dean's paper then considered the chief points in connexion with spinal anæsthesia. The injection was best made between the third and fourth lumbar vertebræ; if it was done higher there was some risk of injuring the cord; if it was given very low there was a possibility of the anæsthesia being unilateral. The exploring needle, which was better than a trocar, might puncture a vein, for there was an extensive venous plexus in that neighbourhood and the bleeding might be troublesome. It was often advised that a little fluid should be allowed to escape first, and it was a fact that the headache which not rarely followed spinal anæsthesia was caused by increase of cerebro-spinal pressure. Mr. Dean had three exploring needles of different lengths so as to suit different cases. It was important to screen the operation from the sight of the patient, and for this purpose a small cardboard screen was sufficient; it was well also for a nurse to sit beside the patient and engage his attention, so as to prevent him listening to what was said. The opinions of some patients who had had spinal anæsthesia for acute general peritonitis and other conditions were read, and they all agreed in saying that though they felt the prick of the needle they felt nothing else; they preferred spinal analgesia to a general anæsthetic. The least dose which appeared to be of any practical value was 0·05 gramme. The following method was convenient in, say, acute general peritonitis: begin with 0·6 cubic centimetre of the solution; if in seven minutes anæsthesia was not present give 0·3 cubic centimetre more; if seven minutes later the anæsthesia was still incomplete give 0·3 cubic centimetre more. If even then there was not sufficient anæsthesia the drug must be at fault or there was some other disturbing cause. For instance, it had been found that if the exploring needle had been boiled in a solution of sodium carbonate the stovaine loses all its power. The needle might be left in during the operation and additional doses might be given if necessary. Though he had never found it necessary it might sometimes be advisable to give a dose after the completion of the operation if there were a recurrence of the pain. The surgeon could fully rely on the anæsthesia produced by lumbar injection for any operation not higher than the umbilicus. One of the most important points in connexion with spinal anæsthesia was the absence of shock.

Dr. J. Ward Cousins (Portsmouth) agreed that it was very remarkable that on the Continent of Europe spinal anæsthesia was very widely used but very little in this country. It is certain that the dangers from general anæsthesia were grave but spinal anæsthesia was not safe either and the decision as to which should be employed must depend in great part on the relative mortality. He had seen a statement that in 2000 cases treated recently by spinal anæsthesia there had been six deaths. Shock certainly seemed to be reduced in spinal anæsthesia but he was inclined to think that the possession of consciousness might cause a good deal of shock in highly nervous patients. It was very probable that mere manipulation of the abdominal organs might cause distress in patients under spinal analgesia, especially if the operation was prolonged. Probably if the decision were left to the patients most would prefer the general anæsthetics.

Mr. Alexander Wilson (Manchester) thought that patients under a general anæsthetic suffer much from shock, and if spinal anæsthesia did prevent shock it must be preferable on that point at least. He, however, pointed out that when all things were taken into consideration general anæsthetics were really very safe. He felt sure that, as a rule, too deep a degree of anæsthesia was maintained. He also was inclined to think that surgeons were not always gentle enough in their manipulation of the abdominal organs, and he was sometimes surprised at the small amount of shock. In some operations, such as for the removal of an enlarged thyroid, it was becoming customary to employ local anæsthesia, but really he had had no trouble in giving general anæsthetics to thyroid cases.

Mr. C. A. Leedham-Green (Birmingham) wished to urge strongly the claims of spinal anæsthesia. He began to employ it some 18 months ago. It was especially useful when any bronchitis was present, but now he used spinal anæsthesia for all major operations below the diaphragm. He had tried stovaine and novocaine but now he used tropacocaine and it was by far the best; it was less likely to give rise to headache or vomiting, it was less toxic than the others, and it had less action on the motor cells. He considered that the addition of adrenalin was wholly unnecessary and undesirable. The patient was first given a diffusible stimulant; whisky was usually employed. An exploring needle was inserted between the second and third lumbar vertebræ or, if high anæsthesia was required, between the first and second. As soon as the cerebro-spinal fluid flowed clearly and freely the tropacocaine was injected. One cubic centimetre of a 5 per cent. solution was put into the syringe and then some of the cerebro-spinal fluid was drawn into the syringe and the mixture was injected. There was no need to put the patient into the Trendelenburg position, for the onset of anæsthesia was very rapid—so rapid, indeed, that he never needed to test for it, but he commenced the incision as soon as the patient lay down and he (the surgeon) had washed his hands. The anæsthesia was generally up to the fourth rib; occasionally it was up to the clavicle and very rarely it might not reach above the costal arch. As a rule the anæsthesia lasted for one and a half hours and usually it was absolutely ideal. It was not suitable for severe kidney or gall-stone operations, though if morphine and scopolamine be injected previously it might be sufficient. When the peritoneum was acutely inflamed he did not recommend spinal anæsthesia, as the serous membrane was extremely sensitive. After the operation, vomiting might take place, but it was rare and only one vomit occurred, or there might be a little headache for a few hours. He did not regard nervousness as a contra-indication, for the patient soon lost her anxiety and might even sleep by suggestion. On the evening of the day of operation an ounce of castor-oil was given. Spinal anæsthesia was especially suitable if there was bronchitis, nephritis, diabetes or alcoholism. It was very convenient for catheterising the ureter in the male. It was contra-indicated in children (his youngest case was 12 years old), in the highly neurotic, in severe septic conditions especially of the skin, in acute peritonitis, and in long, difficult operations above the umbilicus. Most of the fatal cases had been with cocaine and stovaine. In 2000 cases in which tropacocaine was used, no death occurred. One disadvantage was that the patient heard what was said.

Dr. A. G. Levy (London) said that there was apparently an attack on general anæsthetics and there were objections to some general anæsthetics. If ether was given by the open method it was an absolutely perfect anæsthetic. When given in the ordinary way, as in a Clover's inhaler, there was partial asphyxia and this caused venous congestion and violent movements of the abdominal muscles. If ether were given by the open method there was no cyanosis and the after-condition of the patient was excellent. It was true that the induction period was prolonged by some three minutes and more ether was used, but these were small matters when the safety and comfort of the patient were concerned. With regard to shock, spinal anæsthesia might stop ordinary sensory impulses, but it did not block emotional impulses.

Mr. J. W. Struthers (Edinburgh) had been interested for some years in local anæsthesia. Its main field was in minor operative work, where the area was small and could be completely covered. Sometimes perineural or intraneural injections were required. Varicocele and the radical cure of hydrocele were typical operations for local anæsthesia. Attempts to employ local anæsthesia for wider operations were ill-advised. It was not suitable for abdominal operations as the area of operation could never be exactly known beforehand.

Professor W. L. Rodman (Philadelphia) thought the result of the present advance of injection anæsthesia must depend on the decision as to the relative importance of the real dangers of general anæsthetics and the less known risks of injection anæsthesia. He considered that spinal anæsthesia was suitable for cases with bronchitis and nephritis, in cardiac cases, and in alcoholics. He had employed it in about 100 cases and had never regretted using it. He thought that there should be some special indication. In one case he had found it very useful; it was a case in which a man had sat down on a pitchfork and had torn both sphincters of the anus; spinal anæsthesia had allowed him to have the assistance of the voluntary movements of the patient, and a result was obtained which he thought would have been impossible with a general anæsthetic. He did not think spinal anæsthesia was suitable for children.

Dr. J. Singleton Darling (Lurgan) described a case in which he had employed infiltration anæsthesia. The patient was a woman, aged 75 years, from whom he removed an ovarian cyst. There were many adhesions and the operation lasted one hour and 20 minutes, but she complained of no pain except when traction was made on the intestine.

Mr. E. Canny Ryall (London) said that he had been much interested in the subject of spinal anæsthesia for some time. He used novocaine; he thought it was much better than stovaine and better even than tropacocaine. He had a case of an old man in which he removed an enlarged prostate; the heart was weak but no shock appeared, and within a few minutes of the termination of the operation he was able to talk to his wife and daughter. Mr. Canny Ryall mentioned that death had occurred when tropacocaine had been used. He gave castor-oil before the operation, with three grains of pyramidon, and the head was always kept up. In this way he avoided the headache which was liable to follow spinal anæsthesia. He used a 1 per cent. solution of novocaine with a synthetic adrenalin. If the operation was above the umbilicus he used in addition morphine and scopolamine.

Dr. G. A. H. Barton (London) thought that spinal anæsthesia was dangerous. In 3 per cent. of some published cases the anæsthesia was a failure and in 3 per cent. there was severe headache. He described a case in which marked œdema had followed the employment of spinal analgesia.

Mr. J. G. Pardoe (London) read a paper on

*The Indications for Prostatectomy.*

He urged the importance of discriminating between the various forms of enlarged prostate. When malignant disease affected the prostate enucleation was impossible and even excision was only possible at an early stage. The examination of an enlarged prostate must be systematic; the shape, outline, consistence, size, fixity, and the presence of enlarged lymphatic glands must all be considered. In all cases the suprapubic route was best, except for fibrous enlargement, for which prostatotomy was the most suitable operation The surgeon should not refuse to operate for adenomatous enlargement, even if the patient was very ill.

Mr. P. J. Freyer (London) read a paper on

*A Further Series of 107 Cases of Enucleation of Enlarged Prostate.*

He showed many of the specimens removed, which ranged in weight from half an ounce to over 11 ounces. Nine of the patients were over 80 years of age. When uræmic symptoms were present, a dry tongue and thirst, the operation was best done in two stages, the bladder being opened at the first operation and the enucleation completed later. There were seven deaths in the 107 cases. In all he had performed the operation 432 times, with a mortality of 7 per cent. Cancer of the prostate was not so rare as was formerly thought and it must not be forgotten that malignant prostates did not necessarily bleed.

Dr. Ward Cousins read a paper on

*A Case of Composite Odontome.*

A boy, aged 10 years, had a swelling of the right side of the jaw; this steadily increased and when Dr. Ward Cousins removed it it was found to be a composite odontome and over 100 denticles were present.

Mr. C. P. Childe (Southsea) read a paper on

*A Case of Successful Resection of Nine and a Half Feet of Small Intestine for Gangrene.*

The patient was a woman, aged 59 years, and she had had a femoral hernia for 17 years and it had been strangulated on one occasion. She was attacked with severe abdominal pain a quarter of an hour after rising in the morning. The hernia was large and it was thought to be strangulated. When the sac was opened the bowel was found to be gangrenous, and when further bowel was drawn down it was found that there were more than nine feet of gangrenous bowel extending to within two inches of the ileo-cæcal valve. This was removed and the ends were closed and a lateral anastomosis of the small intestine into the large was made. The patient recovered, and though she lost weight for a time she had now ceased to get thinner. There was a great tendency to diarrhœa which was checked with morphine. Mr. Childe attributed the gangrene to an embolus of the superior mesenteric, and he considered its association with the hernia to be accidental.

## STATE MEDICINE.

### THURSDAY, AUGUST 1ST.

A paper was read by Professor H. R. KENWOOD (London) on

*The Reduction of Infant Mortality by the Better Management and Control of the Milk supply.*

Professor Kenwood commenced by pointing out that cows' milk in its untreated state was not a suitable food for infants and was fraught with great dangers. It must not, however, be assumed that the mortality among hand-fed as compared with breast-fed infants was mainly due to this cause, as the factors of infantile mortality were many and complex. The community had, however, a right to require that the milch cows should be healthy, their surroundings sanitary, and their milk fairly clean, coupled with an absence of chemical preservatives. So far the milk trade had not been fully alive to the demand made upon them or to the exceptional position which they held as the vendors of a unique commodity. It was undoubtedly a very difficult trade to conduct, but the public had a right to demand some effort to conduct it properly, and it should cease to be regarded as a danger to infant life and health. The danger began at the source and there was no doubt of the appalling ignorance which prevailed on dairy farms. To those who were acquainted with the methods pursued in Denmark the conditions prevailing in England were absurd and horrible, and the milk reached the distributor in a state of absolute dirt, which was very bad indeed. Milk could not be kept wholly free from micro-organisms, but the present proportion was capable of material reduction and their further multiplication during distribution and transit could be materially checked, even if a standard of perfection could not be attained. In the absence of proper inspection and supervision by rural sanitary authorities it might be possible for the milk trade themselves to influence the farmer or in some measure to educate him. This had already been done by many of the large milk dealers and with excellent result. But it was unfair that this burden should be laid upon any trade and as it was to the interest of the community to protect the purity of milk it was the duty of the State to insure it and not to relegate its duties to private individuals. At the present time 20 per cent. of the authorities concerned had not even adopted the regulations of 1885. It was thus evident that some compelling statute was required and that proper Government supervision was quite as necessary as it was in the case of adulteration of food and drugs. Milkshops should be licensed, not as at present simply registered, and the licence must be subject to annual renewal; it would then be possible to require an initial standard of cleanliness and to see that it was maintained. The systematic inspection of milch cows should be made at intervals of not less than three months by a veterinary inspector under the Board of Agriculture, and tuberculous animals should be segregated and slaughtered; a reasonable scale of compensation might be granted. Professor Kenwood then discussed the pasteurisation of milk and the compulsory sale of milk in bottles, by which means much contamination in the home might be prevented, while the bottle was a guarantee of full measure and watering was rendered less easy. The dangers arising from feeding infants on sterilised milk had probably been exaggerated, for the evidence was very small of the actual existence of any real danger. He was not enthusiastic in favour of milk depôts and considered that the infants' "consultations" and similar measures recently adopted in St. Pancras were much to be preferred. He finally alluded to the promise made by Mr. Burns to introduce legislation next year and trusted that such legislation would be stringent and far-reaching and would, above all, embrace proper inspection of dairy farms and milch cows.

Dr. E. W. ROUTLEY (Aldershot) contributed a paper on

*The Home Contamination of Milk,*

which was read by Mr. J. H. GIBSON (Aldershot). He commenced by classifying the causes of infantile mortality under the following heads: wasting diseases, diarrhœa, lung disease, brain diseases, infectious diseases, tuberculosis, and other diseases, and pointing out that under these headings he proposed to deal mainly with causes producing fatal diarrhœa. Infantile diarrhœa was mainly concerned with the home conditions of the people and this was borne out by the experiences of Aldershot. Here there was a town population of 19,000 and a camp of 15,000. The town in five years showed 62 fatal cases of infantile diarrhœa against only 17 in the camp. During the same period the total deaths under one year of age were 76 and 23 respectively. The source of the milk-supply was identical in both cases and was mostly rail-carried, only about one-tenth coming from the neighbouring farms. Thus it became necessary to seek carefully for some definite cause which would account for the different rates of infantile mortality. Dr. Routley considered that this was to be found in the distinction in the methods adopted for milk storage and the standard of sanitation enforced in the camp as against the town. A careful inquiry showed that in the town no precautions were taken to keep the milk pure and clean after it had been received into the house; overcrowded rooms, tightly closed windows, free access to flies, and general uncleanliness all pointed to great home contamination. This state of things naturally produced a condition of milk admirably calculated to produce gastric and intestinal disease among children. It would therefore appear that however necessary it might be to inspect milch cows it was more important to deal with home storage.

Mr. HERBERT JONES (Hereford) felt that Dr. Routley had been fortunate in possessing so excellent an opportunity of making a comparison between two neighbouring populations but he was unable to follow him in his ultimate conclusions. Pasteurisation, as recommended by Dr. Kenwood, was excellent but they could not rely upon it because it was a remedy. What they wanted was to prevent contamination at the source. He did not think county councils were to be trusted in this matter as experience had shown by their inaction in sanitary matters. The proper controlling officer was the medical officer of health, to whom a free hand should be given without danger to his appointments. Attention should be given not only to the cows but to the water-supply and the methods employed in washing cans and travelling churns.

Lieutenant-Colonel A. M. DAVIES, R.A.M.C., spoke briefly on the necessity of careful attention to detail in the cleanliness of cowsheds; this could be done even in India and in such an impossible place as Aden. As to the dangers of sterilised milk he felt that many men had displayed a lack of proportion in studying this question.

Dr. HELEN MCMURCHY (Toronto) wished to differ so far as Canada was concerned from the views of Dr. Routley. The question of Canadian milk-supply was still in its infancy; diarrhœa in Toronto was not at all confined to poor houses. Milk in Canada was largely refrigerated and distributed in closed bottles, but even so there were occasional failures to sterilise these bottles. She had no sympathy with the cry of harassing the trade and thought that after all the remedy lay really in the hands of the community.

Mr. H. H. TIDSWELL (Torquay) related his experience of the Liverpool cowsheds which were properly paved and washed and the cows were properly groomed. He did not consider it possible to sterilise milk in all instances; he also said he had abandoned his prejudice against condensed milk, which he had found an excellent substitute for the breast.

Professor T. A. STARKEY (Montreal) desired to speak on two points: (1) the prevalence of diarrhœa in hot dry weather; and (2) the attribution of diarrhœal disease to home rather than central contamination. From practical experience in Montreal he had found that so-called summer diarrhœa was more a question of general sanitation than of temperature and that dust was perhaps the greatest causative factor. He did not boast of the milk stores in Montreal and he wished to eliminate that factor.

Dr. F. M. SANDWITH (Cairo) pointed out that mothers were becoming increasingly unable or unwilling to nurse their infants and consequently the provision of milk was more important to the community. There was milk sold in London supplied at exceptional prices which came from the very worst dairies. In America much had been done to protect the milk-supply of great cities; the lead had there been taken by medical practitioners, and in the case of Philadelphia a very complete system of milk inspection had been organised which included both chemical and bacteriological examination and a systematic and periodic veterinary inspection of milch cows. Certificates were issued by the commission and dairies holding this certificate commanded a much higher price.

Dr. F. E. WYNNE (Leigh, Lancs.), speaking as a member of the town council of Leigh, supported the idea of placing the duty of inspection upon county councils. He thought local authorities were already overburdened with inspectorial duties.

Dr. F. J. H. COUTTS (Blackpool) regretted that no one was present on behalf of dairy farmers and to put forward the view which they expressed that milk-borne disease was solely due to home and distributive contamination. He also felt that proper isolation of tuberculous beasts must be accompanied by sufficient reasonable compensation. He advocated refrigeration and cooling as equal to pasteurisation, to which certain chemical objections could be urged. In Ireland in some places milk was unprocurable by the poor owing to the prices paid by the creameries.

Dr. A. DRURY (Halifax) spoke of his experience of home contamination as a factor in infantile mortality.

Mr. SACK NOY SCOTT (Plymstock) spoke briefly on his experience of rural cowsheds and said that in his own district much good work had been done under the regulations.

Dr. W. B. BARCLAY (Weymouth) criticised the conclusions arrived at by Dr. Routley, having himself at one time been medical officer of health of Aldershot. His experience had been that the condition of the cowsheds at the source was of the very worst and would produce infantile diarrhœa.

Mr. E. H. T. NASH (Beccles) spoke more especially from the point of view of the London infantile mortality statistics. He had had experience of the milk from the Walker-Gordon laboratories and found that it was the most perfect milk he had ever used. He condemned sterilised milk but would be willing in certain months to use pasteurised milk and occasionally condensed milk but not as a rule. The existence of scurvy could not be overlooked.

Dr. W. F. BROWN (Ayr) spoke of the great difficulties caused by deficient water-supplies and said that pressure was needed by the authorities on the landlord even more than on the tenant. Tuberculosis was not wholly due to milk but a great deal was due to bad feeding other than bad milk. Milk must be the subject of preventive treatment and not cleaned after it had been made dirty.

Mr. C. H. WATTS PARKINSON (Wimborne) spoke of the importance of controlling imported dairy products and the need for enforcing existing regulations. There should be a greater power of punishment for supplying milk containing pus, dirt, &c., and some form of notification of disease among cows. Security of tenure was more essential in dealing with rural conditions than in any other districts because the farmers and dairymen controlled the councils.

Dr. W. A. BOND (London) spoke further of the Walker-Gordon laboratories and the good work which was being done there. The present failure to control infantile tuberculosis reflected gravely on our modern civilisation, because while the adult death-rate from pulmonary tuberculosis had been reduced one-third infantile tuberculosis had remained stationary.

Dr. J. H. DRYSDALE (London) added a few remarks on the private hygiene as part of the question.

Mr. GIBSON spoke from the general practitioner's point of view and felt that it was to this branch of the profession that much that was said applied. It was in the power of the private practitioner largely to influence the condition of the milk-supply both at the source and more especially at the home.

Professor KENWOOD briefly replied, and Mr. HERBERT JONES then moved the following proposition :—

> That it is necessary for the efficient and operative inspection of rural milk-supplies that such inspection should be made by officers not subject to periodical reappointment.

This was carried unanimously.

## OBSTETRICS.

WEDNESDAY, JULY 31ST.

After a few introductory remarks by the PRESIDENT, Dr. E. H. TWEEDY (Dublin), on the Morbidity of Childbirth a discussion on

*The Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Term, with a Discussion on the most Appropriate Method for Procuring this Dilatation,*

was introduced by Dr. ROBERT JARDINE (Glasgow). He said that the first part of the subject—viz , the justification of the operation—need not occupy much time. The operation had been so long in use that use and wont alone might seem sufficient justification. He held no justification to be necessary for an operation which enabled one to save life. Undoubtedly, conditions sometimes arose where in the interests of the child or of the mother, or of both, a quick delivery was necessary, and if that delivery were to be carried out through the natural passages artificial dilatation of the cervix was required. The operation, perfectly justifiable under certain conditions, deserved reprobation if done when there were no strong reasons for it. The speaker entered a protest against such a proceeding. Dr. Jardine first described the methods which approached nature's ways, by means of hydrostatic bags or the vaginal plug. These methods were slow and uterine action was called into play by them. Of the bags he considered the firm ones—like Champetier de Ribes's—more useful than the rubber ones of Barnes. He had found the vaginal plug most useful in placenta prævia, but much depended on the proper insertion of the plug. Manual and bimanual methods were next described. Manual dilatation was the one most frequently employed and most useful when the cervix was soft and partly dilated. Dilatation by expanding instruments, like Bozzi's, acted much like the hand, but the arms were not sensitive and therefore gave no indication when the parts were tearing. These screw-instruments required to be used with great care and at least half an hour ought to be occupied in the operation. If the cervix was not "taken up" very great caution was necessary. Cutting methods.—Multiple incisions of the cervix, as recommended by Dührssen. The cervix should be obliterated. The number of incisions varied from two to seven. There was risk of the lateral incisions extending, so as to cause injuries to the uterine arteries, and in making the incisions the lateral position should be avoided, more especially when making four incisions. The child should be delivered at once, preferably by forceps, and after the placenta was away the cervix should be drawn down for careful inspection. If there was bleeding the incision should be stitched, but if there was no bleeding stitching was not absolutely necessary. Vaginal Cæsarean section.—Dührssen's name was also associated with this operation, but he had not been the first to perform it, although he was the first to suggest it. Effacement of the cervix was not necessary and it was preferable that the presenting part should not have engaged as version was the method of delivery usually adopted. One very essential condition was that the uterus should be mobile, so that the cervix and lower uterine segment could be pulled well down. Dr. Jardine described the operation and also Dührssen's perineo-vaginal incision to enlarge the vagina. He did not think this incision necessary, as the vagina could be dilated manually. It had been maintained that the operation was a very easy one and quite free from risk. Occasionally even an expert would find it a difficult one to perform and the not inconsiderable death-rate of published cases amply proved it to be not by any means free from risk. The risks were : 1. *Infection*, which was common to all operations but less in vaginal than in abdominal ones. To guard against this the strictest asepsis was necessary. 2. *Injuries to the mother or child.* The uterus might be ruptured by extension of the incision and the bladder had been injured. In regard to the child it had been born dead and craniotomy had been found necessary. 3. *Hæmorrhage.* This was fairly common, as the uterus was atonic. In all cases it was necessary to be prepared to tampon. Dr. Jardine considered that vaginal Cæsarean section was an operation for experts in vaginal surgery and not one which an ordinary general practitioner should undertake. In conclusion Dr. Jardine said that in deciding on the proper method to adopt the attendant had to consider the condition of the cervix and also the amount of his experience. If he were an adept in vaginal surgery he would probably prefer vaginal Cæsarean section in all cases in which there was likely to be difficulty in dilating the cervix, but if he had no experience in that form of surgery, in the interest of his patient he should adopt one of the other methods or else call in the assistance of an experienced colleague, who could undertake the major operation of vaginal Cæsarean section. In reference to this operation in cases of placenta prævia he was of opinion that, like ordinary Cæsarean section, it was quite uncalled for, as better results could be obtained by other methods.

Professor PAUL STRASSMANN (Berlin) stated that the opinion held in Germany at the present time coincided in the main with what Dr. Jardine had said. He thought that Champetier de Ribes's bag was the best instrument for general practitioners to use. He was not at all in favour of Bozzi's dilator, having known of several most serious accidents due to its use. A celebrated pathologist had told him of a case where the body of the uterus had been ruptured by this instrument for five inches. A friend of his had asked one of the chief instrument makers in Germany who it was that bought Bozzi's dilator and had received the answer that certainly not those who had the best practices. Professor Strassmann had been present at a clinical demonstration held to show students the use of Bozzi's dilator and had seen the uterus ruptured during the dilatation. When the cervical canal was very narrow he thought one of the best methods was to dilate the cervix first with a metal dilator for four numbers and then plug the cervix and vagina with iodoform gauze. In cases where it was necessary to deliver as quickly as possible, such as in some cases of eclampsia, then he thought that cervical incisions were the best, but he wished to point out whilst incisions might do for home treatment vaginal Cæsarean section could only be safely performed in hospitals with properly trained assistants. He did not use Bozzi's dilator because of the bad results which followed its use.

Dr. A. L. GALABIN (London) thought that the original method of dilatation of the cervix, manual dilatation, was the best in most cases where this operation was needed, such as rigid cervix, inertia of the uterus, and early rupture of the membranes. Dr. Galabin mentioned the case of a patient who had been in labour for a week, and although vigorous pains had been present the os was so small that it would only just admit a sound. In this case he dilated with the sound and fingers and the child was born in 12 hours. Another good plan, easily combined with manual dilatation, was during the first stage to separate the membranes over the last two inches of the lower uterine segment. There was no danger in doing this, and he thought it a very good plan to adopt when the patient had gone over term and the child was large. The advantage of Bozzi's dilator was that it did its work well in the early stages of dilatation, whereas the mechanical effect of hydrostatic dilators, being proportional to the diameter of the canal, was very small or absent when the os was not dilated. On the other hand, in the later stages Bozzi's dilator was more dangerous, the cervix being much thinner, whereas the hydrostatic bags were much more efficacious. It was, therefore, good treatment to commence dilating with a Bozzi's dilator and after a while to use a bag. Vaginal Cæsarean section should be limited to hospital practice and skilled operators.

Dr. J. M. MUNRO KERR (Glasgow) thought that the advantage of discussing such a subject as this at so late a period, other countries having done so years ago, was that it could be examined more quietly and a better opinion could be formed. In the question of this kind two lives had to be considered, that of the mother and the child. The indications for rapid dilatation in the interests of the child were certain cases where its life was threatening, such as rigid cervix, placenta prævia, and some cases of eclampsia, when the most rapid means must be applied. On the other hand, in the interest of the mother it was always best to adopt the slowest methods. Dr. Kerr considered vaginal Cæsarean section to be the most dangerous of all the methods mentioned. It was in certain cases a most valuable operation but should only be performed in hospitals. Its difficulties varied with the period of pregnancy. It was very simple up to the sixth month, taking 15 minutes or so. Later than this the difficulties appeared, especially in bringing down the uterus, and at term it was very dangerous, there being great danger of injuring the bladder unless the vagina was enlarged by deep incisions. His experience of Bozzi's dilator was that, no matter how slow the instrument was used, lacerations were certain to take place. The only safe cases for its use were when the os had commenced to dilate. Another drawback was that the canal was never so dilated as appeared from the use of the instrument. In the later months of pregnancy Dr. Kerr preferred abdominal Cæsarean section.

Dr. F. EDGE (Birmingham) said that except in cases of great urgency he would not use Bozzi's dilator. He narrated a case in which after its use the bleeding was severe and the uterus was plugged. Ten minutes later the hæmorrhage returned but on taking the plugs out and pulling down the uterus with volsellæ the bleeding stopped. He then replugged the uterus and the same thing happened. It was then discovered that the bleeding was due to a lacerated uterine artery and that the traction on the cervix with the volsella kinked the vessel and so stopped the bleeding *pro tem.* He thought that just as safety bicycles were a great improvement on bone-shakers, so Bozzi's later instruments were a great improvement on the first, and perhaps the bad results obtained by some operators were due to a bad instrument having been employed. In hospital he thought that any method most suitable to the case should be employed. In private practice the best method was to dilate manually, wearing a well-greased indiarubber glove. Dr. Edge showed a small rubber bag which could be passed into any cervical canal fixed to the end of a stylet.

Dr. J. INGLIS PARSONS (London) thought that at full term there was not the slightest doubt abdominal Cæsarean section was better than vaginal Cæsarean section.

Dr. R. J. JOHNSTONE (Belfast) did not find Bozzi's instrument so dreadful. It owed its bad repute to its being used when not necessary. He did not regard lacerations of much import if asepsis was perfect.

Professor J. A. TEMPLE (Toronto) said that the Canadian practice with respect to the subject under discussion was of a conservative character, and they had been slow to adopt cervical incision and vaginal Cæsarean section. His experience was that in most cases a little patience and time were often all that was necessary. Professor Temple thought that a large number of cases of slow dilatation were due to the membranes being adherent to the lower uterine segment. With regard to Cæsarean section he would perform abdominal section every time in preference to vaginal.

Dr. T. WILSON (Birmingham) thought that a laminaria tent was one of the best things to commence dilatation with. He had performed vaginal Cæsarean section five times, twice in the later months of pregnancy. The first case was nine years ago, before vaginal Cæsarean section, as it was now termed, had been thought of. He was called to a case where a medical man had been dilating the cervix with Hegar's dilators at term, but instead of fixing the uterus with a volsellum he had done so with his hand, with the result that the uterus was torn away partly from the vagina. In the later months he did not find vaginal Cæsarean section more difficult than abdominal.

Dr. S. J. CAMERON (Glasgow) said that he was of opinion that the degree of damage done by Bozzi's dilator varied in different cases. Thus in an eclamptic case in which 55 minutes were devoted to cervical dilatation deep laceration was found to have occurred, whereas in another instance, when complete dilatation was gained in 20 minutes, the cervix was found to be unharmed. The amount of injury occurring seemed to depend on the consistency and rigidity of the cervix. His experience was that Bozzi's dilator was not indicated in cases of accidental hæmorrhage. He could not agree that lateral cervical incisions were always attended by risk from hæmorrhage as the uterine artery branched dichotomously, and clinically lateral cervical tears were seldom attended by severe bleeding.

Professor W. C. SWAYNE (Bristol) had used Bozzi's dilator many times in his own practice, with results pleasant and the reverse. The bad results were due to using it for full dilatation; it was much safer to commence with this instrument and finish with the hands.

Professor W. E. DIXON (Cambridge) was not an obstetrician, neither had he ever dilated a cervix, but lately he had been working on alcoholic placental extracts with Dr. T. Taylor and they had obtained one which caused marked contraction of the uterus and relaxation of the cervix. He thought that this drug might be of some value to obstetricians and might perhaps take the place of instrumental dilatation in some cases. The substance he had extracted seemed to have some relation to adrenalin which also produced similar effects. In pregnancy the cortex of the suprarenal glands was much hypertrophied.

The PRESIDENT of the section said that, although the discussion had brought out the fact that dilatation of the cervix at full term was occasionally called for, yet when specific causes came to be named there appeared to be no agreement. He did not think that rigidity of the cervix was ever an indication for adopting the drastic methods recommended.

He was responsible for the treatment of over 4000 labour cases a year. He had hardly ever dilated the cervix for rigidity and in the few cases that he had done so he had regretted it. Referring to Dr. Galabin's case, he suggested that the patient might not have been in labour at all and that the pains described as lasting for a week had been false pains due to neurosis.

Professor SWAYNE read a paper on

### *Chorion-Epithelioma.*

He commenced with a historical account of this disease up to date, and the cases were then reported that had been under the speaker's care. In the first of the cases the last pregnancy at full term occurred two years before the growth but ten months before a two months' amenorrhœa was followed by severe hæmorrhage and passage of clots which was probably an abortion. In the other case the symptoms occurred 17 months after the last full-time pregnancy but only ten weeks after a doubtful abortion. There were pulmonary symptoms in both cases. Pulmonary metastases, Professor Swayne thought, should not be considered as a contra-indication for radical operation. In the first case there were well-marked pulmonary symptoms and yet the patient recovered; in the second case, where the patient had similar pulmonary symptoms and died, metastases were found. Dr. J. H. Teacher's excellent photographs in the museum in Barnfield Hall of retrograding metastases in the lung showed that one of them was converted into fibrous tissue. Hence radical operation could not be considered to be contra-indicated.

Professor STRASSMANN thought that it was very necessary to keep patients from whom hydatid moles had been removed under careful observation as in so many cases chorion-epithelioma had developed later.

Dr. CAMERON had had two cases, in one of which pulmonary symptoms were well marked, and at the post-mortem examination retrograde changes were found in the metastases.

Dr. F. J. MCCANN (London) thought that the disease was not so rare as was generally thought. He had had five cases. He had known vaginal metastases disappear after a radical operation.

Dr. EDGE thought that the vagina should also be removed as well as the uterus in these cases.

### THURSDAY, AUGUST 1ST.

Dr. HERBERT R. SPENCER (London) opened a discussion on

### *The Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer.*

He argued that cancer of the uterus at an early stage of its growth was curable in a large proportion of cases by vaginal operations (high amputation of the cervix and vaginal hysterectomy) with a very small immediate risk to life. In more advanced stages it might be cured by the extended abdominal operation, which, however, had a higher immediate mortality than the vaginal operations. The desirable object was to get cases of cancer in the early stages, whatever might be the operation performed. Experience in this country showed that but a small proportion of patients presented themselves to gynæcologists at the beginning of the disease and that in most of them the disease was too far advanced for even the extended abdominal operation to give a chance of cure. This unfortunate state of things was due to: (1) the patient's ignorance of the early symptoms of the disease; (2) the practitioner's delay in examining the patient who presented the early symptoms of the disease (abnormal hæmorrhage or discharge); (3) the disinclination or refusal of the patient to submit to examination; and (4) to occasional difficulty in distinguishing between benign and malignant disease of the uterus. The remedy consisted in (1) diffusion amongst women over 25 years of age of knowledge of the early symptoms of the disease and of the fact that diagnosis could only be made by means of physical examination; (2) an appeal to all general practitioners to advise examination by finger, operation, and, if necessary, by removal of growth for microscopic examination in all cases of bleeding or discharge which might be due to cancer; (3) the better education of medical students in practical gynæcology; and (4) dilatation with tents and examination of the corporeal cavity with the finger, which were not less important than the microscopical examination of curettings in the diagnosis of cancer of the corpus.

Mrs. M. A. D. SCHARLIEB (London) thought that very often the medical man if he persevered sufficiently would overcome the reluctance of many of these women to be examined. A large number of cases admitted to Mrs. Scharlieb's ward were of an inoperable nature and she thought that great harm was done by operating on women in these late cases, because their early death or the early recurrence of cancer deterred the women in their neighbourhood from seeking early advice. In a dispensary she used to attend a large number of cancer cases used to apply for treatment and operation till one of them who was far advanced in the disease was operated upon and died very soon. The result of this was that the number of cancer cases attending immediately decreased. With respect to the recurrence of cancer, even if it did recur three, four, or five years after the operation, it was worth while operating that the patient might have this increase in her life. She had lately received a letter from the husband of a patient who had died six years after the operation from recurrence, in which he expressed great gratitude for the additional years of happiness that the operation had given him.

Dr. GALABIN thought that practitioners should be educated more thoroughly with respect to the early signs of cancer and that improvement in the number of cases sent early for operation might be expected in this way. The last case he had of cancer of the uterus was one which the general practitioner had been treating for two years as an erosion and had never had a consultation. The patient then left the medical man and her new attendant at once sent her for consultation. Dr. Galabin thought that all cases of erosions with bleeding should be sent to a consultant or examined microscopically. In cases of bleeding after the menopause where there was no evidence of cancer but where curetting did not relieve vaginal hysterectomy should be performed. Patients should also be told that hæmorrhage was not necessarily a symptom of the change of life. He thought that the great differences noted by Dr. Spencer in the results of various operations were due to the methods of operation. The best means of diffusing knowledge would be to send leaflets to nurses, midwives, and practitioners, and to give them to patients attending in the gynæcological departments of hospitals.

Professor STRASSMANN said that it had been found in Germany as the result of an appeal that at least 50 per cent. of cancer cases had not been examined by their medical attendants but that when they had applied for help they had only been given ergot or some other drug and douches. In Berlin they had sent out papers to the surrounding country. One paper was sent to the medical practitioners and an abstract of the principal symptoms of cancer was given; also a request that in any doubtful case a piece of the tissue should be cut out, put in alcohol, and sent to one of the members of the Obstetrical Society of Berlin. Lastly, it was stated that the medical man who discovered cancer early had the same merit as the operator. The second paper was sent to the midwives who in Germany attended 90 per cent. of the confinements, drawing attention to the fact that if they treated patients without sending them for examination they would be punished; that cancer began without pain and that cancer could be cured if treated early enough. He thought that in cases where there was a bad family history of cancer the members of the family should be examined occasionally. It was true that the dissemination of the pamphlet by Witer in East Prussia had caused an epidemic of "carcinoma-phobia," nevertheless he had seen many more cases after this circular had been distributed than before. Early recognition was better than a large operation.

Dr. WALTER W. H. TATE (London) thought that most of the objections to examination were due to the fact that the reasons were not put thoroughly before the patient. He never experienced much difficulty and would like to draw particular attention to the advisability of making both a vaginal and abdominal examination. He also wished to point out that in cases of mucous polypus accompanied with bleeding after the menopause, it was not safe to put down the bleeding to the polypus. In the cases he had seen there was carcinoma of the body accompanying mucous polypus of the cervix, the bleeding really being due to the former; and in one case there had been, in addition to the mucous polypus, carcinoma of the ovaries. He thought some appeal should be sent to every practitioner to secure early recognition of these cases.

Dr. MCCANN proposed that a committee of the section should be formed to frame a leaflet dealing with the early recognition of cancer, which should be sent out to practitioners, nurses, and midwives.

Dr. INGLIS PARSONS seconded Dr. McCann's proposal, but he thought that the public also must be educated, and that it was no good educating practitioners, midwives, and so on, if the patients would not consult them.

Dr. WILSON said that he did not think that practitioners were often clever enough to diagnose early cancer even if they did examine. In his part of the country he had noticed that 50 per cent. of the cases had not been examined at all, and that of the remaining 50 per cent., 25 per cent. had not been diagnosed. He therefore thought the great thing was to instruct the practitioner. As an example of what instruction might do he might say that whereas the average number of operable cases coming under his notice up to 18 months ago had been gradually rising from 14 per cent. to 18 per cent.; during the last 18 months since he had read a paper before the local medical society on the early recognition of cancer the percentage had risen to 30. He also instructed nurses and midwives in his lectures, but did not think that leaflets should be sent out to the general public.

Dr. MUNRO KERR pointed out that the proportion of operable cases was higher when associated with pregnancy and opined that the cause of this was due to the more frequent examinations that were made in women during pregnancy, labour, and the puerperium. He thought a large number of women did not apply for advice because they were frightened of being told that they had cancer.

Dr. JOHNSTONE regarded bleeding and discharge as late signs of cancer and not early as generally given in the text-books. He did not know about the early stages here, and it should be remembered that in many cases the gynæcologist was unable to diagnose the disease before it had become inoperable. He thought that it was a good thing to alarm the medical profession, and it was not necessary that any general practitioner should be able to diagnose cancer of the uterus so much as that when any symptoms or signs arose he did not understand he should send the case for further advice.

Dr. EDGE said that if any leaflet were sent out the greatest possible care must be taken with its phraseology. Many patients did not care to be examined because they were afraid of being laughed at by the medical attendant, so that they put up with slight symptoms. The opportunity for examination should be made so easy by having female gynæcologists in different centres that women would go to them for the least trouble. Dr. Edge thought that no woman should be given the certificate of the Central Midwives Board unless it could be proved that she was able to insert a speculum into the vagina, expose the cervix, and tell whether its appearance was normal or otherwise. They might be accused that all these precautions were being advocated to benefit medical men pecuniarily, but no one made such a suggestion against dentists who advised the periodical examination of the teeth.

Dr. JOHN GILCHRIST (Glasgow) pointed out that no allusion had been made to the utility of physiological research in these cases. He thought the profession was influenced by a morphological bias. Before cancer made its appearance some physiological changes took place in the body; for instance, it had been noted in France that long before the appearance of cancer a marked inhibition in the secretion of urea took place.

Mr. CHARLES RYALL (London) said that it was known that highly satisfactory results followed radical treatment in the early stages. The anatomical position of the cervix and the free communication between its fundus and the vagina made carcinoma of this organ almost an external growth and the surgeon saw the majority of cases only when the disease was too far advanced for radical operation in spite of this fact. Of the last 100 cases of uterine cancer under his care at the Cancer Hospital, in only 24 was he able to attempt to remove the disease in spite of an extensive abdominal operation. The duration of the symptoms in the operable cases varied from hæmorrhage of one month's duration in one case to three years in two other cases. Among the 24 cases 15 had symptoms for six months or less, ten of these being for three months or under, while six had symptoms of from one to three years, all of the last class being in women who had passed the menopause. The cause of delay in seeking advice was in most cases ignorance. The public regarded cancer as an incurable disease accompanied by pain, and pain being regarded as the principal symptom the first sign, hæmorrhage, was disregarded, so that by the time pain had appeared the case was inoperable. The medical practitioner was also to blame in many cases and in several cases that had come under his observation no proper examination had been made. As a remedy he suggested (1) improvement in the teaching of the student and (2) education of the public in regard to the symptoms.

Dr. CAMERON thought that one reason why the public did not seek relief sooner was due to the fact that they considered pain to accompany disease in all cases, whereas it was a late symptom in carcinoma of the cervix. He advised (1) more thorough instruction of the students; (2) instructions to nurses and midwives in the symptoms of the disease; and (3) that central laboratories should be established to which practitioners could send curettings for examination by a skilled cancer pathologist. He maintained that there were two great classes of operative cases: (1) cases in which a cure might result and (2) cases in which operation was undertaken to relieve the patient of her distressing symptoms and make her closing stages more comfortable.

Dr. G. RICE (Derby) said that in his part of the country for years the cases had been sent to hospital by practitioners but since the passing of the Midwives Act a large number of people had passed out of the practitioners' hands for their confinement and had gone to midwives and that it was this class, therefore, that it was now necessary to instruct. The Central Midwives Board should be asked to see that a knowledge of the early signs of cancer was included in the schedule for examination. He also thought that midwives should be trained longer; whilst in Germany the training took three years here it took three months.

The PRESIDENT of the section was of the opinion that every nurse and midwife and most lay women knew that the early signs of cancer were bleeding and a discharge. The fault of early recognition of these cases was due to the medical attendant not being able to diagnose them. Many of them refrained from making vaginal examinations because they had no confidence that they would be able to make any diagnosis when they had. This state of affairs would never be remedied until the student was compelled to devote a larger portion of his curriculum to the study of obstetrics and gynæcology. Every medical student should attend an obstetrical and gynæcological hospital for six months and by the rules of the Irish colleges they had to, but the thing was a farce. There was no rule to make them attend so many times a week or be signed up by their teachers and a large number when they had attended 14 days and finished their cases did not go near the place again. He did not believe much in the idea of sending out pamphlets.

The PRESIDENT then put the following motion to the meeting, which had been proposed by Dr. McCANN and seconded by Dr. INGLIS PARSONS:—

> That a committee of this section be formed to consider what steps may be taken to disseminate a knowledge of the early signs and symptoms of cancer of the uterus.

An amendment to this was proposed by Dr. WILSON, seconded by Dr. SPENCER, and carried *nemine contradicente*:—

> That the Council of the British Medical Association be requested to appoint a committee to consider the best means of disseminating knowledge of the importance of the early recognition of uterine cancer.

This was then put as a substantive motion and was carried and the meeting terminated.

## PSYCHOLOGICAL MEDICINE.

### WEDNESDAY, JULY 31ST.

The proceedings commenced with

*The Presidential Address,*

delivered by Dr. T. CLAYE SHAW (London). He acknowledged the honour of being appointed president of the section and felt the responsibility of the office, which, however, he accepted with pride and gratification. The importance of these meetings must be regarded as milestones of progress and as a record of the relation of the specialty at a definite period. Their attitude of to-day was one of expectant attention, that their support and foundation was deeply fixed on the common bedrock of vital bodily processes, and that they really pulsated with all the vibrations of the medical system. This made them confident that so long as they were true to their conditions in their relations with the medical and social environment they must continue to progress. They must try to unravel some of the mysteries which were at present inexplicable and which seemed to be of a different order from other results of vital processes. Had there been any indications during the last year that they were nearer now than they were to the true understanding of what mind was, whether as a separate entity, as a result of brain action, or as a set of phenomena acting in a psycho-physical parallel? The public asked for illumination as to the existence of telepathy and other allied conditions. Did such communication between one mind and another exist apart from the ordinary channels of sense or was it a matter of coincidence or chance? They were now more tolerant towards the possibility of such inter-communication. Dr. J. H. Hyslop had pointed out that ethereal vibrations started by a thinker might possibly be perceived and interpreted by another. Such a psychologist as Stout could see "no sufficient reason for being peculiarly sceptical concerning communications from departed spirits," and Sir Oliver Lodge was avowedly at one with those who thought they were on the threshold of linking up material and psychical processes. No scientific experimental demonstration had, however, so far come to hand. The Church and esoteric philosophy, treating mind as a separate entity, had not advanced them one whit but there were signs of a *rapprochement* between theology and physical science. The strictures of the writer in the *Times* who reproached them with the inadequacy of their treatment of mental disorders were both inaccurate and narrow—inaccurate because never so much as lately had the influence of bodily conditions upon mental phenomena been so energetically insisted upon, and narrow because they *must* investigate mental phenomena. Just as they used the material pharmacopœia for ridding the body of lethal products, so did they use spiritualised forms of matter, otherwise mental processes, as curative agents—e.g., in hypnotic suggestion. Their conceptions as to the nature of insanity had undergone a change. They had long recognised that brain disease might exist without insanity and it now seemed as if the converse were also true. The group of toxic insanities in which were included such conditions as dementia præcox, folie circulaire, puerperal insanity, &c., might be compared with what was described as toxic neurasthenia; they might call the members of the one group insane, whilst the others were not considered so, yet there was no radical difference in the symptoms. They were confronted daily with people who were said to be not certifiably insane because a wider view was now held as to what insanity was than formerly. The question of a toxin, where it was and what was its nature came now before them. There had been a revolution in their estimation of causes and pathological processes since the study of micro-organisms was seriously undertaken. The future of psychological medicine was very hopeful and they were nearer than ever before to the rational treatment of the insane. It appeared, however, that bacteriological science was not yet sufficiently advanced for the application of general principles. For instance, a boy, aged 14 years, was recently under notice in an acute state resembling dementia præcox, due to a toxic condition of tuberculous nature, yet it would appear that injection by tuberculin would at present be of little avail. The laboratory should no longer be regarded as a fad. It was a necessity in the equipment of the modern asylum, and authorities must recognise that the splendid results achieved by Mott, Bevan Lewis, and others compelled the election of men trained in the modern school and of plenty of them. A more intelligent separation of cases must be exercised, that whilst it was right to provide for the care of the large numbers of incurable cases on a less elaborate scale, nothing must be spared on the scientific elaboration of hospital wards for acute cases. The recognition of the hospital system was the correct one, and the establishment of mental cliniques in connexion with the out-patient departments of general hospitals was in the line of true progress. The amount of sedatives and narcotics given in general practice in the early treatment of acute mental affections was surprising. This partly depended no doubt on the difficulty which confronted the general practitioner in the present state of the law, which this association and its allied societies were doing their utmost to amend. Asylum treatment had conclusively demonstrated the danger of the continuous administration of sedatives and narcotics as therapeutic agents. It had also elucidated many of the problems of the alcohol question. The need for new legislation in connexion with alcoholics was a pressing one. The question of responsibility in those for whom insanity was pleaded in criminal cases seemed to be entering on a new phase, and that the degree of responsibility was the question by which the final judgment should be ultimately determined. There was an indication that the principles laid down in Macnaughton's case were no longer those which advanced medico-legal psychology could receive. Democritus of Abdera, when he was found cutting up animals, presumably alive, said: "I do cut up these poor beasts to find out the causes of madness and melancholy, their distempers, varieties and follies, yet such proof were better made on man's body, if my kind nature would allow it." Man's body was now anatomised when he was dead and his mind when he was alive, and much was found to explain the connexion between the two, yet little was understood of the man when his body was alive but his mind was dead. More was, however, known at the present day, though it had taken 2000 years to arrive at this knowledge—verily, *ars est longa.*

Dr. F. W. MOTT (London) read a paper on

### *Alcohol and Insanity.*

His experience of many years as physician to Charing Cross Hospital and as pathologist to the London County Asylums enabled him to study the effects of alcohol on the sane and the insane in the wards and in the post-mortem room. He was struck by the fact that whereas cirrhosis of the liver with ascites was relatively common in the wards and post-mortem room of the hospital, he had but once seen a case of very advanced cirrhosis with ascites at the asylums, and that was in the case of Jane Cakebread, who was convicted of drunkenness nearly 400 times before she was found incapable of taking care of herself and certified as insane. The causes of drinking were infinitely varied and bound up in the temperament and character of man. From the time of Noah wine had been used by the nations which had advanced to the highest degrees of prosperity and civilisation, and it was related in the Jewish Mashal that when Noah came to plant his vineyard Satan came to join him and asked, "What are you planting?" He replied, "A vineyard." "For what purpose?" rejoined Satan. "Its fruits," answered the patriarch, "are sweet, whether used fresh or dry, and wine is made from them which rejoices the heart." "Then shall we two work it together," observed the enemy. The effects of alcohol depended not only on the quantity and quality taken and the length of period, but upon the personality of the individual. Dr. Mott exhibited lantern slides showing the statistics relating to alcohol and insanity in the London county asylums. He observed that the percentages of admissions in which alcohol was the asserted cause of insanity varied considerably in the different asylums in the same years and in the same asylum for different years. Thus in 1902 alcohol was the assigned cause of 25·6 per cent. of the admissions to Hanwell Asylum and to Claybury Asylum, 11·2 per cent.; but in 1906 28 per cent. of the admissions to Claybury Asylum intemperance was the assigned cause, while at Colney Hatch Asylum it was 14 per cent. But when an inquiry was made into cases many were found to be inebriates or suffering from primary dementia, being subjects of an inborn tendency to mental disease. The notes showed heredity and epilepsy quite as frequently in these so-called alcoholic cases as in other forms of insanity. In the histories of these cases inherent instability in the form of neuropathies, imbecility, criminal degeneracy, epilepsy, recurrent mania, or melancholia, brain disease, and occasional head injuries existed. Frequently was revealed the fact that the patient had taken to drink on account of domestic troubles, bodily illness, loss of money, and breaking up of the home, and such conditions. The types of insanity of which alcohol was the essential cause were not so frequently seen in asylums as was generally supposed. They differed but little from cases met with in hospitals. They were delirium tremens, mania a potû, and polyneuritic psychosis, or Korsakoff's disease. No doubt many such cases were kept in infirmaries. Alcoholic insanity met with in asylums might be divided into two great groups: (1) those with a locus minoris resistentiae in the nervous system; and (2) those in which chronic alcoholism existed with some other factor such as syphilis, microbial toxæmia, arteriosclerosis, head injury, or organic brain disease. The subjects of Class 1 could very seldom drink sufficient alcohol to produce advanced cirrhosis, whereas Class 2, which included cases of an inborn stable mental organisation, exhibited pathological changes affecting the liver. At Charing

Cross Hospital the notes of the necropsies upon 1099 adult cases gave 85, or 7·7 per cent., cases of cirrhotic liver. At Claybury Asylum the notes of 1271 necropsies were investigated and there were only 23 cases, or 1·8 per cent., of hepatic cirrhosis. Dr. Mott agreed with Dr. W. C. Sullivan and Mr. W. Bevan-Lewis that alcohol as an efficient cause of insanity was nothing like so great as the published reports of the Commissioners in Lunacy indicated. Inland and agricultural communities were the least inebriate but had the highest ratio of pauperism and insanity, while maritime, mining, and manufacturing communities were the most intemperate and revealed the lowest ratios of pauperism and insanity. Dr. Mott proceeded to discuss the action of alcohol on different individuals, and pointed out its effect on the business man of ordinary mental stability who on account of his occupation became the victim of the vicious habit of indulgence to excess. That alcohol inflamed the emotions, converting anger into fury and fear into despair, thus leading to homicidal and suicidal tendencies and crimes of a sexual character. He remarked that often alcoholics were skilled workmen and artists, the result of actions becoming subconscious and habitual by constant repetition. The æsthetic feeling which was last to come evolutionally, therefore normally the first to go, might, owing to its constant activities in associated memory, persist when the moral sense had gone. It was sometimes urged that artistic geniuses used alcohol in excess, and that their æsthetic feelings and passions had been given full play without restraint. But poets were born and not made and their imagination persisted in spite of alcohol. Dr. Mott showed on the screen sections of the cortex of normal brain, the brain of a case of polyneuritic psychosis, and of a case of acute general paralysis. He discussed the predominant features of the varieties of mental derangement associated with alcoholism. He stated that if hallucinations and delusions persisted whilst the mind otherwise became clear it was probable that alcohol only played a subordinate part. The patient might be depressed or excited according to his temperament. The majority of cases who either did not recover speedily or not at all exhibited signs of depression and frequently they drank because they were miserable and had troubles. To ascertain whether alcohol was the essential cause of insanity it was desirable to look for those characteristic signs of alcohol poisoning found in delirium tremens and polyneuritic psychosis. In conclusion, he called attention to the effects of alcohol in the spread of venereal disease. Syphilis was often acquired as a consequence of alcoholic intoxication. It was noteworthy that intemperate women were frequently sterile or had a high birth-rate and a high death-rate. He considered alcohol and venereal disease allies in destroying the offspring of those who were unable to drink in moderation. He maintained that while syphilis and drunkenness were continually destroying neuropathic stocks they were also continually producing them, for the surviving offspring much more frequently developed neuroses and psychoses than the offspring of healthy parents. How far alcohol acted in tempting the weak-minded to destruction, whilst the strong-minded persisted, was a matter of speculation. Those nations that had drunk alcohol for ages past were of greater brain power, though not of better bodily physique than the Mahommedans who took no alcohol.

Dr. C. MERCIER (London) felt that our previous ideas as to alcohol producing insanity were no longer tenable. He had always insisted that the influence of the personality of the individual was all-important. The same doses administered over the same time produced entirely different results. As visitor to Aylesbury Reformatory for Inebriates he had experience of habitual drunkards of pronounced character. It was not the amount taken but the little that had effect. He felt we were more temperate than formerly and there was no need to be pessimistic as to the future of the English race. He considered that many cases of insanity were due to syphilis in ancestors which affected remote offspring.

Dr. E. W. WHITE (London) commented on the rareness of cirrhosis of the liver met with in asylums. He had only met with about six cases in 33 years. He regarded alcoholism often as an early symptom of insanity and that statistics had but little value.

Dr. P. W. MACDONALD (Dorchester) was glad to find Dr. Mott supporting his views expressed in his recent address as President of the Medico-Psychological Association. He emphasised the fact that in districts where there was a high ratio of insanity to the population there was a low ratio as to alcoholism, and that the converse also held good.

Mr. HERBERT G. SHORE (Newquay) expressed appreciation of Dr. Mott's paper and commented on some of the remarks of Dr. Mercier.

Dr. H. M. HURD (Baltimore) stated that in examining large institutions for the insane he could not find alcohol as a cause of insanity in more than from 5 to 10 per cent. of cases.

Dr. F. PETERSON (New York) concurred in the fallacies derivable from statistics. He cited the alcohol test used in Germany for differentiating pathological from normal drunkenness. He considered that alcohol weeded out degenerates, although the process was a slow one.

Professor W. D. HALLIBURTON (London) spoke of alcohol from the physiological standpoint. He regretted the attitude taken by total abstainers, which was against all common sense.

Professor R. J. ANDERSON (Galway) spoke of the different effect of alcohol on the mucous membrane of the stomach in various people and believed that the most beneficial narcotic effects occurred in cases of brain and muscle fag.

Dr. A. T. SCHOFIELD (London) mentioned that all total abstainers were people of pronounced and extreme views.

Dr. G. M. ROBERTSON (Larbert) still regarded alcohol as the most important single factor in the causation of insanity in men.

Dr. D. YELLOWLEES (Glasgow) did not wish to glorify the use of alcohol and regarded it rather as a bane than a blessing to mankind. He cited the case of a child begotten by a father in a state of alcoholism which led to the parent reforming his habits ever afterwards.

Mr. A. N. DAVIS (Exminster) stated that in the county of Devon the alcoholic cases were admitted to the asylum chiefly from Devonport where the wages were higher.

Dr. W. F. MENZIES (Cheddleton) spoke of the use of the terms "epicritic" and "protopathic" as applied to the two types of alcoholism.

Dr. F. W. EDRIDGE-GREEN (Hendon) stated that in his practice he found bromides and alcohol as most useful therapeutic agents.

Dr. L. R. OSWALD (Glasgow) said that alcoholism and weak-mindedness were more prevalent in those parishes of Glasgow where public-houses were most numerous.

Dr. T. W. MCDOWALL (Newcastle) regarded Northumberland as one of the most drunken counties in England and it also had a greater proportion of criminality, yet there was a smaller percentage of insane to sane of the population.

The PRESIDENT summed up the discussion and admitted that though they might do without alcohol, yet there were occasions when it would appear certainly to have saved life.

Dr. MOTT replied to the various speakers and referred to certain statistics of abstainers sent to asylums and also mentioned some recent experiments by Dr. W. H. Rivers of Cambridge combating the view generally held of the baneful influence of alcohol in mental fatigue. He considered that people of real civic worth were able to work and to work well with the moderate use of alcohol.

### THURSDAY, AUGUST 1ST.

In a paper on

### *Three Cases of Periodic Dementia,*

read by Dr. MERCIER, he said that the term "dementia" was used in two entirely different senses. It was used to express the condition of permanent damage of brain and consequent defect of mind and conduct: in fact, those examples of human wreckage that constituted the bulk of inmates of asylums. But it did not include all the hopelessly insane. Those who exhibited active symptoms and those with delusions were called chronic mania or paranoia. A chronic maniac, however, who had long periods of quietude and short periods of excitement was a dement. But dementia had another meaning. When it included cases deprived of mind only temporarily it would appear that the term "anoia" would be more suitable for such conditions had not this term been otherwise applied. Dementia as a rule was used to connote a deep dissolution of mind. But every case of insanity might be regarded as a case of dementia. Loss of control revealed dementia; that which was taken away allowed the remainder to act disorderly. The following three cases agreed in the periodical removal of the higher faculties of mind. The first case was that of an anæmic girl, aged 17 years, who was childish for her age, and who had not yet menstruated. Every two or three months she became "dull in her head" and slept the greater part of the day. Since she had been under treatment menstruation had become established and improvement had ensued. In the second case, that of a girl, aged 17 years, who had been bright at school, nothing odd had been noticed until she menstruated at the age of 15 years, since which time she had been strange at every period. She became excitable and talkative and quite changed from her ordinary retiring disposition. The subject of the third case, a young man, aged 21 years, had always been feeble-minded, but for the first week in every month he was much worse—he would then become excited and would scream and imagine that he saw things in the room. These attacks came on and cleared up suddenly. All three cases had benefited greatly from anti-epileptic treatment, the attacks becoming much less frequent.

The President referred to the difficulty of classification in mental disease and believed that loss of control was the principal element in all cases of insanity. He cited Dr. Wigan's book on double consciousness written over 40 years ago as closely bearing on the cases quoted.

Dr. Yellowlees remarked on Dr. Mercier's paradoxes and said that he could hardly call any of the cases examples of dementia.

Dr. White asked whether the attacks of so-called dementia occurred at regular intervals.

Dr. Hurd questioned the advantage of using the term "dementia" to describe the conditions present.

Dr. R. H. Cole (London) suggested that "stupor" was frequently used as a term for recoverable forms of so-called dementia.

Dr. R. Cunyngham Brown (Parkhurst) asked whether amnesia was present in any of the cases.

Dr. Robertson preferred the term "periodic mental deterioration" as used by Spitzka for the cases in question.

Dr. MacDonald agreed entirely with Dr. Mercier in the use of the term "dementia."

Dr. Mercier replied briefly.

## DENTAL SURGERY.

### Wednesday, July 31st.

Mr. J. McKno Ackland (Exeter), the President of the section, delivered his opening address. He briefly reviewed the past work of the section and indicated some of the problems which still required elucidation. He then called upon

Dr. G. F. Still (London) to open a discussion on

*The Causes, Defects, and Treatment of Dental Disease in Children.*

Dr. Still discussed the relationship of dental caries, abdominal pain, lymphadenitis, and certain habit spasms.

Mr. Edmund Owen (London), in continuing the discussion from the point of view of a general surgeon, emphasised the deplorable dental condition of children associated with artificial feeding, particularly the early use of soft food.

Mr. J. G. Turner (London) continued the discussion from the point of the pathology of deformities of the enamel of children's teeth, illustrating his observations by lantern slides.

The discussion was then taken up by Dr. E. Cautley (London) and was continued by Dr. G. A. Sutherland (London), Mr. Kenneth W. Goadby (London), Mr. R. Denison Pedley (London), Mr. W. R. Ackland (Exeter), and Mr. C. E. Wallis (London).

On the motion of the President the discussion was adjourned until Thursday, August 1st.

The President moved that a telegram of congratulation should be sent to the Stomatological Association of France which was holding its first meeting in Paris on August 1st. The motion was carried by acclamation.

## TROPICAL DISEASES.

### Wednesday, July 31st.

Mr. James Cantlie (London), the President of the Section, gave an opening address in which he reviewed the

*Changes in the Aspect of the Study of Tropical Diseases*

during the two years since the Section last met. He stated that during the last quarter of the nineteenth century the study of bacteria usurped their attention, but the advent of the twentieth century found the protozoa assuming a foremost position in tropical pathology. In the schools of tropical medicine in London and Liverpool lectureships on protozoology, parasitology, helminthology, and entomology had been established and were found a necessary adjunct to the study of diseases in the tropics. These schools would prove but the pioneers in regard to this new departure; the general medical schools throughout the empire would have to follow the example set, and at an early date, if they were to fulfil their purpose efficiently. There was a risk in appointing men other than medical men to these lectureships, as the practical side of the teaching would be thereby endangered and the purely scientific aspect of the study elevated to a position beyond practical needs. Mr. Cantlie urged the necessity of lectureships on geographical pathology to encourage a more intimate study of the geographical distribution of the animals by which man became infected by disease. He stated that there was scarcely any of the domestic animals or of the house, body, or bed pests which were not found to be concerned in the transmission of disease to man. They had known for a long time that the dog communicated hydrophobia and hydatids to man, that the horse infected man with glanders, and the pig gave trichina; but during recent years the list had extended. The tuberculosis of cattle and man was believed to be co-related; Malta fever was conveyed to man by goat's milk infected with the micrococcus melitensis; malaria, filaria, and yellow fever were caused by the bites of infected mosquitoes; rats by their infected fleas conveyed plague to man; trypanosomes were met with in many animals and found their way to man by blood-sucking flies; piroplasmata were transmitted from one animal to another, and possibly to man by ticks. Fresh water cyclops communicated the guinea worm; the bed-bug, the louse, the cockroach, and even the house-fly were all known as intermediary hosts or as the transmitters of disease to man. In fact, there was scarcely an animal, whether it be a domestic animal or one belonging to the group they were wont to style verminous, that was not capable of infecting man. This was a new feature in pathology; the dangers from these animals had long been suspected but only now was scientific proof forthcoming. The abhorrence of vermin was inherited: it was out of all proportion to the direct trouble or inconvenience these animals caused and was no doubt due to the knowledge of their forefathers, empiric it might be, and more or less allied to superstition, but none the less practical, that, in driving away or exterminating these parasites wholesale, not only the pests themselves, but the diseases they communicated were being got rid of as well. There could be no other explanation of the extraordinary intolerance of mankind towards these so-called vermin. Mr. Cantlie then reviewed some of the important work done recently in tropical diseases. Malta fever had been shown to be due to imbibing goat's milk infected by the micrococcus militensis. Sleeping sickness had been proved to be caused by the bite of a tsetse-fly infected with trypanosomes. The association between blackwater fever and the exhibition of quinine noted by some observers was largely refuted, inasmuch as returns showed that blackwater fever occurred more often in persons who did not take quinine as a prophylactic than in those who did. The fresh water cyclops had been well-nigh conclusively proved to be the intermediary host of the guinea-worm, and Dr. Leiper's observation that whilst the cyclops was digested in an acid solution the embryos of the guinea-worm were stimulated to greater activity seemed to show that the embryos enter the human body by way of the mouth and stomach. Beri-beri had recently been studied by Dr. W. L. Braddon, who stated that when rice of the "cured" or fresh sort was eaten beri-beri did not result, but when "uncured" rice was consumed for any length of time beri-beri might attack people of any nationality. The rat-flea theory of plague infection had been recently conclusively proved. Their knowledge of filaria perstans and of filaria Philippinensis had been added to by Dr. Creighton Wellman, Dr. P. M. Ashburn, and Dr. C. F. Craig respectively. Dengue fever was held by Dr. Ashburn and Dr. Craig to be communicated by the Culex fatigans in the Philippines. Schistosomes had gained in importance as factors in disease and the differentiation between the terminal spined ovum and the lateral spined ovum anticipated by Manson had now been confirmed, the former, the Schistosomum (bilharzia) hæmatobium, being essentially the parasite of the genito-urinary tract, the latter, the Schistosomum mansoni (Sambon), inhabiting the alimentary tract. The greatest additions to their knowledge, however, were found in regard to the hæmoprotozoa. To this group were referred the hæmogregarines, the plasmodidæ, the schaudinnidæ (Sambon), which included the spirochætæ, the leucocytozoons, and treponema, and lastly the hæmoproteidæ, including the Leishman-Donovan bodies, the trypanosomes and babesia.

Professor W. J. R. Simpson (London) opened a discussion on the

### *Best Methods of Carrying out Anti-malarial Sanitation, with Special Reference to such Plans as may be Most Suitable for Populations in the More Primitive Stages of Civilisation.*

He reviewed the various methods of anti-malarial sanitation and showed the efficacy of drainage as illustrated in India, Port Swettenham, and Klang. He insisted that different conditions demanded different modes of applying anti-malarial sanitation. He notified the artificial conditions favouring malaria and especially insisted upon controlling engineers and contractors while carrying out public works in malaria districts. He cited the American method of preventing disease by the systematic application of hygienic measures as one well worthy of imitation.

Professor Hans Ziemann (Cameroons, West Africa) read a paper on the

### *Prevention of Malaria in Uncultivated Districts.*

He stated that they could practise general malarial prevention (1) by extirpating the parasites in man by (*a*) quinine prophylaxis of those infected with malaria, and (*b*) by killing the parasites which invaded man at the beginning of their development and before a fever attack had set in (i.e., real quinine prophylaxis); (2) by extirpating the mosquitoes which conveyed malaria; (3) by protecting man against the bites of malaria mosquitoes; and (4) by endeavouring to raise the resisting power of malaria-infected people by social prophylaxis, by better feeding, housing, clothing, and by instruction of the nature of malaria to the general public. He contended that an absolute protection against malaria, that was, against the first infection, was not to be effected by quinine alone, and one must endeavour with the smallest possible doses of quinine to afford what protection was possible.

Major A. H. Nott, I.M.S., related his experience in Murshedabad, India, of a campaign against malaria by preventing mosquito breeding in the neighbourhood of dwellings.

Dr. W. T. Prout, C.M.G. (Liverpool), stated that it was essential that the medical officers in West Africa must have more executive powers granted them if real progress was to be made in the elimination of disease in West African colonies.

Dr. H. Marcus Fernando (Ceylon) described the difficulties of the application of anti-malarial measures in Ceylon.

Dr. Andrew Balfour (Khartoum) said that malarial sanitation in the Sudan was becoming more difficult owing to the increase in area of cultivation by irrigation due to the increased size of farms owned by capitalists taking the place of small holdings. It was satisfactory, however, to note that legislation had been introduced for the regulation of the irrigation channels whereby they could be emptied systematically owing to their being placed on a higher level than the surrounding fields, and that leakage and accumulation of pools of water in the channels were prevented. Rice cultivation, moreover, was kept at a distance (one mile) from the neighbourhood of the town or village.

Dr. Louis W. Sambon (London) considered that almost all practised methods of malaria extinction were apt to be temporary merely and that some more thorough and permanent method of dealing with the matter required to be introduced. They had examples of the disappearance of malaria from England and Holland and many other places in Europe and India, the explanation of which was to be found in hyperparasitism; Ross's black spores were a hyperparasite which attacked the malaria organism within the stomach of the mosquito and destroyed it.

Major G. T. Birdwood, I.M.S., pointed out the conflict between the economic and commercial aspects of malaria extermination and considered drainage to be the chief means to hand.

Sir Patrick Manson insisted upon the importance of educating the children in native schools in elementary hygiene and considered that it was also necessary for medical men to cease calling officials fools because they did not fall in with their ways of thinking. The rôle of the medical man was to teach the meaning of recent investigation in regard to the elimination of disease to all and sundry who came within his sphere of action. Sir Patrick Manson also upheld the necessity for further investigation, especially in the endeavour to find out the explanation of the absence of malaria in certain districts, in order to imitate the conditions in infected areas.

Lieutenant-Colonel G. M. J. Giles, I.M.S., considered that too much attention should not be devoted to the differentiation of mosquitoes when malaria was rife in any district but that all mosquitoes should be exterminated. The habits of mosquitoes varied in different places: some throve in fresh water, some in brackish water, and some in salt water; were the conditions of life of these mosquitoes better known the question of mosquito extermination, at any rate in coast towns, could be more scientifically dealt with.

Major Leonard Rogers, I.M.S., gave a Lantern Demonstration of temperature charts illustrating the curves in various Indian fevers, including malarial fevers, seven-day fever, three-day fever, typhoid fever, and kala-azar.

## DISEASES OF CHILDREN.

### Wednesday, July 31st.

After some brief remarks by the President, Mr. A. H. Tubby (London), outlining the business before the section,

Mr. D'Arcy Power (London) opened a discussion on

### *The Diseases and Displacements of the Testicle.*

He grouped the subject under the headings of tubercle, syphilis, malignant disease, innocent tumours, and teratomata. The displacements, he said, were due to faulty processes of development. In regard to tubercle, most of the swollen testicles seen in very young children in the out-patient rooms at hospitals were due to tubercle growing in tissues which had been prepared for infection by changes due to congenital syphilis. He asked whether it was certain that tuberculous inflammation of the testicle ended in atrophy and if children suffering from this form of disease were more or less likely to become the subjects of spinal caries. Syphilitic inflammation of the testicle was commoner in young children than tuberculous orchitis and the tunica vaginalis was so frequently involved that a hydrocele was of almost constant occurrence. Absence of pain caused the condition to be overlooked in the majority. Wasting of the testis was a frequent consequence. Were there any observations as to retardation of puberty consequent on this atrophy? Teratomata were due either to dermoids or sebaceous tumours. Sarcoma of the testicle stood in need of further investigation in the light of Mr. Foulerton's recent work. Was it not possible that some of the cases grouped as sarcoma were in reality examples of carcinoma? Mr. Power was not satisfied with the results of orchidopexy in cases of undescended testis and now advised removal of the testicle in nearly every case where the organ was retained in such a position that it was exposed to injury, especially if there was evidence of a hernia. When no hernia was present he advised the parents to wait till the child was seven or eight years old in the hope that the testicle might descend into the scrotum as the child grew. He asked opinions on the following points: First, as to the indication for operating when the testicle lay at or near the external abdominal ring; secondly, as to the advice which should be given when both testicles were undescended; and, thirdly, as to the most appropriate time for operating when there was no hernia. He also alluded to the treatment of ectopic testicle, and finally pointed out the frequency with which hydrocele occurred in children, the ease with which an erroneous diagnosis was made, and the means by which such mistakes were best avoided.

Mr. Russell J. Howard (London) said that torsion occurred both in the fully and in the imperfectly descended testicle and in 11 cases recently collected by him the accident was about equally divided between the two conditions. Of the undescended ones four were in the inguinal canal and one had been replaced in the abdomen; the ages of the patients extended from four months to 24 years. Such causes as could be ascertained were violent exertion, straining, misapplied taxis, and suddenly crossing the legs, but in two instances the accident occurred while the patient was asleep in bed. The symptoms somewhat resembled those of strangulated hernia but vomiting was less persistent, flatus escaped, and the bowels reacted to purges or enemata, and there was usually a rise of temperature. The testicle became swollen and very painful and there developed a blood-stained hydrocele. Suppuration, gangrene, or atrophy might result. The twist occurred inside the tunica vaginalis and there was commonly a persistent mesorchium. He had met with every degree of severity from a half turn to four complete revolutions. He recommended removal when the testicle was imperfectly descended and complicated by hernia. The organ was then functionless and repetitions were avoided.

Mr. W. E. Dixon (Lowestoft) briefly reviewed the subject of organo-therapy, alluding to Brown-Séquard's original experiment with the fresh testicular extract of the dog, which restored him to youth and vital energy. Various results had been obtained but they were all worthless scientifically, since they ignored psychical effects and those due to the action of nucleo-albumins. The spermine of the Russian, Dr. Poel, fell under the same objection. There were now known three definite alkaloidal bodies—adrenalin, secretin (from the duodenum), and thyroidin—of which the first two had been obtained in crystalline form. The corresponding body from the testis had not yet been isolated but he prophesied it would one day be separated in crystalline condition. It would be more universal in effect than the preceding which already applied to all vertebrates, since the testicular substance would apply to the invertebrates likewise. He cited the case of the hermit crab in which a parasite (peltogasta) inclosed and destroyed the male sexual organs, practically castrating the animal, which then became indistinguishable from a female, even to the presence of ova in the residue of the testicle, though such a corresponding change did not occur when the female was affected. The internal secretion was supplied by the interstitial cells and not by the spermatic gland tissue. When the spermatic cords of an animal were cut this latter atrophied and the power of procreation ceased, but the interstitial tissue hypertrophied and the sex characteristics remained unimpaired. In embryo pigs this interstitial tissue occurred only in males. In man removal of the testicles before puberty prevented the development of sex characteristics. A testicle might be functional in regard to this internal secretion, though not for procreation. Hypertrophy of the suprarenal gland was associated with precocious sexual development in children and atrophy with absence of secondary sex characteristics, showing a close relation between the adrenal bodies and sexual development. A substance closely allied to adrenalin occurred in the placenta, attaining a maximum at term, and brought about contraction of the uterus and blood-vessels after delivery and probably precipitated labour itself.

Mr. W. McAdam Eccles (London), speaking of imperfect descent of both testicles, said that the interstitial cells were well developed in 80 per cent. of the cases and were present before birth but to a less extent. In those animals in which temporary descent of the testicles occurred these interstitial cells were only present at such times corresponding to the rutting season, being altogether absent at others. He thought, therefore, that the testicles should be preserved to the individual, even when imperfectly developed, by returning and fixing them in the abdomen. It was disastrous to the testis to fix it in the scrotum. One could count on the fingers of one hand the cases in English literature where increase in size had occurred after such a proceeding. The mesorchium was present in all such undeveloped testes. In cretins the testicles were always undescended; it would be interesting to know the condition of the suprarenal bodies in them. How was it that undeveloped and undescended testicles only occurred in the human subject?

Mr. G. H. Edington (Glasgow) said that tubercle of the processus vaginalis was sometimes mistaken for disease of the testicle. It presented nodular masses at the lower end of the spermatic cord, and in one case where this was dissected out and removed similar masses on the opposite side disappeared spontaneously, but a year after tuberculous dactylitis occurred in the same patient. A second case was treated satisfactorily by the local application of 10 per cent. iodoform in glycerine. Another disease affecting this region was acute vaginalitis. In one case of this kind pus was evacuated after five days' fever containing the pneumococcus, and in another a similar procedure was carried out after three days. The attacks bore some resemblance to strangulation of the testis. In some instances of misplaced testis the organ was extruded upwards and outwards from the inguinal canal much in the same direction as a hernia through the femoral ring. Sometimes the epididymis passed off from the inferior pole of the testis accompanied by the vessels, while the processus vaginalis lay above and between.

Mr. J. P. Lockhart Mummery (London) was opposed to syphilis being a common cause of testicular enlargement in infants as compared with tubercle. Tuberculous disease of the processus vaginalis was part of a general tuberculous peritonitis, but the condition usually subsided after laparotomy. He held the same view as had already been expressed as to not removing the testis but fixing it in the abdomen. It did not always develop but the younger the patient the better as regards the operation. Mr. Mummery mentioned three cases in which the testicle had been gradually brought into its proper position by frequent gentle manipulation.

Mr. P. G. Lee (Cork) rather supported the view that syphilis predisposed to testicular disease. In Cork there was little or no syphilis but a great deal of tubercle and he saw no such affections of the testis.

Mr. Russell Howard said that of 78 cases of malignant disease of the testicle which was rare in children nearly all were sarcoma and 12 occurred in retained testes. Where only one testis was undescended he should remove it for fear of sarcoma.

Mr. E. M. Corner (London) considered that torsion of the testicle was now better recognised than formerly. The sign was pain recurring after exertion, especially where there was imperfect descent. He recommended orchidopexy and considered the prognosis better under seven years of age.

Mr. McAdam Eccles said that in 83 cases of malignant disease of the testicle collected at St. Bartholomew's Hospital only two occurred in undescended organs.

Mr. F. H. Brook (Swansea) and Mr. Russell Howard recorded cases of sarcoma of the tunica vaginalis.

The President of the section said that in cases of spinal caries there were often secondary affections of small joints and of glands but not of the testes. He was in favour of replacing imperfectly descended organs rather than of removing them.

Dr. Edington in a paper on

*Some Abnormalities of the Penis*

gave an anatomical account of 54 instances of various malformations of the penis met with in six years. There were 21 cases of hypospadias of the glans, six of the penis, and one of the perineum. There were four cases allied to hypospadias, ten of malformation of the raphe only, and 12 of torsion of the penis. Sketches of a number of these were appended.

Mr. Russell Howard explained that the great number of cases in which abnormality was confined to the glans depended on the fact that this part of the urethra was developed independently and later by extension backwards of the meatus to meet the penile urethra, which at first ended at the lower part of the corona.

Mr. H. Tyrrell Gray (London) gave an account of

*Some Complications met with in Connexion with Meckel's Diverticulum.*

All conditions, he said, were met with, from simple catarrh to actual gangrene. One of the cases represented primary diverticulitis with ulcer. Another presented 13 perforations in one diverticulum, while a third was attached to the superior abdominal wall by a blood cyst and presented two constrictions. The diverticulum was exposed to risk of torsion and injury, while deficient blood-supply rendered gangrene possible. Pain and swelling would be found usually below and to the right of the umbilicus, sometimes above, while the general symptoms resembled appendicitis. There were in his cases exacerbations of pain, vomiting, constipation, fulness in the recto-vesical pouch, swelling, and absence of respiratory movement below the umbilicus. Symptoms of intestinal obstruction occurred with history of previous attacks of abdominal pain. In one case excessive scarring at the umbilicus pointed to a congenital deficiency of the abdominal wall which was associated with the presence of a diverticulum. In another case there was marked retraction of the navel. Localised meteorism had been observed.

Mr. Brook cited a case which showed that inversion of a diverticulum might be the cause of intussusception.

Mr. C. A. R. Nitch (London) read a paper on

*Cases of Pneumococcic Arthritis.*

He said that in 1888 Weichselbaum showed that pneumococcic infection of joints and other parts might occur with or without lung implication. He cited two instances of pneumococcic infection of the knee-joint coming on acutely with four and five days' fever which were opened and drained. 100 cases had been collected, 18 under one year of age, 17 between one and two years of age, and 31 from two to 14 years. Infection might occur from the middle ear, mouth, tonsil, or pharynx. 50 per cent. affected the knee. The synovial sac was distended and there was absence of redness or brawniness of the skin.

Mr. S. STEPHENSON (London) said that pneumococcus occurred as pure culture in the conjunctiva and, as in gonorrhœal conjunctivitis, joints were sometimes secondarily infected.

Mr. LEE and Mr. NITCH mentioned further cases.

Mr. LOCKHART MUMMERY read a paper on

*Rectal Prolapse,*

which for the most part occurred without any of the recognised causes being recognised, such as phimosis, stone in the bladder, polypi, or worms. The occurrence was nearly equally common in males and females. Some had diarrhœa, some constipation, and in many more adenoids had been removed, but in a large proportion there was no ascertainable cause. It seemed to be due to general weakness and emaciation. There was practically nothing but fat round the rectum in infants, though later fibrous areolar tissue developed. He was strongly of opinion that the squatting attitude was the proper one for defæcation in children, and with the adoption of this and tonic treatment the disorder disappeared without operation. Cauterisation was effective in the worst cases.

Dr. E. CAUTLEY (London), Mr. LEE, and Mr. D'ARCY POWER discussed the paper.

### THURSDAY, AUGUST 1ST.

In opening a discussion on

*Acute Nephritis and its Results*

Dr. A. F. VOELCKER (London) said that from statistics collected at the Middlesex Hospital and at the Hospital for Sick Children, Great Ormond-street, he deduced the fact that during the first 36 years of life acute nephritis showed about the same incidence in each duodecennial period and as regards sex there was a slight balance in favour of males. In the fever hospitals of the Metropolitan Asylums Board 18,000 cases of scarlet fever included 842 instances of acute nephritis (about 5 per cent.), of which only 29 (or 1 in 30) were fatal. Among 4930 cases of diphtheria there were 36 instances of acute nephritis (1 in 137) without fatality, and the cases of typhoid fever presented an incidence of 1·6 acute nephritis. Among 346 cases of pertussis there were three instances, about the same as in diphtheria. Season exerted no influence. Apart from specific fevers, the etiology so far as could be traced was distributed between the effect of wet and cold, injuries to the skin, especially burns, acute inflammatory states, direct irritants of the kidneys, and a considerable number in which no suggestion could be made. In comparing children with adults it appeared that ocular changes and affections of the throat were very rare in the former and in them tendency to recurrence was slight. The principal complications were pneumonia, inflammation of serous membranes, and diarrhœa. Albuminuria might continue for weeks or months, being modified by fatigue, diet, and drug irritation. The issue of cases was in recovery, chronicity, or death. Acute nephritis involving some, though slight, general symptoms as well as changes in the urine had to be distinguished from renal infarct, paroxysmal hæmaturia, kidney tumours and stone, and angeioneurotic œdema.

Dr. A. W. SIKES (London) did not approve of too exclusive a milk diet and recommended partial substitution of sugar-and-water, as the object of treatment was to give physiological rest to the kidneys. During convalescence and for chronic cases he recommended a more extended proteid diet, allowing intervals of abstinence. The rise of blood pressure noticed initially in many cases had not been adequately explained. The gastro-intestinal disturbance was referred to the influence of toxins on the central nervous system and intestinal ulceration might be due to the effect of separated ammonia. Administration of sodium chloride was attended by temporary retention of the salt usually associated with œdema of the tissues, and excess of water might increase the œdema, since in the peculiar state of the kidney the urine apparently had a fixed molecular constitution. Globulins were present in the albuminuria of pregnancy and lardaceous disease. In acute nephritis caffeine and salines should be avoided on account of their direct irritant effect on the renal epithelium. Hydræmia and œdema were not necessarily associated.

Mr. STEPHENSON, speaking as an ophthalmic surgeon, found ocular complications uncommon in acute nephritis in children. Of those encountered papillitis was the most frequent, then amaurosis (temporary), and more rarely retinal hæmorrhage and detachment. Such complications were associated rather with interstitial nephritis. Nettleship in 80 such cases found retinal hæmorrhage in 30. Such affections were in the proportion of 75 per cent. in interstitial to 14 per cent. in parenchymatous nephritis. From the point of view of prognosis retinal changes were even of graver augury than in adults, death ensuing in from five to 12 months.

Dr. THEODORE THOMSON (London) referred to unsuspected nephritis in association with septic infection and its almost constant presence in septicæmia and septic endocarditis. In many cases of chronic interstitial nephritis there could be traced septic infection one or two years previously. He referred to a case of double dacryocystitis in which nephritis appeared 14 days later. There were lumbar pain and albuminuria, and in the course of two years the arteries became thickened, blood pressure raised and the heart hypertrophied. In another case in which chronic nephritis developed after septic infection death from cerebral hæmorrhage occurred three years later. Toxins were voided in the urine as witnessed by typhoid fever and their passage through the kidneys sometimes excited chronic nephritis.

Dr. F. C. EVE (Hull) cited a case in which two ounces of chlorate of potash dissolved in water and sipped through the night for a sore throat produced serious effects. The patient's complexion was of a slaty-blue and yellow tint. The motions were like coffee grounds and the urine was porter-coloured. Blood pressure fell till there was suppression of urine. Transfusion with saline solution raised the pressure and some urine was secreted, but death occurred from cerebral hæmorrhage. He recommended dry cupping the loins and lumbar puncture for the relief of renal blindness.

Dr. F. LANGMEAD (London) referred to the occurrence of acute nephritis in connexion with tonsillitis and diseases or injuries of the skin. He thought that the milk *régime* was often not continued long enough.

Mr. J. HERBERT PARSONS (London) considered that in children ocular manifestations were conspicuous by their absence. Amaurosis occurred without other symptoms and star-figures at the macula due to intraocular pressure were more common than in adults.

Dr. J. E. H. SAWYER (Birmingham) said that of 55 cases of chronic interstitial nephritis in patients under 21 years of age, which he had collected, 22 were in males and 33 in females. In only six cases was there œdema; polyuria extended from birth. In some there had been acute congenital or intra-uterine nephritis or syphilis with acute interstitial nephritis.

Dr. R. LEES (Glasgow) said that he had known scarlet fever to be followed by chronic interstitial nephritis. Nephritis might also be associated with rheumatism. He favoured the long continuance of milk diet after an attack.

Dr. J. P. PARKINSON (London), Dr. CAUTLEY, and Dr. SIKES also spoke.

Dr. LANGMEAD read a paper on

*Acetonæmic Conditions in Childhood.*

He pointed out that whilst acetone was frequently found in the urine unassociated with symptoms, yet there were many cases in which acidosis occurred either by itself or as part of the symptomatology of other diseases. The symptoms of acidosis were just those of diabetic coma without, however, glycosuria, and were seen unobscured in delayed anæsthetic poisoning and cyclical or recurrent vomiting. He read the notes of three cases of the former condition, two of which had occurred after chloroform and one after nitrous-oxide gas, and pointed out that it was the state of anæsthesia rather than the anæsthetic which acted as the determining cause. He was able to add the notes of two cases of fatal cyclical vomiting and emphasised the fact that the post-mortem appearances, especially the characteristic buff-coloured liver, were common to both conditions. Acidosis was due to the accumulation of the products of fat disintegration which had been imperfectly oxidised by the tissues and organs, especially the liver. This might be due to an inherent want of metabolic activity, to fats being presented to the oxidising organs in excessive amounts, or as the effect of a toxin acting like phosphorus. Probably the last was the true explanation and in cyclical vomiting the source of intoxication was probably the gastro-intestinal tract. The practical outcome was the importance of finding out whether acute acetonuria was present before an operation, for if this were so an anæsthetic would probably be disastrous. Wherever possible the acetone should be first eliminated by a course of alkalies. When acidosis was present, whether as a bout of cyclical vomiting or after an anæsthetic, every effort should be made to eliminate and dilute the poison by purgation and saline infusion and large doses of alkalies should be administered as an antidote.

The subject was briefly discussed by Professor W. D. Halliburton (London), Dr. R. Lees, Dr. Voelcker, Dr. G. A. Sutherland (London), and Dr. Cautley.

Dr. H. R. Dean (London) read a paper on

*The Classification and Diagnosis of the Varieties of Purpura Occurring in Children.*

Excluding secondary or symptomatic cases the primary examples were divided into purpura simplex, purpura rheumatica, Henoch's purpura, and hemorrhagic purpura. Of 52 cases six occurred under the age of five years, 16 between five and ten years, 13 between 10 and 15 years, two between 15 and 20 years, and 15 over 20 years, 35 being under 15. The forms varied in degree rather than in kind, the simple form affecting only the skin, the rheumatic form involving some fever and pain in the limbs, and Henoch's purpura being associated with vomiting, diarrhœa, and abdominal pain, while the hæmorrhagic form was more general, affecting the mucous membranes and tissues.

Dr. H. I. Pinches (London) read a paper on

*Retro-pharyngeal Abscess*

which occurred for the most part in the first year of life, and was not uncommonly associated with measles, scarlet fever, and diphtheria. Inflammation commenced in the tonsils and adenoid tissue, and spread to the peritonsillar or pharyngeal lymph spaces. So that peritonsillar abscess and retropharyngeal abscess were analogous. A purulent nasal discharge often indicated adenoids. There were 16 cases. The swelling was always to one side or the other, never truly central. Swallowing and breathing were embarrassed and the child was seriously ill, pale and sweating, and there was a peculiar muffled cry regarded as characteristic. The neck was rigid and the head kept motionless. The abscess usually projected on one side of the neck and there were enlarged glands. In the mouth, the pharyngeal and faucial mucous membrane was inflamed and the tongue furred. Diagnosis was made by touch rather than by sight. The prognosis was good if the abscess was opened early by the mouth, not externally.

Dr. T. N. Kelynack (London) read a paper on

*The Care of Tuberculous Children.*

Deaths from tuberculous disease, he said, occurred largely between the ages of 15 and 35 years. Infection occurred in early life and from 2 to 6 per cent. of school children were affected. He urged greater care in prophylaxis in infancy and childhood as more effective in eradicating the disease than the attempts to cure the disease later in life.

## THE ANNUAL EXHIBITION.

(*Continued from p. 340.*)

### III.—FOODS AND FOOD PRODUCTS.

This section did not appear to be so well represented as on previous occasions. Beyond some special foods, as, for example, those enriched by the addition of protein and others in which the carbohydrates have been reduced or extracted for the use of sufferers from diabetes, there were, on the whole, but few novelties. The well-known firm of biscuit makers, Messrs. Peak, Frean, and Co., Limited, of Drummond-road, London, S.E., exhibited their comparatively new introductions, tilia biscuits, cocoa, and powder. Not long since we submitted these preparations to analysis, the results showing them to contain an important addition of milk protein. Their nutritive value is thus considerably increased. Tilia biscuits are packed in "damp-tight" tins. Messrs. J. Reynolds and Co., Limited (of the flour mills, Gloucester), exhibited excellent specimens of a specially prepared wheatmeal bread. The analysis shows a very satisfactory proportion of protein and phosphates, while the bran of the whole meal is ground exceedingly fine which renders it unirritating. The flavour is good and attractive. An interesting series of foods for invalids was shown by Messrs. Brand and Co., Limited, of 11, Little Stanhope-street, Mayfair, London, W. Amongst these should be mentioned a preparation of beef-tea which enables a really good beef-tea to be made in a few minutes; there were also shown some well-prepared jellies, including chicken, calf's foot, and turtle. Close by were the scientifically prepared milk foods of the Aylesbury Dairy Co. of St. Petersburgh-place, Bayswater, W. Here were koumis, humanised milks, milk sugar, and two foods known respectively as "humanoid" and "pollyta," the former being a concentrated preparation which on dilution resembles mother's milk, while the latter is a solid milk food suitable for infants after weaning. Messrs. Keen Robinson and Co., Limited, of Denmark-street, St. George in the East, London, E., exhibited their well-known patent barley which is prepared from grain of the best quality and is particularly suitable for making barley water. Virol is now well known as not only a concentrated food but as an easily assimilated one. It contains all classes of reparatives and is indicated particularly for infants suffering from malnutrition. A numerous assortment of specimens was shown by Messrs. Virol, Limited, of 152, Old-street, London, E.C. Messrs. Fairchild Brothers and Foster exhibited their well-known food products. Amongst these should be mentioned a lecithin preparation containing this peculiar organic phosphorous compound in solution. Its favourable effect on general nutrition is well recognised; the exhibit included panopeptone, which represents the nutritive value of beef and wheat flour in an easily assimilable state, and a number of preparations containing active pepsin. The Plasmon Food Products were well represented at the stall of International Plasmon, Limited, of 66A, Farrington-street, London, E.C. Here were pure plasmon powder, biscuits, chocolate, cocoa, custard powder, and tea. Next to this stall were the foods of the Manhu Food Co., of 23, Mount Pleasant, London, W.C. These preparations are admitted to consist of a modified form of wheaten flour, the method, it is stated, rendering carbohydrates much more easily digested than when not so treated. An excellent series of starchless and sugarless foods, giving the practitioner an abundant choice of a diabetic food, was shown by Messrs. Callard and Co., of 74, Regent-street, London, W. These included bread, biscuit, jam, marmalade, jellies, chocolate, and so forth. "Virogen" is described as a compound of the protein of milk with the glycerophosphates of lime and iron. Specimens were shown by Virogen, Limited, of 115, Oxford-street, London, W., the exhibit including also diabetic bread and biscuits and virogen cocoa. The exhibit of Liebig's Extract of Meat Co., of 4, Lloyd's-avenue, London, E.C., attracted a good deal of attention. This company state that its concentrated foods are subject to strict analysis and scientific control at all the various stages of manufacture. The exhibit included the compound of meat extract and meat fibrin known as "Oxo" and the pure extract known as "Lemco." There were also specimens of corned beef, ox tongues, and ox tail soup. Messrs G. Van Abbott and Sons of Bardon-place, Crosby-row, Borough, London, S.E., exhibited their well-known foods which are suited to the special physiological requirements of sufferers from diabetes and obesity. The exhibits included gluten bread, almond bread, and other starchless and sugarless foods.

Medical visitors inspected this important department of the exhibition with obvious interest and in many instances evinced their curiosity so far as to accept the invitation to taste and to receive specimens for personal trial.

(*To be concluded.*)

---

University of Cambridge.--Mr. Adam Sedgwick, F.R.S., has been elected professor of zoology and comparative anatomy in place of the late Professor Newton. Mr. Sedgwick has been reader in morphology since 1882 and has recently resigned a tutorship of Trinity College.—The offer of the mastership of Downing College, vacated by the resignation of Dr. A. Hill, has been made to Professor Howard Marsh, professor of surgery in the University. It is understood that Professor Marsh has accepted the offer but the election cannot take place until October.—The third annual meeting of the Esperanto Congress will be held in Cambridge to-day (August 10th); a large gathering is expected.

# THE LANCET.

*LONDON: SATURDAY, AUGUST 10, 1907.*

## The Plethora of Congresses.

IN one of his most famous and terrible lines Lucretius, describing the plague at Athens, says of the medical profession,—

> "Mussabat tacito medicina timore."

Happily this can no longer be said of the medical profession in plague or in any other disease, with the possible exception of malignant disease. And nothing shows better the wide-spreading influence of medicine than the subjects debated at the five congresses which have been sitting during the past week. The British Medical Association ended its labours at Exeter on August 3rd, the British Association for the Advancement of Science concludes its meeting at Leicester this week, as do the International Congresses on Housing and on School Hygiene which sat during this week at the Caxton Hall and at the University of London respectively. In addition to the above mentioned the International Congress of the Medical Press has also been holding meetings in London during the last and the present week. If we reported every word of the proceedings at all these five congresses we might very fairly expect that the reports would interest our readers, for they all deal with matter which is at least germane to medical science. Space and time fail us to report the whole proceedings. It is a physiological fact that if one of the higher organisms be supplied with too much food at a time the following things will happen. Either the food is vomited as a crude undigested mass or an acute paralysis of the digestive tract sets in, or the animal refuses its food. We are unwilling for our readers' sake to adopt course number one, for our own sakes we cannot be expected to adopt number two, and therefore we are reluctantly compelled to follow course number three and to refuse a great deal of the pabulum set before us. But, thanks to our fellow workers in the lay press, both daily and weekly, much responsibility is taken off our shoulders, for the lay press, which is becoming daily more and more informed upon medical and other scientific matters, is both able and willing to devote space to the discussion of the various matters which are being debated at the several congresses and many of which have a very distinct public interest.

The majority of the detailed accounts which appear in our own columns have to be mainly confined to the proceedings of the British Medical Association, but this would certainly not be the case were it not that the dates of the various congresses all clash. Housing and school hygiene are both subjects which are very distinctly medical matters, for they deal with the health of the body politic in a very far-reaching fashion. Housing—i.e., healthy housing—is of vast importance to all those who are alive at the present date and, in a way, to future generations, for a generation which is badly housed cannot be expected to produce healthy offspring, who will be the fathers and mothers of future generations. And so, too, the subject of school hygiene affects the children of the present and through them those of the future. But although we are unable to devote so much space as we should like to the congresses in question, yet in a way we are always reporting them, for hardly a week passes without some, or all, of the subjects now receiving public ventilation being discussed in our columns. With regard to one congress—namely, the International Congress of the Medical Press—it may be thought to concern ourselves rather than our readers. It must be remembered, however, that a strong medical press has its value for the community. Questions of hygiene, of pure food, of quackery, and of other matters which concern the public health can only be actively dealt with in a strong and united medical press. The world is now grown so small, the community of interests among the various nations is so marked, and intercommunication between them is so free, that almost any question affecting the public health of one nation is affected by and affects the public health of other nations. The medical press can be an influence with Governments upon these matters, and although at present medicine has not as much influence in shaping legislation as we should like to see, the force of scientific opinion is growing in strength. Only last week—i.e., on August 2nd—the President of the Local Government Board, in moving the second reading of the Public Health (Regulations as to Foods) Bill, paid a generous tribute to the medical press in general and ourselves in particular for the urgent requests for legislation with regard to putrid foodstuffs. Recognition in one country of the value of medical views must encourage sanitary reformers in other countries, and, therefore, any methods which will bring about community of action between the medical journals of the different countries can only result in the good of the peoples.

◆

## An Antivivisection Debate.

NO one who acknowledges that in physiological and pathological research it is legitimate to employ the lower animals is in the least afraid of publicity. The opposition to vivisection which in some quarters exists is founded for the most part on a lack of knowledge of the facts of the case. Misrepresentation, sometimes accidental and sometimes intentional, is responsible for much of the fervour with which antivivisectionists wage war against the present Act by which experiments on animals are licensed. Even if no Act were in force, it is intensely improbable that any real abuse would exist, but with the safeguards provided by the Act no harm can possibly be done. The present claim of the antivivisectionist societies is that every form of experiment on animals should be made illegal, so that not even a hypodermic injection of an animal should be allowed. This attitude is, as we have said, largely due to a want of knowledge, and nothing but good can come of a thorough ventilation of the subject. We, therefore, can speak with approval of the holding of a public debate at Glossop between two medical men on the subject of vivisection. It matters not at all that when a vote was taken at the end of the proceedings it was in favour of the abolition of vivisection. That is but little more than an incident, for the meeting was arranged by the secretary of the British Union for the Abolition of Vivisection, and it was to be expected that many supporters of the movement would be present.

Dr. W. R. Hadwen of Gloucester spoke against vivisection and Dr. T. Eastham of Hadfield opposed him. In a debate taking more than two hours it is clear that more arguments must have been employed than we have space even for mentioning, but it will be worth while to notice a few of the more important. Dr. Hadwen, inasmuch as he is a medical man, is less prone than some other antivivisectionists to make unfounded statements, but much of what he said did not rest on any firm foundation. For instance, he stated that little care is taken in experiments on animals to insure that the anæsthesia is complete, but he did not give any evidence of this so far as we may judge from the newspaper report. He also said that curare is frequently employed but Dr. Eastham showed that curare is very rarely used now, and even when it is employed some anæsthetic is usually administered as well. Dr. Hadwen also said that the operation of removal of the kidney was "quite common" in the time of Hippocrates. We should be glad to learn what was the foundation for this statement. He also said that experiments on animals with drugs were useless because drugs have not the same effect on animals as on human beings. There is a small basis of truth for this assertion, for some drugs have unusual effects on some animals, but nearly all drugs have the same effect on nearly all animals as they have on man, and therefore with a little care we are fully justified in arguing from animals to man as to the effects of drugs. Dr. Hadwen was not in favour of the standardisation of pharmaceutical preparations, for he held that attempts to standardise by means of tests on animals must fail. He denied that experiments on the lower animals had anything to do with the discovery of the circulation of the blood and attributed this discovery to the microscope, although Harvey's work "Exercitatio Anatomica de Motu Cordis et Sanguinis" was published in 1628 and the first application of the microscope to the circulation was made by Malpighi in 1661. He also said that there was not a single infectious disease at the present day for which a specific microbe had been definitely proved to be the cause. He denied that antitoxin was of any use in diphtheria and he asserted that since the discovery of diphtheria antitoxin the mortality of diphtheria had increased; yet we know that the very aspect of the diphtheria wards of the fever hospitals has become changed and that the huge percentage mortality has enormously decreased. Appeals by Dr. Eastham to the opinion of the members of the Council of the Royal Society in favour of vivisection were rejected with scorn by Dr. Hadwen, for, said he, no medical man who dared to give vent to opinions against vivisection would ever be considered eminent. Finally, Dr. Hadwen said that even had experiments on animals resulted in proved success in aiding the alleviation or cure of human diseases, he would still look upon them as unjustifiable—what we dare not do to a human being we should not do to a dog. As already mentioned, the vote of the meeting was in favour of the total abolition of vivisection. We cannot but express our approval of the manner in which Dr. Eastham conducted the debate; he was well primed with facts and arguments and he did his best to put them in a form comprehensible to non-scientific minds. That he was defeated depended not so much on his facts and arguments as on the composition of the meeting.

In all antivivisection literature there are several important fallacies. It is generally taken for granted that cruelty and the infliction of pain are synonymous, and therefore it is argued that as vivisectionists do sometimes inflict pain they are necessarily cruel. But cruelty is the infliction of *unnecessary* pain or useless pain. To inflict pain is often far from cruel, sometimes even to the sufferer himself; but often it is advisable, or even necessary, to inflict pain, not so much for the benefit of the sufferer but for the benefit of others, and this is true of human beings and it is equally true of the lower animals. Dr. Hadwen in his opening speech at the debate ridiculed the idea that anæsthetics were largely employed in experiments, but the fact remains that in nearly every operation an efficient anæsthetic is used. A very large proportion of the "experiments on animals" consists of hypodermic and intravascular injections, and for these no anæsthetic is needed, and no anæsthetic is employed when similar injections are made in human beings. As we have said already, the greater part of the opposition to experiments on animals is due to misrepresentations of what is done in so-called vivisection. We honour the tenderness of heart of those who, hearing tales of horror, do their best to put an end to the possibility of such happenings, but those who mislead the ill-instructed and humane public incur a heavy responsibility indeed, for they are opposing the labours of men who work not so much for the advancement of science as for the benefit of the human race. With the increase of our knowledge of human pathology our knowledge of the pathology of the lower animals increases also, and thus, though men benefit at first from experiments on animals, the benefit is not restricted to us but extends also to the animal world.

# The Supply and Rate of Remuneration of Midwives.

The problem as to whether the Midwives Act is to work successfully or not is one which only the future can decide with certainty. At the same time there are many questions concerned with the present and future working of the Act which are of the utmost importance to all interested in this matter. The Association for Promoting the Training and Supply of Midwives recently appointed a committee to collect information on the question of the supply and remuneration of midwives and this committee presented a very valuable report which contains a large amount of information on these and allied questions. We published the document in full in The Lancet.[1]

The supply of fully trained midwives must be determined by the demand for their services and the possibility of the women who take up this work being enabled to obtain a living wage for their labour. The first question which the committee endeavoured to find an answer to was, What proportion of women who practised as so-called midwives have retired since the coming into force of the new Act and what proportion of those on the roll are actually practising midwives? From the figures obtained it would appear that a very large number of these women have retired from practice since the year 1902. Thus we find that out of a total of 5939 midwives who were practising in six counties no less than 2629 had signified their intention to retire up to October, 1904. At the end of 1906 the total number of midwives on the roll was 23,278, and of these it was estimated that only 14,450 were practising, the remainder being engaged in monthly nursing. The number of untrained midwives on the roll is of necessity at the present time very large owing to the fact that no less than 12,521 women were placed on the roll in virtue of their having been in practice as midwives for the 12 months preceding the passing of the Act. A table given in this report demonstrates that the proportion of untrained midwives practising at the present time is enormous. Thus, of a total of 4898 midwives practising in 18 counties or boroughs the number of those trained is estimated at only 856. The important questions as to the average rate of payments of midwives and the average number of cases attended during a year the committee had great difficulty in answering. The conclusion which it came to, largely from information supplied by one of its number, Miss ALICE GREGORY, is that in unpauperised rural districts the average fee is 10*s.*, not, however, as a rule paid entirely in money. The number of cases attended by each midwife is still more difficult to ascertain with certainty. From the statistics collected by the committee it would appear that an average of 18 cases per annum is about the number attended in small urban and rural districts, while in the larger boroughs the average may be as much as 61 cases. As Mr. A. G. R. FOULERTON points out, it would appear that the total number of midwives judged merely by the actual number of births is very much in excess of that required. If we assume with the committee that only 62 per cent. of the women on the roll, or some 14,430, are practising, and that about 50 per cent. of the total number of births, which for 1906 was 934,391, in England and Wales are attended by midwives, then the average yearly number of cases attended by each midwife would be about 33, representing a total earning of about £16 10*s.* It must, however, be remembered that the demand for the services of these women varies very considerably in different localities and we can therefore come to no other conclusion but that comparatively few of the midwives in practice at the present time are earning a living wage, and that in sparsely populated country districts it is simply impossible for them to do so unless working in association with some county or charitable association.

---

[1] The Lancet, July 20th, p. 178.

The information presented in this report cannot but be very disquieting to those who have the interests of a valuable class of the community at heart. The problem is one of much difficulty and the outlook for those women who think of becoming midwives, and who can often but ill-afford the expenses attending the necessary training to enable them to obtain the certificate of the Central Midwives Board, is by no means an encouraging one. They may, and indeed will, have the greatest difficulty in obtaining adequate remuneration, or indeed even a bare living wage, when their training is completed. It will be seen, therefore, that the Association for Promoting the Training and Supply of Midwives has before it a hard task and one which will call for considerable talents of ingenuity and persuasiveness if it is to place the midwifery service of the poor, as contemplated by the Midwives Act, upon a sound financial basis. The association has worked, and is working, very hard, but the course ahead of it is a stiff one.

◆

## Alcohol, Tobacco, and Accuracy.

IN our issue of last week we commented upon the three addresses delivered at the recent meeting of the British Medical Association by Dr. H. DAVY, Dr. W. HALE WHITE, and Mr. H. T. BUTLIN. The key-note of all three addresses was accuracy: the careful record of facts, founded upon systematic experiment and the knowledge derived thence, which is the only true knowledge. If the writers of these three addresses had wished to exhibit "a fearful example" of the evil which they desired to combat they would have found one ready to their hand in the consideration of the proceedings which took place on Thursday, August 1st, and Friday, August 2nd, at the breakfast given by the Science and Education Committee of the National Temperance League and at the proceedings in the section of State Medicine respectively. At the former meeting Dr. DAVY appeared in the rôle of a Balaam and, while in no way minimising the evils of alcoholism, denounced "most of the temperance societies and a large number of the temperance advocates" for talking "the most unscientific twaddle ever invented." Dr. DAVY'S words receive a notable confirmation in a book, entitled "The Licensed Trade," which was reviewed in our columns last week and the author of which, Mr. E. A. PRATT, was brought up a teetotaler. In his later years, however, he made an independent examination of the question and came to the conclusion that many of the statements made by total abstainers were based largely on "exaggeration, misconceptions, and, indeed, conditions altogether incapable of attainment." The result of his emancipation from the ideas in which he was educated has been to transform him into a frank advocate of the virtues of light beer, and it is impossible to doubt that the same change of view would take place in many champions of teetotalism if they understood their subject and were not bent fanatically upon confounding the moderate drinker with the drunkard. The users of alcohol are not the only persons who may want lessons in moderation, and Dr. DAVY rightly drew attention to the abuse of tea, especially when given to children; amid expressions of dissent he maintained that a meal of cheese, bread, and light beer was an infinitely more scientific meal than the "food which children were now getting of bread, tea, and jam." He insisted at the same time on the value of temperance and the teaching thereof, only the teaching must be founded on scientific fact and not tinged with personal opinion. The scientific facts, said he, that we do know are that alcohol is not a necessity of life and is rarely useful in disease. Hardly any of our readers will dissent from this view or will grudge to the temperance party the credit of having taught the medical profession valuable lessons in the use of alcohol. But the drunkard and the right user of alcohol must be kept separate in the minds of all who desire to think accurately.

In the section of State Medicine a paper was read by Mr. H. H. Tidswell of Torquay on "The Influence of the Tobacco Habit on the Health of the Individual and the Nation," and formed a striking instance of the loose and unscientific statements which are deplored by medical men. Mr. Tidswell's address was a good example of the unbalanced fervour of a convert. He was once a moderate smoker—at least, he says so—but if the amount that he was wont to smoke happened to be more than was good for him he was not moderate at all, however scanty his daily consumption of tobacco was. At any rate, he is now an immoderate non-smoker, and his arguments are illogical and unsound. He states that tobacco contains a deadly poison, nicotine, and further that no vital part of the body escapes the poisonous action of nicotine. He implied that therefore the smoking of tobacco meant the absorption of this deadly poison. In so doing he placed himself on one or other horn of a dilemma. Either he did not know that in tobacco smoke there is next to no nicotine or else knowing this fact he suppressed it. Let us quote two other inaccurate statements which he made. "The only use of tobacco was to keep off mosquitoes and as there were no mosquitoes in this country they had no excuse for smoking tobacco." Now tobacco smoke in respirable quantity does not keep off mosquitoes and there are plenty of these insects in our country. "Smoking was a national danger ...... boys were killing themselves by hundreds and thousands." Smoking is very bad for boys, but why try to impress this fact by manifestly absurd exaggeration? The evil effects of such loose statements are not apparent when they are made. An audience of medical men will as a whole appraise such a paper at its proper value. But a certain section of the lay press, quick to seize upon any sensational statement, publishes with apt headlines remarks of the kind we have quoted, and the mass of the population are gulled thereby. We yield to no one in the opinion that smoking is bad for children but so also are many other things which can be usefully and safely enjoyed by an adult.

Alcohol and tobacco, or perhaps we should say alcoholic beverages and some form of drug analogous to tobacco, have been in use by mankind, both civilised and savage, since the dawn of history. Their use and their abuse have been reckoned upon for countless ages, though we have lately grown much wiser in these matters with the increase of our physiological knowledge and our far greater opportunities of drawing statistical conclusions of international or universal import. But our reasoning powers have grown also and we are not to be terrified by bogey stories. The lines upon which temperance reform should go must be temperate. A powerful personality like Mahomet or Father Mathew may persuade his converts for a time when swayed by other motives, such as the religious motive, to give up alcoholic drinks. But directly the enthusiasm wanes the asceticism lessens. True temperance can only be inculcated by accuracy of statement, by example, by precept, and by the preaching in season of the fact that the body is a priceless possession which every man holds in trust not for himself alone but for his fellows. Already it is recognised by law that a man whose body is affected with certain diseases is a danger to his fellows, and if he or his friends do not comply with certain regulations they are punished. Even now people are fined for being drunk and disorderly. We should like to see a penalty extended to those who are drunk without being disorderly. If it could be impressed upon people that they have no right to poison their bodies with any drug whatsoever the evils rightly complained of by temperance lecturers, but no less deplored by those of us who make a right use of alcohol and tobacco, would cease. But loose and inaccurate statements such as we have referred to above are a very fountain of harm.

# Annotations.

"Ne quid nimis."

## THE MULKOVAL DISASTER.

A necessary tribute was paid last week by Mr. Morley to the value of the Haffkine prophylactic against plague; and this fact makes it to our mind perfectly extraordinary that the Secretary of State for India, who stands so high amongst our statesmen as a brave and fair man and a logical thinker, does not take steps to do Mr. Haffkine justice in the matter of the Mulkoval disaster. Mr. Morley has so far declined any action on the ground that reports have been received by the Government from impartial and independent sources which make further consideration of the matter unnecessary. But it is impossible that this attitude should be maintained. On July 29th a letter was published in the *Times*, signed by Professor Flexner, Professor Ronald Ross, Professor R. T. Hewlett, Professor A. S. Grünbaum, Professor W. J. Simpson, Professor R. F. C. Leith, Professor W. R. Smith, Professor G. Sims Woodhead, Professor E. Klein, and Professor Hunter Stewart, in which the signatories expressly state the view already put forward very clearly by ourselves[1] that the case against Mr. Haffkine's laboratory collapses upon investigation. All those who signed that letter are scientific men, experts occupying responsible positions as pathologists or workers in the domains of public health. Thousands of bacteriologists throughout the world have been educated on Professor Klein's and Professor Hewlett's scientific publications, treatises, and text-books. Professor Klein has now for over 20 years acted as bacteriologist to the Local Government Board while conducting this department of study at St. Bartholomew's Hospital Medical School. Professor Sims Woodhead, professor of bacteriology in the University of Cambridge, is among our leaders in serotherapy, and Professor Flexner of the Rockefeller Institute in New York is one of the chief representatives of bacteriological and pathological knowledge throughout the world. Professor Ronald Ross's work and position are, of course, known of all men; and if we do not enumerate the claims of the other signatories upon immediate attention it is only because they are generally recognised as leaders of scientific thought and perfectly vouched for by the importance of the universities which have sought their collaboration. But the signatures of well-informed people do not necessarily make a document a forcible one; the further importance of the document under consideration lies in the remarkably clear exposition of the facts, in the lucid and straightforward reasoning, and in the frank enunciation of conclusions. The story of the Mulkoval disaster has been obscured by much adventitious matter, and some previous pronouncements on the case have been distinctly unfortunate. The origin of the accident has been examined by two bodies, the Jenkins Commission in India and the Lister Institute, and the conclusions reported by these bodies have been accepted as the official view. But these two bodies did not agree with each other. The Jenkins Commission ascribed the contamination of the bottle with which the accident was connected to the Bombay laboratory. The Lister Institute was asked to report on this finding and submitted three versions of its own opinion; but neither of these versions coincided with the Jenkins Commission's conclusions, nor did they coincide with each other. Against the four divergent pronouncements made by the Jenkins Commission and the Lister Institute we have now a strikingly conclusive and unanimous statement made by men qualified to judge of all the scientific questions involved and absolutely removed from possibility of bias. Their verdict, given in terms free from any ambiguity, is that the facts of the case indicate clearly that the contamination of the Haffkine prophylactic did not date from the time of its preparation in the Bombay laboratory and that therefore discussion on the methods of cultivating and preparing the prophylactic is not relevant to the question; that, on the other hand, there is very strong evidence to show that the contamination took place when the bottle was opened at Mulkoval in a manner which violated the technique prescribed by the Bombay laboratory. As we have already pointed out, the finding against the Bombay laboratory has not been supported by facts, but the Government has published that finding and invites the public to accept it with confidence. We invite the public to do exactly the reverse, for close consideration of all the circumstances of the case makes it impossible to subscribe to the official view. Mr. Morley has said in the House of Commons that this is "a matter respecting which no conclusion can be arrived at with absolute certainty." Such an attitude, we hope that he will see, ought not to be persevered in. The inaction of the Government cannot any longer be defended by any assertion that the two independent bodies which have reported upon the matter came to a unanimous verdict. Their verdicts differ, and against them a mass of testimony, which we think unimpeachable, is offered. Mr. Morley is the exact man to face such a situation nobly; we trust that he may be brought to see that justice to Mr. Haffkine requires an earnest reconsideration of the official attitude upon the matter.

---

[1] THE LANCET, Feb. 2nd, 1907, p. 299, et seq.

## TRIPLETS.

THERE is always a considerable amount of interest attending the birth of triplets, not only from the rarity of the occurrence, about once in 7000 births, but also because, as Ballantyne points out, pregnancies with more than two children must be considered as teratological. In THE LANCET of July 20th, p. 157, Dr. Robert Ollerenshaw records a very interesting case in which a girl aged 16 years was delivered of triplets, the labour being complicated by an attack of eclampsia. The fœtuses were delivered artificially and were born alive. The account of the case, as published in our columns, does not include their after-history but, as might have been expected, they all died in a very brief space of time. The mother made a good recovery from her attack of eclampsia. There are several points of much interest in this case. The fact that more boys than girls are born in the whole population appears to hold good also in the case of triplets and in this instance the three children were all males. Unlike the present case, the three fœtuses are most commonly of different sexes, but while it is true that uniovular fœtuses are always of the same sex yet this may be so even when the fœtuses are derived from two or three ova. There were two placentæ joined at their edges and two chorions, so that the case is one of biovular triplets, the commonest arrangement in this condition; uniovular triplets are exceedingly rare, only nine well-established cases having been recorded in all. It is a most curious circumstance that the influence of heredity, illustrated in the present case in the history that two aunts of the patient had given birth to twins, does not seem to hold good in the case of uniovular triplets but does in the case of those developed from two or three ova. The history of the father's family would have been of much interest since there are good grounds for believing that the hereditary influence is decidedly greater when not only the mother but also the father are members of a prolific family. The tendency to the production of multiple pregnancies certainly seems to increase from generation to generation. In this connexion a most interesting case has been published by Professor F. von Winckel in which the hereditary influence was transmitted through the males for four generations, six twin pregnancies being met with in nine labours, occurring twice in the second, three times in the third, and once in the fourth generation. The extreme youthfulness of the two parents is noteworthy. The average age of the mother of triplets, as Dr. Ollerenshaw points out, has been shown to be about 32 years and in only 1·79 per cent. of Mirabeau's cases was the mother between the age of 15 and 19 years. The birth of triplets in a first pregnancy is also quite the exception, in 80 per cent. of the cases the mother being a multipara. As is well known, the occurrence of such a complication as eclampsia is predisposed to by the presence in the uterus of more than one fœtus and in this respect, too, the case described by Dr. Ollerenshaw is of interest.

## THE CLASSIFICATION OF DISEASE AND CAUSES OF DEATH.

ANY system of registration of the causes of death or the incidence of disease presupposes the existence of a nosological classification. Of such classifications many have at various times been proposed, varying in their nature according to the state of contemporary medical knowledge and the objects which their authors had in view when compiling them. A very full account of this intricate subject has been given by Mr. G. H. Knibbs in a long paper entitled "The Classification of Disease and Causes of Death from the Standpoint of the Statistician," which was recently read before the Victorian branch of the British Medical Association. Mr. Knibbs, who is the Australian Commonwealth statistician, said that the scheme of any classification is determined by its specific aim as well as by the state of knowledge at the time of its preparation. For instance, attention may be directed principally to the causes of diseases, or to their pathological manifestations as seen by the naked eye or under the microscope, or to their clinical symptoms. He believed that the first attempt to classify diseases comprehensively on a natural history plan was made by François Bossier de Lacroix, otherwise known as Sauvages (1706–1767), and the result was embodied in his "Nosologia Methodica." This work was followed by the "Synopsis Nosologiae Methodicae" of Dr. William Cullen of Edinburgh, published in that city in 1785. The "Nomenclature of Diseases" of the Royal College of Physicians of London first appeared in 1869, and the fourth edition (third revision) was brought out in 1906. Nearly all the English nomenclatures in actual use are said to be more or less directly derived from that of Dr. William Farr—that is to say, they class diseases as nearly as possible according to anatomical location rather than according to their nature. Dr. Farr was the superintendent of the statistical department in the General Register Office, London, from 1838 to 1880, and was succeeded by Dr. William Ogle, who in 1886 adopted a new classification. The nosological system of the International Institute of Statistics, or the Bertillon system, as it is usually called, differs considerably from the Ogle-Farr index and includes two classifications—one for the compilation of statistics of morbidity and the other for causes of death. It has the advantages of wide recognition and practical convenience, and in these respects Mr. Knibbs believes it to be so much superior to the Farr-Ogle nosological index used in Australia that he recommended its adoption at the Australian Conference of Statisticians which met in November and December last. After some discussion that recommendation was accepted. No classification, however, is perfect all round, and Mr. Knibbs points out that the ascription of a death to a single definite cause is essentially empirical. This is probably inevitable, but it is nevertheless undesirable that the classification of causes of death should be governed by any etiological view which, from its nature, would be liable to vary from one country to another or with the prevalence of particular opinions. For instance, cirrhosis of the liver may be a consequence of alcoholism. Alcoholic impairment of the whole system may perhaps be followed by a fatal attack of nephritis. The Bertillon classification proposes that where the first disease is fully indicated it shall be recorded under "cirrhosis of the liver" and the second disease under "Bright's disease." According to this classification neither of these cases is to be recorded under alcoholism, so that the method has distinct limitations from the point of view of one who wishes to study the consequences of over-indulgence in alcohol. From one standpoint it might be desirable to know what statistical evidence there was of the number of deaths attributable directly and indirectly to a specific cause, but this would involve the impossible condition that the whole record of deaths should be examined and tabulated for each of such causes.

## HIGH INFANT MORTALITY AT STALYBRIDGE AND PRESTON.

IN his annual report for 1906 Mr. F. Vacher, the medical officer of the county, says that Stalybridge has a bad record and the highest infantile mortality in Cheshire—206 per 1000. Preston, however, shows that in Lancashire places may be found that closely rival Stalybridge in its bad pre-eminence. During 1906, 200 children per 1000 died, as compared with 150 in 1905, the excess being due to an epidemic of measles in the former year which accounted for 122 deaths, an increase of 50 per cent. on the previous year. There were also 219 deaths from diarrhœa, an increase of 100 per cent. It is interesting to learn that in the opinion of Dr. R. C. Brown, the consulting medical officer of health of Preston, the cause is one that ought to have led to opposite results. "Good trade," said Dr. Brown, "had been the main cause of the increased infantile mortality." Many mothers who had not worked in the mills for years had, during the good trade of the last eighteen months, owing to the demand for labour, gone back to the mills, so that the care and attention which the children should have had were to some extent wanting. Another cause dependent in great part on the increase of mill work was artificial feeding. "Ten per cent. only of the deaths from diarrhœa were of children who were breast fed." It may be remembered that some little time ago attention was drawn to Mr. A. W. Martin's (of Gorton) picture of a race of flat-chested, breastless women as the mothers of the children on whom the continuity of our race depends. Dr. Brown mentioned as a fact that out of every four married women who went to the mill three had no need to go for pecuniary reasons. One of the Preston councillors looked on the matter from a different standpoint. He mentioned a recent day when the temperature was 90° F. and when what he called "live steam" was being blown into one weaving-shed in the town, saying that mothers could not be healthy under such conditions. Still, all this, bad as it is, only adds other factors to those given by Dr. Brown. So, too, the early marriages at the age of 16 or 17 years, which according to the statement of another councillor are common among these boys and girls before they themselves are properly developed, all tend to show that Preston is not to be looked upon as the chosen cradle of an imperial race. *Apropos* of the above, on the same day as the meeting of the Preston council, the annual meeting of the local branch of the National Society for the Prevention of Cruelty to Children was held, and the report showed that out of 277 cases investigated, 273, involving the welfare of 674 children, were found to be true. The report went on to say that when it is borne in mind that the children are compelled to live in dirty homes, are fed constantly on improper food, and are the victims of parental laziness or indifference, "the wonder is not that Preston's death-rate stands at the figure it does but that it is not considerably higher." Much might be done to teach girls in the elementary schools plain lessons on cleanliness and the food suitable for infants, but more attention seems to be paid to other matters that are of less moment than the health of the coming generation. It is not encouraging to see that a well-known educational expert is reported as saying that to advise the working woman as to the care of her children is to insult her, when the ignorance of a large proportion of the working women of the country after more than 30 years of "compulsory education" is more than dense.

## THE WORK OF THE LIVERPOOL COUNTRY HOSPITAL IN THE CURATIVE AND EDUCATIONAL TREATMENT OF CRIPPLED CHILDREN.

OUR attention has been drawn to a correspondence recently published in the *Liverpool Courier* by Colonel Robert Montgomery, the chairman of the Liverpool Country Hospital for Children, between the Lord Mayor of London and himself with reference to the terms of Sir William Treloar's appeal on behalf of his fund for the systematic relief and treatment of crippled children. In the opening paragraph of that appeal the statement is made that though there have been special institutions in other countries for the treatment of crippled children suffering from chronic diseases, no such institution exists in England. Colonel Montgomery informed the Lord Mayor that such an institution has existed in the hospital at Heswell, over which he presides, for the last ten years, and forwarded to his lordship a full account of its work. In reply Sir William Treloar repeated the assertion that so far as he was informed "there is in this country no institution dealing in a systematic way with the disease of tuberculosis of the bones in children at an early age and giving them at once curative and educational treatment." The chairman and the honorary medical staff sent another letter stating in the fullest manner the work that the Liverpool Country Hospital is doing and pointing out that not only are its aims identical with those of the Lord Mayor's fund but that the methods adopted are a matter of general knowledge amongst those interested in the study of disease in children. From the correspondence, as we have seen it, we consider that Liverpool has well proved her claim to be the pioneer city to provide against a sadly urgent need, and we regret that in his reply to the final letter from the hospital Sir William Treloar, although expressing his sincere congratulations on what has been accomplished by it in the cause of the cripples, did not see his way to a fuller acknowledgement of its claims to priority in the enterprise which he has so deeply at heart. The excellence of his own cause can surely in no way suffer diminution because Liverpool and not London has first demonstrated its value practically.

## THE LONDON MILK-SUPPLY.

THE tuberculous milk clauses which are included in the General Powers Bill of the present year of the London County Council have now been accepted by Committees of both Houses of Parliament and there is every prospect that they will become law during the present session. The clauses are practically the same as those which are known as the "model clauses." In some small details they have been altered to meet the views of the County Councils' Association and are in their application to the circumstances of London somewhat modified to meet the exceptional position which the City of London enjoys. The County Council is to administer these new powers but in respect of the City the City Corporation is to have concurrent powers and be authorised as to the way in which they should be exercised. The City Corporation is sure not to be backward in its desire to see diminished the risk of tuberculosis among its population. The London County Council will be empowered to take samples of milk, to examine them for the tubercle bacillus, to visit farms from which tuberculous milk is received, to examine the cows therein, and to prohibit the supply within London of milk derived from cows found to be suffering from tuberculous disease of the udder. While the London population will welcome this additional safeguard to their health the London County Council may well be congratulated on the result of its continuous efforts to obtain powers of control over the supply of milk which the recent report of the Royal Commission on Tuberculosis believes to be a large cause of disease and mortality. The report of the Royal Commission has amply justified the Council in its action, and there is no reason to doubt that in providing a sufficient administration for dealing with this important matter the Council will be fully supported by the ratepayers. Further powers than those which are included in the General Powers Bill are undoubtedly needed, but these will have to be obtained through a Bill introduced by the Government, which, we are sure, will not be deterred by the Council's Bill of the present year from proceeding with a comprehensive measure for dealing with a matter of so much importance to human health. In the meantime the application of the "model clauses" to London will play a useful part.

## STERILE EMPYEMAS IN PNEUMONIA AND CARDIAC DISEASE WITH INTACT POLYNUCLEAR CELLS.

M. F. Widal and M. A. Philibert have shown that puriform, meningeal and pleural effusions may be due to accumulation of intact polynuclear cells and are sterile.[1] Such puriform pleural effusions, though rarer than septic effusions, deserve to be better known. At a meeting of the Académie de Médecine on July 9th M. Widal and M. Gougerot showed that they may occur during pneumonia or in case of cardiac disease with pulmonary apoplexy and be mistaken for pneumococcic pleurisy. The presence of intact polynuclear cells allows the diagnosis of sterile from septic effusions to be made. In septic effusions the leucocytes are damaged in consequence of the phagocytosis in which they are engaged. The distinction is important, because the prognosis of a sterile effusion is remarkably good. M. Widal and M. Gougerot referred to two cases of pneumonia recently observed by them in which a sterile pleural effusion with intact polynuclear cells developed. Purulent fluid was withdrawn by puncture. Its appearance was the more disquieting as the pneumonia had been severe and occurred in the course of influenza. But the presence of intact polynuclear cells allowed sterile pleurisy to be diagnosed and it regressed spontaneously. In one case defervescence occurred on the day after puncture and the signs of effusion disappeared two days later. In the second case 60 cubic centimetres of greenish-yellow, very fibrinous pus were withdrawn on the fifth day of an attack of pneumonia. Defervescence occurred on the eighth day and the effusion was rapidly absorbed. Nothing is more striking than to compare the evolution of such an effusion with a pneumococcic empyema. This was done in the case of two patients in the same ward. Both had at the end of an attack of pneumonia a small turbid effusion. Nothing in the course of the disease or in the macroscopic appearance of the effusion allowed the two cases to be distinguished, but cytological examination immediately differentiated them. The presence of intact polynuclear cells in one case allowed the rapid disappearance of the effusion to be foretold. The presence of worn-out polynuclear cells revealed the pneumococcic nature of the other, which was confirmed by culture. Defervescence did not occur at the usual time, the fever persisted, the effusion recurred and yielded only to thoracotomy. The contrast between the issues of septic and sterile effusions may be noted in the same patient. For exmple, a man had a subphrenic abscess after appendicitis and right pleural effusion developed secondarily by contiguity. The subphrenic abscess was purulent and fœtid and contained innumerable quantities of various microbes, aerobic and anaerobic. The polynuclear cells were damaged. The pleural effusion was small but puriform and turbid, and characterised by intact polynuclear cells. Microscopic examination, cultures, and inoculations gave negative results. Thus two very different collections of fluid were separated by the diaphragm. Their evolution also was very different. The pleural effusion was rapidly absorbed. The subphrenic collection increased and, in spite of operation, proved fatal. A puriform sterile effusion with intact polynuclear cells may also develop in the course of pleurisy due to a pulmonary infarct in heart disease. For example, a man, aged 44 years, was admitted into hospital on Jan. 5th, 1907, for hæmoptysis. There had been "a stitch" in the side for three days. The temperature ranged from 99·6° to 100·7° F. There was a mitral regurgitant murmur. On the 6th the patient had slight rigors, resembling some which had occurred when the pain in the side appeared. There were signs of a small left pleural effusion. The urine contained casts and six grammes of albumin per litre. Puncture of the pleura yielded a turbid, whitish, puriform, and fibrinous fluid, which contained numerous intact polynuclear cells, endothelial cells, and red corpuscles. Sterile pleurisy, consecutive to a superficial pulmonary infarct and of purely mechanical origin, was diagnosed. Rapid improvement occurred.

## THE REGISTRATION OF PLUMBERS.

THE organisation existing for the registration of competent members of the trade originated, and has been sustained, through the public spirit of the Worshipful Company of Plumbers, which has spent many thousands of pounds on the registration system. It is now, however, about to be taken over by the plumbing trade. A meeting recently convened at the Guildhall to deal with this matter was attended not only by representatives of the trade from all parts of the United Kingdom but also by representatives from professional and official bodies interested. It was agreed that the Plumbers' Company is still to retain a large share in the management of the new body. The work of the plumber is so intimately associated with questions of public health that the public will be gainers by thus raising the new organisation above any exclusively trade interest and this its continued association with the Plumbers' Company insures. Apparently the recent preference shown in the employment of registered men by many of the water companies, municipal authorities, and others, has led the trade, as a whole, to see that certified efficiency is not without its advantages. The enlarged representation will doubtless stimulate registration and may lead to some statutory recognition. A general council, composed of masters, men, and representatives of the Plumbers' Company, is to be created, which will elect an executive committee, having full control of registration, finance, and all matters relating to the new organisation. We have previously on several occasions alluded to the expediency of legislation to enforce the registration of plumbers and are pleased to see that the movement in its favour has received such material strengthening by the cöoperation of the trade as a whole.

---

[1] THE LANCET, May 25th, 1907, p. 1446.

## GASTRIC CANCER PRODUCING GASTRO-CUTANEOUS FISTULA.

IN the *New York Medical Journal* of July 13th Dr. A. E. Taussig has reported a case of a very rare condition—gastro-cutaneous fistula. A man, aged 53 years, came under observation on Nov 14th, 1906. In the summer of 1905 he began to suffer from a dull ache in the epigastrium, especially after eating. About Christmas a tumour could be palpated in the epigastrium, and in the following June exploratory laparotomy was performed by a local practitioner. Nothing further was done and the wound healed by first intention. He rapidly grew weaker and about the end of July a growth appeared in the region of the umbilicus. When Dr. Taussig saw him he was greatly emaciated, very cachectic, and white haired, and looked like a man 80 years of age. His temperature varied irregularly from normal to 101° F. He took only liquid food, but in sufficient quantity and with relish. In the epigastrium was a laparotomy scar extending along the middle line to the umbilicus, where it ended in a raw, granulating mass of about the size of a small fist and hard. The entire epigastrium was filled by a hard, nodular, immoveable tumour, apparently adherent to the parietes. A course of alcohol injections into the mass of ten drops of 95 per cent. alcohol was begun. After the first injection the centre of the mass became necrotic, forming a funnel-shaped depression. On removing the dressing after the second injection the gauze was found soaked with milk and a fistula through which a probe could be passed into the stomach was found. All the food and water subsequently flowed out of the opening, milk being passed unclotted. 24 hours after the establishment of the fistula death occurred. The necropsy showed a hard, nodular mass on the anterior aspect of the stomach joined by a thick, cylindrical bridge to the umbilical tumour. On opening the stomach the mass was seen to project into its lumen. About the centre of the infiltrated wall of the stomach was an opening large enough to admit the little finger. This opening soon narrowed into a tortuous fistula through which a probe could be passed to the opening above described. On opening the fistula it was seen to be lined with smooth hard cancerous tissue; there were no signs of an abscess anywhere. There were no metastases and apparently no glandular induration. Microscopically the tumour showed the characteristics of an adeno-carcinoma. Gastro-cutaneous fistula is a very rare condition and other causes of it are perforation of a gastric ulcer which gives rise to an abscess that eventually opens externally and tuberculous peritonitis causing perforation both into the stomach and externally. In 1858 Murchison carefully searched the records of three centuries and was able to find reports of only 25 cases of gastro-cutaneous fistula, of which 12 were due to gastric ulcer, six to trauma, one to necrosis of ribs, and six to gastric cancer. Since that time 18 more cases due to gastric cancer have been reported, making 24 in all. In 16 food passed through the fistula and in eight the opening was too small to permit this. In two of the latter, however, gas escaped from the stomach. The fistula occurred spontaneously in 16 cases and was produced by incision of a bulging abscess in the other eight. These fistulas may be produced in two ways. An abscess may form, usually between the stomach, liver, and colon on the one side, and the abdominal wall on the other. Usually the abscess is produced by gastric perforation, but sometimes a large abscess develops and perforates into the stomach secondarily. Sooner or later, if the patient survives and if the abscess does not discharge into the colon or pleura, it produces external bulging, usually in the epigastrium, and either ruptures spontaneously or is incised. Less frequently there appears to be no abscess formation at all; the gastric tumour becomes adherent to the abdominal wall, grows through it and appears externally, usually at the navel, as a fungous mass. The central portion becomes necrotic, and the necrotic process extends both to the gastric and the parietal ends of the mass and a fistula lined by cancerous tissue results. A complete gastric fistula may discharge only pus in consequence of the narrowness of the lumen or on account of its tortuous course. The dimensions of the external orifice vary, sometimes hardly admitting a probe, sometimes being over an inch in diameter. Death usually soon follows, the interval varying from 24 hours (in the case reported above) to 13 months (in a case recorded by Murchison).

## MYIASIS IN ALGERIA.

AN interesting study in parasitism is afforded by the observations of Dr. Edmond Sergent and Dr. Etienne Sergent on "Thim'ni," a form of myiasis occurring in Algeria, in a paper published in the *Annales de l'Institut Pasteur* of May 25th. For some years past they had noticed an affection of the face common among the shepherds of the mountains of Kabylie. The condition appears to be caused by the larvæ of the Œstrus ovis, which usually attacks sheep. The native name for this fly is "Thim'ni" and the same name is applied to the condition produced by its larvæ. It haunts the pasturages on the ridges and never descends to the villages. It deposits its ova while in flight, without settling, upon the eyes, the nostrils, or the lips of the shepherds, especially those who have eaten of the fresh sheep or goat's cheese. The condition is likewise found in dogs which are also fed upon cheese. If the ova are deposited upon the eye there is severe smarting, vision becomes impaired owing to the swelling of the conjunctivæ, and active white larvæ move over its surface. When they are deposited in the nostrils the pain is very great; and there are severe frontal headache preventing sleep, itching about the frontal sinuses, and a continual serous discharge from the nose. If the lips are the site of the affection inflammation extends to the throat and deglutition becomes difficult and painful, while cough is troublesome. Similar conditions are produced in dogs. The affection lasts from three to ten days and cure is always effected. The treatment adopted by the natives is in the case of the eye to remove the larvæ with a small piece of linen, for the nose to smoke tobacco or to snuff with it, and for the throat to gargle with an infusion of tobacco, onion, garlic, or pimento. The fly is difficult to secure, but the writers were able to find it in the very hot weather flying above the sheep and to establish its identity with the Œstrus ovis of Linnæus, the characters of which they describe in detail in their paper. Hitherto, this fly has not been recognised as attacking man except for a few observations, such as that by S. Kirschmann in Russia. A study of the distribution of the fly in its relation to the condition produced by it in man revealed the interesting fact that this fly only attacks man in certain mountainous regions, where the number of sheep is less than the human population. In other regions where sheep are abundant man is not affected or only attacked in rare instances.

## SARCOMA IN RATS.

A form of sarcoma occurring in rats and capable of inoculation forms the subject of an important note by Dr. Simon Flexner and Dr. J. W. Jobling of New York in the *Centralblatt für Allgemeine Pathologie und Pathologische Anatomie* of April 15th. The original tumour began in the seminal vesicle of a white rat and proved to be capable of inoculation both in white and grey rats. In the first trial inoculation succeeded in from 20 to 30 per cent. of those investigated only, but in later trials by using the more rapidly growing tumours in an early stage for inoculation successful results were obtained in from 95 to 100 per cent. Inoculation was successful whether done subcutaneously or by intramuscular or intraperitoneal methods. After inoculation the growths infiltrated surrounding tissues and in the case of the skin went on to ulceration. There was no sign of encapsulation, growth occurring at the periphery into the surrounding tissues. The nodules in the subcutaneous tissue were at first freely moveable, but later became fixed to the skin or to the muscles. Intraperitoneal inoculation usually led to multiple tumours in the omentum, the mesentery, and between the liver and the diaphragm. Sometimes the kidneys became involved in the growth; in other cases ascites was produced with a general miliary sarcomatosis of the peritoneum. A remarkable feature of this tumour was its tendency to produce widespread metastases. These were most frequent in the lungs and in the peribronchial lymphatic glands, but were also found in the ribs, intercostal muscles, the kidneys, and the heart. Rats with a primary tumour could be successfully inoculated a second time. It appears that those rats in whom a first inoculation with a less active growth has been unsuccessful often show a greater resistance to a subsequent inoculation with a more active form of the growth. Histologically the tumour appeared to be a mixed-celled sarcoma. The cells were spindle-shaped and polyhedral and a considerable number of giant cells were present. There was only a little fibrillar ground substance. In parts of some of the tumours tubular or irregularly alveolar arrangements of the cells could be recognised.

The occasional presence of the meningococcus in the kidneys and urine of patients suffering from epidemic cerebro-spinal fever has led Dr. Pick of Berlin to recommend the systematic disinfection of the excreta in this disease. In Scotland during the week ended August 3rd, there were nine deaths from this cause registered in Glasgow, two in Leith, one in Edinburgh, one in Dundee, and one in Paisley. In Glasgow the weekly report issued on August 2nd showed that there were at that time 47 cases under treatment.

Mr. Andrew Carnegie has given £100,000 for King Edward's Hospital Fund for London. Mr. Carnegie expresses the desire that it should be used as seems best, "the more strenuously for reform the better."

## THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Although the proceedings of the British Association for the Advancement of Science, which were commenced at Leicester on Wednesday, July 31st, were not marked by any startling announcements from any particular field of scientific research yet it must be owned that the presidential addresses and the papers read in the various sections were in general numerous and interesting and served to summarise the position of scientific progress so far as it has gone. On past occasions the subject chosen by the newly elected president for his opening address has frequently touched the fringe of medical science or related in some way or other to some branch of the healing art, a circumstance which has often called for the publication of the address in full in these columns. On the present occasion, however, the choice of President fell upon the distinguished astronomer at the Cape, Sir David Gill, K.C.B., LL.D., D.Sc., F.R.S., who naturally confined his observations mainly to that department of science with which the labour of his life has chiefly been associated. The result was an exceedingly interesting review of the progress of astronomical science. He referred to the extraordinary revelations which had arisen out of the adoption of spectrographic methods, to the discovery that the nebulous light of the sky consists after all of masses of luminous gas, out of which stars or suns have been, and are being, evolved, to the amazing truth that the stars—"the crucibles of the Creator"—are alike in design, in chemical constitution, and in process of development. "The spectroscopic astronomer," said Sir David Gill, "has to thank the physicist and the chemist for the foundation of his science, but the time is coming," he added, "when the astronomer will repay the debt by wide-reaching contributions to the very fundamenta of chemical science."

The address to the Physiological Section was delivered by the president, Dr. Augustus D. Waller, who discussed the action of anæsthetics. He referred to the attempts that have been made to determine what he thought might be designated as the physiological arithmetic of chloroform, the question of dosage. Death by chloroform he believed to be an avoidable fact which will be diminished in future years by a wider knowledge of the physiology of anæsthesia. The safe administration of chloroform consisted, in his opinion, in its continuous administration at a strength of between 1 and 2 per cent. Dr. Waller then described apparatus by means of which absolute standard mixtures of air and chloroform could be administered. Dr. Frederic W. Hewitt, in the course of the discussion, said that whilst he recognised the value of Dr. Waller's and Professor Vernon Harcourt's work upon this subject it was impossible to apply the method of exact percentages of chloroform in many cases and equally impossible to instruct students wholly in that method. Certain subjects required a higher percentage of chloroform than others and individuality entered largely into the matter in practice. Still he agreed that by the percentage method, aided by the practical knowledge that came of experience, the administration of anæsthetics might be robbed of its terrors.

In the Physiological Section, also, an interesting debate on the Physiological and Therapeutic Uses of Alcohol was opened by Professor A. R. Cushny. He observed that alcohol might sometimes increase the taste for food and encourage its digestion, but when moderation was departed from the whole of the digestive processes were disorganised. In some conditions, such as old age and debility, it might be justifiable to neglect the drawbacks of alcohol but it ought to be advised only with eyes open to the risks run and with the recognition that a drug was being prescribed. Certain investigations had shown that the abuse of alcohol lessened the resistance to invasion by pathogenic organisms but there was nothing to show that the habitual use of alcohol in small quantities or its therapeutic use had this effect, and the whole interest of the question lay in the dietetic use of alcohol as contrasted with the drunkard's abuse of it. An interesting discussion followed, in which the President, Dr. W. H. R. Rivers, Dr. Dixon, Sir Victor Horsley, Mr. C. J. Bond, and Dr. Reid Hunt of Washington took part.

The presidential address in the Botanical Section was delivered by Professor J. B. Farmer, M.A., F.R.S., who presented the result of his reflections on some of the aspects of botany that are often not seriously regarded. Perhaps the most interesting part of his discourse was that which dealt with the examples of interference with the developmental processes. "Disease," he said, "represents the necessary outcome of a disturbance, however introduced, into the course of metabolism which diverts it from the normal channels." Pathology thus recognises that the explanation and the consequent control of disease lie ultimately in the correct appreciation of the cellular reactions as the result of their experimental study. He believed that we have gained enough insight into the chemistry and physics of the living processes to warrant us in hoping that we shall penetrate a good deal deeper still. When the conditions for the manifestation of life and all that it implies are satisfied, what will be produced depends partly on the structure of the apparatus itself (i.e., on the hereditary organisation), partly on the nature of the substances fed into the apparatus, and finally, on the physical conditions under which it is working. The goal will not be reached, he added, until we have solved the problem as to the nature of organisation itself.

"What is an atom?" formed the momentous issue at one time in the section of Mathematical and Physical Science, where were gathered together both physicists and chemists each claiming for this mighty particle an electrical or chemical definition according to whether the claimant was chemist or physicist. Sir OLIVER LODGE did not mince matters and at once acknowledged that he was prepared to champion the electric theory of matter, regarding it as a working hypothesis of the most valuable kind in providing a guide to experiment, and he trusted it would long continue to hold the field and to stimulate the work of many explorers. He regretted that Lord Kelvin had not accepted this theory but had shown a disposition of late "to destroy his own children." Sir WILLIAM RAMSAY acknowledged the great light which physicists had thrown on the question but as a chemist he was more interested in the proximate than in the ultimate construction of the atom. Later, Sir William Ramsay referred to his experiments with radium emanation (already described in THE LANCET) in which there appeared to be distinct reason for believing that the energy of the emanation had "degraded" copper into lithium.

The atomic theory was also discussed by Professor A. SMITHELLS in his opening address to the section on Chemistry. He did not admit that the investigations of radio activity had entailed anything like an unsettlement of their scientific articles of faith. The atomic theory stood to-day as an indispensable instrument for productive chemical work, it had neither had its day nor ceased to be. The hard indivisible ball of specific substance had served chemistry well, better, perhaps, than the bells and vortex rings of the physicist. Professor Smithells discoursed also on the subject of flame, a study to which he has given special attention and added great interest. He did not think there could be any doubt that the luminosity of the hydrocarbon flame was due essentially to the separation within the flame of minute solid particles of what was practically carbon.

In the Biological Section Mr. OSWALD H. LUTHER read a paper on the Teaching of Biology in Schools. He said that as a training in experiment, in precision, and in exact reasoning biology perhaps has not the advantages of physics and chemistry, but in quickening the powers of observation it was, he thought, unsurpassed by any of the sciences. As to the contention that anatomy and physiology are "nasty" and even indecent and not fit subjects of education *virginibus puerisque* he asks, "Are we to do all we can to encourage the study of animal life and then deny all information and guidance on phenomena (the processes of reproduction which it is proposed should be left out of the curriculum) which are bound to come under observation as though these were something unholy and unclean?" He contended that curiosity on these matters is natural and inevitable and therefore he submitted that it is far better—it is best—that this legitimate curiosity should be satisfied and instructed in a clean, wholesome, and scientific way than by any other means, and it is only by such a course that a reverent respect for the whole body, whether of brute or man, can be gained.

We have attempted but a brief sketch of part of the proceedings of the British Association this year, but we have said enough to show that the subjects brought under discussion were completely cosmopolitan in character.

# FORTY-NINTH ANNUAL REPORT OF THE GENERAL BOARD OF COMMISSIONERS IN LUNACY FOR SCOTLAND.

THERE were 17,593 insane persons under official cognisance on Jan. 1st, 1907; of these 2563 were maintained from private sources, 14,979 by parochial rates, and 51 at the expense of the State, the total increase during the year being 143. The following figures indicate the difference in the manner of distribution of registered lunatics compared with those on Jan. 1st, 1906. In Royal asylums there is a decrease of 12 private patients and 124 pauper patients. In district asylums there is an increase of 31 private patients and of 401 pauper patients. In private asylums there is a decrease of 17 in the number of private patients. In parochial asylums there is an increase of 35 pauper patients. In lunatic wards of poorhouses there is a decrease of 168 pauper patients. In private dwellings there is an increase of seven private patients and of 22 pauper patients. In the year 1905 there was a decrease in the number of pauper patients in 15 counties. In the year 1906 there was a decrease in 18 counties. These counties include large industrial centres such as Aberdeenshire, Forfarshire, and Fife. The total decrease in the number of pauper lunatics in the 18 counties above mentioned amounts to 96, as compared with a decrease of 59 in 15 counties during the previous year. This decrease is more than counterbalanced by an increase of 262 in the remaining 15 counties, but of this increase 77 per cent. is contributed by the counties of Edinburgh, Lanark, Renfrew, and Stirling. Since 1858 the number of lunatics on the register of the Board has increased 197 per cent., while the increase of the population during the same period has been 56 per cent. This is a fact, however, which has no bearing upon the question of the increase of insanity, as the provision made for the insane in 1858 was altogether inadequate and the Act passed in the previous year was to remedy this defect and to place a larger number of the insane upon the Board's register. The Commissioners report with great satisfaction that the statistics of the past two or three years seem to show that a point has been reached beyond which no considerable increase of registered lunacy need be looked for, except that which corresponds to the increase of the population. The largest actual number ever placed on the register in one year occurred in 1902, when it was 3660. The number was 3658 in 1904; 3449 in 1905; and 3370 in 1906. When it is considered that these decreases have occurred in a population which is estimated to be growing at a considerable rate, the figures are significant. And, further, what is even more significant is the fact that the numbers registered for the first time for the combined classes show a continuous fall during the past four years, and the largest fall occurred in the year 1906. The number of voluntary patients admitted into the asylums during 1906 was 103, which is about 20 over the average number so treated, and the Commissioners speak highly of the value of this form of treatment. The recovery-rate taken from the recoveries per cent. of admissions, excluding transfers, is 41·2 for private patients, or about an average one, whereas for paupers there is a marked decrease. The Commissioners account for this by the increased use of the observation wards connected with parochial hospitals, which probably intercept a considerable number of persons suffering from passing attacks of mental disorder, many of whom in the absence of such wards would have been removed to asylums. The proportion of deaths per cent. of the numbers resident in all establishments is 9·1 for private patients and 9·5 for pauper patients. A licence was granted for the establishment of one new private asylum.

The establishments for the insane in Scotland arrange themselves in the following groups: (*a*) Royal and district asylums; (*b*) private asylums; (*c*) parochial asylums; (*d*) lunatic wards of poorhouses; (*e*) training schools for imbecile children; and (*f*) criminal department. Several pages of the report are devoted to matters concerning the various institutions above referred to.

The number of private patients who were provided for in private dwellings with the sanction of the board on Jan. 1st, 1907, was 133; one-third of these were in houses which possessed a special licence for the reception of not more than four patients, and two-thirds were placed singly in houses, which, having only one patient, require no licence.

The number of pauper patients provided for with the sanction of the board in private dwellings on Jan. 1st, 1907, was 2774, showing an increase of 22 compared with the preceding year. Of these, 972 were boarded with guardians who are relatives and 1802 with unrelated guardians. Referring to the patients who are under private care in private dwellings Dr. John Macpherson writes: "The great majority of patients boarded with strangers could not be better taken care of if they were living with their own relations. It would be surprising that the small remuneration offered should call forth so much self-sacrifice and devotion as are often shown, were it not known that among the better guardians a patient who has lived for some time in the house comes to be regarded as one of the family." The Commissioners draw attention to the want of accommodation for the poorer class of private patients. They give a table which shows that on Jan. 1st, 1907, there were 295 private patients in district asylums formally registered as such and on May 15th, 1906 (the latest date available for the class), there were 230 patients registered as pauper patients but wholly maintained by their relatives or from other private sources, making in all 525. A table is published showing the amount of restraint and seclusion employed and it indicates what an enormous reduction has taken place in this form of treatment during the last five years. In order to furnish the Royal Commission on the Care and Control of the Feeble Minded with the information desired by it a return was obtained from all establishments for the insane in Scotland, showing among all patients admitted during the five years 1901–05 the number respectively (1) of those who had been imbecile from birth or early life; and (2) of those affected with insanity first acquired in adult life. The proportion per 100,000 of the population was 44·5 of the imbecile class and 568·0 of the acquired insanity class. An attempt was made to discover the relative proportion from the rural areas as compared with the urban districts but the number of admissions for five years proved much too small to make any conclusion on this point possible. There is an instructive statement in the report regarding the cost of building district asylums which is well worth careful perusal. The total cost of maintenance for 17,336 pauper lunatics, who were under care for longer or shorter periods durug the year 1906 in asylums, lunatic wards of poorhouses, and private dwellings, and for other expenses connected with them, was £391,108; of which £311,046 were for maintenance in asylums (including institutions for imbecile children), £19,197 were for maintenance in lunatic wards of poorhouses, £49,732 were for maintenance in private dwellings, and £11,133 were for certification, transport, and other expenses. Of this expenditure £21,577 were repaid by relatives and £115,972 were contributed from the local taxation account in terms of Section 22 of the Local Government (Scotland) Act, 1889, and of Section 2 of the Education and Local Taxation Account (Scotland) Act, 1892 The net expenditure by parish councils on the maintenance of patients was £253 559. The report contains the usual valuable tables and statistics.

## THE INTERNATIONAL HOUSING CONGRESS.

THE eighth meeting of the International Housing Congress was formally opened by Sir John Dickson-Poynder at Caxton Hall, Westminster, on the forenoon of August 5th. Although this is its first meeting in London the congress is not of recent origin, for it was first formed in 1889, and as we have already mentioned has met in Paris (twice), Antwerp, Bordeaux, Brussels, Düsseldorf, and Liège. It has a permanent committee, of which M. Lepreux (Belgium) is the chairman. The Governments of Austria, France, Germany, Russia, Spain, Sweden, Norway, Denmark, Belgium, Holland, Hungary, Italy, South Australia, and New Zealand have sent official delegates. The United States of America and Japan are also represented, as well as a large number of European cities, including Paris, Marseilles, and eight other places in France; Berlin, Hamburg, and 29 other places in Germany; Brussels, Antwerp, and ten other places in Belgium; and Amsterdam, Rotterdam, and four other places in Holland. The United Kingdom is represented by the Local Government Boards of England, Scotland, and Ireland, by several county councils and London borough councils, and by a number of provincial towns. All the papers read before the congress were printed in English, French, and German.

Sir JOHN DICKSON-POYNDER in his introductory remarks spoke of the importance of the question and the difficulties with which it was surrounded; he said that it was common to all industrial countries and that international conferences were valuable means of suggesting remedies for the existing evils.

Mr. JOHN BURNS, President of the Local Government Board of England, welcomed the Congress on behalf of the Prime Minister and the British Government. He said that in London all types of houses, all varieties of architecture, and all methods of building were to be seen. In every country, old and new, the people were being rapidly urbanised, and if the urbanisation of the poor were not controlled devitalisation of the people must occur. Improvements were being made in London, and in fact the progress made in the last decade was greater than in the previous century. London, however, was not yet what it should be. The proportion of overcrowded population, living more than two in a room, was: in London, 1 in 7; in Leeds, 1 in 10; in Sheffield, 1 in 12. Nevertheless, the death-rate in this country was roughly the lowest in the world, and with regard to housing there were five persons per house in England, where they lived in cottages; 10 persons per house in London, where they lived in houses; 20 per house in New York, where they lived in tenements; and 26 in Paris and 46 in Berlin, where they lived in barracks. In New York, where he had recently been, notwithstanding the alleged superiority of comfort and wealth, there were 350,000 dark interior rooms, and 2,300,000 persons living in 82,000 tenement houses. With regard to reform they must not be too peremptory or too uniform in dealing with different conditions. The class affected by the housing difficulty were not the rich or the middle classes, or even the artisan class in whose houses great improvement had been effected along with improved knowledge and increased sobriety. The difficult class was that of the unskilled labourer, whose home was a place to be away from and live out of, a noisy rendezvous provoking appetites which found solace in the public-house. Where casual labour was endemic poverty was epidemic. But as the causes were multiple, so the remedies must be multiple, the essential condition being to raise the wage of the unskilled labourer, who must also have improved education and be brought up to the standard of the artisan. Mr. Burns contrasted the poor man's home with the housing of criminals, paupers, and lunatics, on whom as much was spent per bed as reformers asked for to provide a whole house for a family. After referring to the importance of traction and the work of the London County Council, especially in the provision of trams, he warned them not to be too enthusiastic about any particular remedy. The evils were multiple—there were the rush to the towns, the immobility of skilled labour, drinking habits created and perpetuated by slum life, and female labour. With regard to the rural exodus he believed that a rural return was going on, that the excitement of town life had been found out, and the benefit of fresh air recognised. In conclusion, he strongly deprecated the view that in finding better homes for the people the State should do more than it had been doing, the municipality less, and the individual still less. His opinion, on the contrary, was that individual action was an essential requisite for success.

The MAYOR of WESTMINSTER also delivered a short address of welcome, after which a vote of thanks to Mr. Burns and the other speakers was passed, on the motion of M. LEPREUX, seconded by Signor MAGALDI (Italy).

In the afternoon Alderman WILLIAM THOMPSON delivered his presidential address. He said that there was a general agreement of opinion to the effect that unhealthy dwellings and slums should be improved or destroyed at the expense of somebody. It was also generally held that the public up to now had had to pay too much for getting rid of the dangers, so often caused by neglect or selfishness of private individuals or of the owners of such property. The new housing accommodation was insufficient in quantity, inferior in 'quality, or, in many vital respects, unsuitable in character, the place that should be occupied by cottages, for which there was a great demand, being filled by a kind of spurious villa which was not really wanted. It was therefore necessary to encourage private owners and local authorities by means of one kind or another to increase, improve, and vary the supply of new and suitable dwellings. Contrary to many prevailing notions, municipal building in towns had not been followed by a diminution of private enterprise but rather by increased activity on the part of societies and individuals.

Papers were also read on House Inspection and on the Land Question.

# THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS: COMMITTEE MEETING AT LONDON.

(FROM OUR SPECIAL COMMISSIONER.)

ON Friday evening, August 2nd, members of the British Association of the Medical Press were in attendance at the Langham Hotel to receive the representatives of the medical press associations of other countries. Unfortunately there were disappointments at the last hour. The Dutch delegate, for instance, was prevented from attending and there was not time enough to find a substitute. The Italians had promised to send three delegates, but in any case they did not arrive in time. There were consequently representatives from Austria, Germany, Belgium, France, Norway, and Great Britain, only six nationalities, and this is an illustration of one of the great difficulties that beset this in common with all other international associations. A society to be really international must be governed by a committee the members of which live in the country they represent and who have therefore to travel long distances so as to meet each other. Thus in regard to the present organisation it will be remembered that its creation was definitely decided at the International Congress of the Medical Press held in Paris in 1900. Then in 1902 an international conference was convoked at Monaco to draw up the statutes of the proposed association. These were adopted by the Second International Congress of the Medical Press held at Madrid in 1903 and in September of the same year the committee of the association met at Brussels. In 1905 the committee came together again at Berne and in 1906 a general assembly of the association was held at Lisbon. Finally this year the committee has met in London. Next year it will go to Berlin and the year following there will be the next general assembly of the association at Budapest. It is necessary, therefore, to be a somewhat experienced and hardened traveller to follow the society in all its peregrinations and it is not surprising if there is but a small attendance at these meetings.

On the morning of August 3rd the delegates met at the rooms of the Medical Society of London which is next door to their hotel. Professor POSNER of Berlin, President of the Association, took the chair, and, after expressing his thanks to the British members for organising their reception, called upon the general or international secretary of the association, Dr. R. Blondel of Paris, to present a report on the general situation.

Among other details given by Dr. BLONDEL he explained that they had been successful at Lisbon in some of their work. One of the objects of the association was to see that all the necessary facilities and privileges were provided for members of the association who attended congresses so that they might do their difficult work with as much ease as possible. At the International Congress of Medicine held at Lisbon in April, 1906, the Portuguese organisers of the medical congress gave to the medical press all that they requested. They also printed a report of the proceedings which was now distributed among the delegates present. This was the first effect produced by the association and they were going to get similar advantages for the International Congress to be held at Budapest in 1909. The next question was that of medical papers (so-called) issued by manufacturers and distributed gratuitously. Nothing definite had been achieved. This had become a real plague in France. Firms preferred to spend £1000 a year in issuing a publication of their own rather than spending the same amount in giving advertisements to genuine medical journals. Consequently the income from advertisements was decreasing. A committee had been appointed to deal with the matter but it could not agree as to a formula. What constituted a gratuitous publication? All papers could pretend to have purchasers. Now in France if the advertisements fell off they would have to raise the sale price or subscription, but then the subscribers would cease to subscribe, so that medical papers were menaced with extinction. Doubtless, if it had become a matter of sufficient advantage to be a member of the Association of the Medical Press something might be done by excluding those who contributed to these gratuitous journals. As matters now stood, however, such authors would not care if they were excluded. In regard to copyright nothing new had occurred since the meeting of the committee at Berne. It was then decided that authors should not publish the same paper at the same time elsewhere, even in another country and in another language, without giving due notification that they intended to do so. Still, speaking of the French Medical Press Association, Dr. Blondel said that many of its members did not appreciate the use of the International Association. Some of them had even proposed not to subscribe, but this occasioned very energetic protests, the President going so far as to say he would resign if such a proposal were carried. The suggestion was easily set aside. The fact nevertheless remained that the association had not yet succeeded in rendering services of such an indisputable character as to make its usefulness generally recognised. Much more had to be done. The International Association struggled for others who did not support the association. Dr. Blondel explained that illness had, at the last moment, prevented one of the three delegates to which France was entitled from being present. The Russians still refused to answer letters. There was the disturbed state of the country and the fear of compromising themselves politically to account for their silence, but he thought that perhaps the blunder committed in 1900 had not yet been forgiven. They had unintentionally received a person who was not properly delegated; but the real delegate, instead of attending, said it was too hot and went off to Trouville. Also the Russians are as bad as the Americans in the infringement of copyright and that might account for their absence. As for the Italians, they were still quarrelling among themselves with deplorable persistency and energy. The general secretary had written four times, registering the last two letters, to Dr. Ascoli, who was one of the Vice-Presidents of the International Association, and yet he had received no answer. Dr. Bossi replied and promised to come and two other Italians were to accompany him but they had not arrived. Evidently it would be necessary to wait till the Italians had finished quarrelling and had collected some funds. All countries were not like England with its two great leading journals working harmoniously together. Something would have to be done to secure a Hungarian representation, though as yet there was not even a national organisation in Hungary. The Bohemians and other nationalities united to the Austrian Empire might come in.

Dr. DOLÉRIS, the second French delegate, also spoke at some length, confirming much of what Dr. Blondel had said. There were in France the druggists' press and the genuine press, and it was a mistake to despise the former. There was one firm interested in ferruginous products that published a paper often containing good articles written by able men who were well paid. The editor received £400 a year. Evidently such things should not be, and medical men who wrote for manufacturers of drugs should not be admitted into the Association of the Medical Press. In France they had formerly been very severe but they had become lax and it would now be necessary to purify their ranks.

Professor POSNER of Berlin reported for Austria and Germany. The organisation of the medical press published in the German language had progressed. At first the work was slow but now they had enrolled all the editors of the archives as well as of the journals. Thus they had become a force and this they proved by taking action against authors who were poisoning public opinion. There were medical men who offered to sell to manufacturers of medicaments articles describing the cures they were supposed to have effected by the use of one of the manufacturer's drugs. If the article was refused they simply changed the name of the drug and tried another manufacturer. They might offer to give the details of, for instance, a hundred cases for a thousand marks. The German Association of the Medical Press had approached the manufacturers. They were well received and supplied with documents that left no doubt whatsoever as to the venal character of the practices described. A list had therefore been drawn up comprising more than 40 names, and these were not all Germans, but there were Austrians, Italians, and others anxious to sell their services to the German druggists. The German Association of the Medical Press has decided not to publish any contributions from these persons. Further, should any paper insert an article from these writers that paper will not be admitted into the association. This may result in their having to expel from their association some of the papers already admitted, but in this rested the power and opportunity of making a worthy press and of rendering it a privilege and an honour to belong to the German Association of the Medical Press. The question as to the legality of a black list had been raised. In Germany it was not thought illegal if it could be proved that it was for the public good and not due to any personal animosity. However, one of the black-listed men had taken legal action; therefore a verdict would soon be rendered which would clear up this somewhat doubtful question. Among other works attempted an effort had been made to regulate spelling and rules had been established to govern newspaper controversies. The opener of the controversy had the right to conclude but it was not always easy to ascertain who had begun the controversy. In that case the editor had the right to decide. Again, there was the question of rejecting certain classes of advertisements, and the German papers were all being brought into line, so that they should each act in the same manner. Thus recently a remedy was to be advertised with exaggerated descriptions of its efficacy. Therefore all the papers refused to insert the advertisement. The manufacturer had then to modify his tone, and the advertisement was only inserted when all exaggerated and false statements had been withdrawn. Professor Posner concluded by saying that the committee must meet again before the Budapest Medical Congress and, on behalf of the Austro-German press, invited the committee to come to Berlin at a date to be fixed according to circumstances.

Dr. Déjace, speaking on behalf of the Belgian Association of the Medical Press, said that they had also been engaged in raising the moral tone of the medical press. In 1898 a law sanctioning professional associations was passed and since then they had attempted to group the medical profession. The difficulty was to find disciplinary powers, for the law was very severe against boycotting. In Belgium they had better prospects of success by creating advantages than by inflicting penalties. Thus, they had organised at reduced cost scientific excursions to visit foreign countries. In regard to gratuitous papers, these were not published in Belgium, but a great many came from abroad. In Belgium the sale of their medical papers only just paid for the printing. If the contributors were paid this could only be done from the product of the advertisements, and the papers that were distributed gratuitously did much mischief.

From Norway and Great Britain there was nothing new to report and the committee then proceeded to consider the financial situation of the International Association. Dr. Dawson Williams as international treasurer presented his accounts and books, from which it appeared that some of the smaller nationalities had not yet paid their subscriptions. This subscription amounts to 20 francs per annum per member allowed on the international committee. Thus Great Britain, being represented by three members, pays 60 francs, and Belgium, as a smaller country, has two members and therefore pays only 40 francs. If some of the subscriptions due have not yet come in it may as an offset be noted that, as yet, no money has been spent. The general secretary, Dr. Blondel, has carried on the international correspondence for now seven years at his own expense but refused to make any change and declared that he had kept no account. It was, however, determined that in future his office expenses should be reimbursed. It was also decided to issue a pamphlet giving an account of all the medical press associations which formed part of the International Association. The sitting then adjourned for lunch.

*(To be continued.)*

# THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

This Congress was opened by the Earl of Crewe, Lord President of the Council, on August 5th at the University of London. A very large attendance included delegates from all the countries of Europe, the colonies, North and South America, and from various bodies in Great Britain. Lord Crewe presided and was supported by Sir Lauder Brunton (the President of the Congress), Lord Londonderry, Lord Fitzmaurice (Under Secretary for Foreign Affairs), Lord Cheylesmore, Sir Robert Morant (Secretary to the Board of Education), the Greek Minister, Sir Norman Lockyer, Sir James Crichton-Browne, Professor Griesbach (Germany), Dr. L. H. Gulick (United States), Sir Alexander Pedlar (India), Dr. A. Mathieu (France), Sir Philip Jones (New South Wales), and Dr. L. Burgerstein (Austria).

Lord Crewe, who was enthusiastically received, rose formally to open the Congress. He said that the first duty he had to perform in connexion with the opening ceremony was a very agreeable one. He had a gracious command from the King to express to them the interest with which His Majesty regarded the subjects with which that congress was concerned and his regret that owing to his enforced absence from London he was unable to receive those who were to attend the Congress. He was also privileged, on behalf of the Government, to offer them all a hearty welcome. It was not in a strict sense an official conference. He regretted that it had not been possible to hold the Congress at a time of year when London was less deserted than it was at present. This was the date most convenient to most of its members, and they only expressed that regret in the fear that the stay of those who had come from abroad, from the colonies, and from different parts of the Empire might be less agreeable than if the Congress had been held at some other time of the year. The scope of the discussions at the Congress was exceedingly wide. It seemed to him that the subject divided itself into two main branches. The first was exceedingly obvious and necessary, but so far as this country was concerned its usefulness must be regarded as limited. He alluded to the whole question of hygiene so far as it was concerned with school buildings and school sanitation. On the second branch of the subject—namely, the health of the children themselves and the manner in which the instruction given them could be used to their best advantage—foremost in the minds of all there necessarily came the question of medical inspection. That was a subject on which there might exist legitimate differences of opinion as to the machinery, but as to the importance of the subject itself there could not be two opinions. Classification might be said to be the grammar of science, and in applying the science of hygiene to the question of education they were beginning to see how necessary it was to classify it. To a certain extent, of course, in this country, though they might be described as in some degree backward, that had already been done. Where children were obviously mentally deficient they had already set them apart but they were beginning to understand that classification must go a great deal further. They saw that there were many children, he feared a large number, who were not blind but who could only see imperfectly, a great number who were not deaf but who heard imperfectly, and many more still who suffered from congenital defects connected with breathing which, if not dealt with early when they could be simply dealt with, might have the most disastrous effects upon their future lives. They were also beginning to understand the great importance of applying the arts of dentistry to the children in their elementary schools at an early age. All these matters they desired to deal with on grounds of humanity in the first place but they were also deeply impressed by the fact that to deal with them in a satisfactory way was also a very real piece of national economy. Where defective children were subjected to the discipline of the school, and to what for them was the overwork of the ordinary curriculum of the school, they were likely to become less good citizens and a greater danger to the State than would have been the case if they had been left alone altogether. That was what they desired to correct and what they believed the Congress could do much to instruct them about. Then there was the further branch of their discussions as to how to make healthy children healthier still by means of physical training. They learnt that, however good physical training might be in itself, it was useless to apply it to defective children or to underfed children. They were about to undertake arduous labours and he hoped that the result of their meeting might have the best possible effects. It must be a good thing for those belonging to different nations and used to different systems to interchange ideas and to engage in a most honourable and friendly rivalry as to which nation and which system could best carry out the objects they all had in view. He hoped, therefore, that their deliberations would do much to advance the knowledge of school hygiene and to remove what they must all regard as having been a serious blot on the civilisation of the world.

Lord Londonderry said that it was as President of the Board of Education that he was closely associated with that important question. He agreed with Lord Crewe in regard to what he had said about the medical inspection of schools. He had always been in favour of boys' brigades and cadet corps, for they taught the youth of the country the discipline which was always of use to them in after life. He agreed that the rifle should not take the place of games, but considered that the two should be combined.

Sir **LAUDER BRUNTON** then delivered his presidential address. After welcoming the delegates, he said that he was sure that the first duty which they would wish him to perform as their president was to voice their thanks to the King, Patron of the Congress, for the gracious welcome which they had received from him through his representative, Lord Crewe. It was through the King's personal interest in overcoming difficulties that the success of the Congress had been made possible. Its success would not be due only to the work which they trusted it would accomplish during the time of its sitting, but after it was over, for they hoped that arrangements would be made by which its work would become permanent and would be carried on in the intervals between successive Congresses. The First International Congress, which owed its origin to the enthusiasm and energy of Dr. Griesbach, whom they had the pleasure of seeing amongst them, held its first sitting three and a half years ago at Nuremberg. An invitation was sent from the Royal Sanitary Institute of London to ask the Congress to hold its second meeting here. A second invitation was also received to hold the Congress in Paris, but their French *confrères* withdrew their invitation with courtesy and grace on learning that ours had been previously received. They were met from every part of the civilised world, throwing aside every subject of disagreement, and were intent only on one common object—the health of the children. They all desired that their children should grow up healthy, strong, and happy and they were all anxious to take the best means at their disposal to obtain such a desirable end. In civilised communities the complexity of conditions sometimes led, and, indeed, had led, to mistakes in education, and the very meaning of the word had been forgotten, so that instead of drawing out and developing in every child all his possible powers of body and of mind education had degenerated into a system of cramming and cultivating one or two faculties of the mind, and especially that of memory, to the injury of others, while the condition of the body as the servant of the mind had to a certain extent been lost sight of in this country. They were now awakening to the necessity of attending to the body if the mind was to be developed. The great advantage of a Congress like this was that the systems employed in various countries were brought together and compared. One of the most important subjects of all in this respect was that of medical inspection in schools, because that was the keystone of physical education. Without it the defects of eyes, ears, nose, and teeth which affected individual scholars could not be ascertained, and so those children remained backward in their learning, suffering in their bodies and so much damaged in physique that they were unfitted for many occupations, could not enter the army, and went to swell the numbers of the criminal classes. Equally important were those hidden defects of heart and lungs which rendered the physical exercises, suitable for others, harmful and dangerous to the child with a weak heart, and made a child suffering from pulmonary tuberculosis unsuitable for school life and a source of danger to his companions. By the early recognition and isolation of infected children the necessity for closing schools might be, to a great extent, prevented, the spread of skin diseases completely checked, and even a fatal disease like diphtheria might be almost stamped out. The confinement and work in school had an exhausting effect upon many children who suffered in consequence from anæmia and debility. In order to prevent this it was necessary that the children should have as much fresh air and sunshine as possible. A most important departure in this respect was the recent establishment by the London County Council of a *Waldschule* or open-air school at Abbey Wood, where weakly children had the open air, rest, and abundant food necessary to restore them to health and strength. The necessity of separate training for children who were mentally deficient was already generally recognised. Separate schools for cripples were now being established, but while it was good to train them it was still better to prevent them from becoming cripples, and this could, to a great extent, be done by medical inspection. The technical training which the cripples at present received ought not to be limited to them, but ought to form a part of the regular teaching which would fit both boys and girls for their duties in after life. In many cases, where the deformity was slight, it might be cured by a proper system of physical exercise. Physical training of children in some countries was carried out by systematic exercise which developed the muscles, while in this country we depended more upon games. Both of these systems left something to be desired and the ideal system was to be looked for in a proper combination of both. But the amount and kind of physical exercise which was proper for one child might be either excessive for another or inadequate for a third, and only by medical inspection could physical exercise be adapted to the needs of each child. One of the most difficult, and yet one of the most important, questions of school hygiene was how to combine educational work with physical training, so that both should be productive of benefit and not of injury to the child. Proper alternation of mental and physical exercise was one means of preventing this, but attention must also be paid to the nature of the physical exercise. The movements of drill at the word of command and the performance of new and unaccustomed muscular actions involved considerable mental, as well as bodily, fatigue, and must not be looked upon as relaxation. Marching or dancing to music after the steps had already been learned, and regular play, such as games of ball, tended, on the contrary, to remove mental fatigue and to develop the body. Shooting with rifles properly adapted to their size and strength was an exercise which tended to bring out many of the best qualities of boys. If boys were trained to shoot, many of them would, he thought, when they left school join the ranks of the Volunteers instead of becoming hooligans. The increased exercise which physical training entailed necessitated more food and the question of how best to feed children in school without interfering with parental responsibility was one which, they trusted, might be elucidated at the Congress. But all attempts to develop a healthy race would be ineffectual if they took care only of the children who were at school now. They must look a generation ahead and consider that the children who were at school now 15 or 20 years hence would be the fathers and mothers of a fresh set of school children. It was, therefore, of the utmost importance that boys and girls should be instructed in the laws of health, the need of cleanliness, the dangers of impure food or water, and the evils of alcoholic abuse. Such instruction should not be given by lectures, which were likely to be misunderstood or forgotten, but by actual demonstration. The assembly of so many experts from all parts of the world would almost certainly enable the Congress to give an authoritative opinion upon the most important questions of school hygiene, so authoritative that it could hardly be disregarded either by corporations in towns or by governments of countries. It was true that the proper carrying out of a system of school hygiene would involve expenditure, yet this would be amply repaid in the greater health and greater working power of the community. Sir Lauder Brunton concluded his speech by referring to the great loss that the cause of school hygiene had sustained in the deaths of Professor Hermann Cohen, who lectured at the first International Congress at Nuremberg, and of Dr. Paul Schubert, who was the honorary general secretary of that Congress; he recounted some of the work that these two men had done on behalf of the health of the children.

Votes of thanks to Sir Lauder Brunton and Lord Crewe brought the meeting to a close. A telegram was despatched to the King expressing its grateful thanks for his interest, to which Sir Lauder Brunton subsequently received a reply.

### *A Bird's-eye View of the Work in the Sections.*

In the section on the Physiology and Psychology of Educational Methods and Work Dr. T. S. **CLOUSTON** (Edinburgh) read a paper on the Hygiene of Mind in Education. He considered that hygiene was a means to strengthen the defences of the body and that teachers should know the correlation of mind and body and education should be regarded as mental hygienics. Professor **TAAV LAITNEN** (Helsingfors) described the Methods of Temperance Teaching in Finland and said that quite lately the Government had advised instruction in the laws of temperance as part of a child's general education. Dr. **DAVID SOMMERVILLE** (London) communicated a paper on Education in Hygiene for Teachers, in which he contended that education was the adjustment during its plastic period of the organism to its environment.

The Medical and Hygienic Inspection of Schools formed a section by itself and Dr. G. ANSCHUTZ (Buenos Ayres) showed how Argentina had put public schools under medical inspection and insisted on proper buildings, baths, cleanliness, and vaccination, with segregation of defective children and country schools for debilitated scholars. Dr. A. S. ARKLE (Liverpool) communicated a paper on the Physique of Elementary School Children in Liverpool, and Dr. JANET CAMPBELL gave details of the medical supervision of the London County Council secondary schools. Dr. J. J. CRONIN (New York), in a paper on Medical Treatment at School in its Social, Economic, and Professional Aspects, urged that medical treatment at school could be justified not only by results but also on the grounds of economic gain. Dr. A. C. E. GRAY (London) in a communication on Medical Treatment at School and its Relation to the Family Doctor, said that it was necessary to procure the coöperation of the parents. Dr. J. A. HAYWARD (Wimbledon) gave his views on the coöperation of doctor, teacher, and nurse in school inspection. Dr. FRANCES IVENS stated the results of an examination of 1000 children in relation to ear disease in East London school children. Dr. G. JÖRNELL (Sweden) explained how secondary schools in Sweden had medical inspectors with well-defined duties. Dr. H. M. RICHARDS (Croydon) described the organised medical supervision of school children as carried out at Croydon and Dr. S. THIERSCH detailed the method of examining children on admission to the public school in Leipsic.

In the section on Instruction in Hygiene for Teachers and Scholars Professor R. CATON (Liverpool) took up the question of the teaching of hygiene in primary schools and pointed out how the object-lessons too often witnessed by the children of the results of alcoholism might be turned to good if they were taught the physiological effect of alcohol upon the animal body. Professor C. C. DOUGLAS (Glasgow) showed how the practical training of teachers in school hygiene should be cut down to the consideration of the effects of school-life on the child. Dr. H. R. KENWOOD (London) in a paper on Hygiene as a School Subject in Elementary Schools, contended that it was unnecessary to teach the mechanism of respiration in order to inculcate the value of fresh air. He advocated the simplest hygienic training Dr. A. BROWN RITCHIE (Manchester) said that in Manchester the knowledge of hygiene acquired by the teachers was already bearing fruit.—Dr. C. E. SHELLY (Haileybury) contributed a paper on the Teaching of Hygiene in Secondary Schools.

Dr. H. L. P. HULBERT (Manchester) in the section on Out-of-School Hygiene gave some interesting facts concerning the Manchester country school for town children. In the section on Special Schools for Feeble-minded and Exceptional Children Dr. MAY DICKINSON BERRY read a paper on the Family History and Home Surroundings of Children in the London Centres for the Mentally Helpless, and Dr. R. C. ELMSLIE contributed a communication on the Classes of Physically Defective Children for whom Instruction in Special Schools is Necessary. Dr. P. HERTZ (Copenhagen) described the conditions of health of the backward children in the elementary schools of Copenhagen, and Mr. E. MUIRHEAD LITTLE read a paper on a Hospital School for Cripples. Dr. G. E. SHUTTLEWORTH dealt with the Differentiation of Mentally Deficient Children and Dr. ALAN McDOUGALL (Alderley Edge) discussed the Treatment of Children in Epileptic Schools.

In the section dealing with Special Schools for Blind, Deaf, and Dumb Children Dr. A. BRONNER (Bradford) read a paper on the Definition of Blindness in Children, its Causes and Prevention. Mr. N. BISHOP HARMAN (London) communicated his views on the Medical Characteristics associated with Blindness of Varying Causation and their relation to Training.

In the section on Hygiene of Residential Schools Dr. EDMUND CAUTLEY (London) discussed the question of diet in residential schools and commented on the importance to be attached to the refusal of food as a sign of illness or that the diet was unsatisfactory. In the section on the School Building and its Equipment Dr. J. HAMMAR (Stockholm) gave a short account of investigations in the school hygiene of the board schools of Stockholm and Dr. C. PORTER (Leeds), in a paper on sanitary appliances for schools, formulated his objections to troughs and described the wash-down closets in the West Leeds high school. An interesting communication was received from Dr. T. WOOD (Leith) on the characteristics of the ideal desk for children.

Sir Shirley F. Murphy was retained in the House of Commons and so was unable to be present in time to deliver his opening remarks on the work of the Seventh Section. A paper was read for him by Dr. H. T. BULSTRODE, who also presided over the section, in which Sir Shirley Murphy set forth

*The Intimate Relations between Infectious Disease in the Schools and among the Population at Large.*

He said that in striving to check the latter information gathered in the schools would be most useful. For this and other reasons the same authority should have in hand both services. From 1892–97 some 15,000 children lost their lives from diphtheria in the London schools and he thought better measures would have been taken if there had been but one instead of two administrations at work. School attendance concerned the general health, for it meant an increase of infectious disease. Thus the statistics of the ten years 1895–1904 showed that there were more scarlet fever and diphtheria in London during the months when the schools were open. The figures given were 27·6 per cent. less scarlet fever and 23·3 per cent. less diphtheria during the holiday season, as compared to the two months before and after the holidays. The principal cause of the spread of disease was the mild and unsuspected "carrier" cases as they were called. It was the teachers rather than the medical inspectors who could detect such cases. Still, it did not seem that many children in London suffered from scarlet fever—only 68·8 per 1000 children who had reached the age of ten years in 1906. This apparently indicated that many cases were not notified, perhaps not even detected. In regard to tuberculosis Sir Shirley Murphy said: "If I may hazard a conjecture as to the trend of evidence concerning the conditions which cause this disease, I might say that infection by ingestion must increasingly be regarded as the largest factor in tuberculosis." In conclusion, he urged that the health of the population at all ages depended on the efficacy of school inspection. "Attendance at schools gives opportunity for the health officer to concern himself with the personal hygiene of a considerable section of the community, and further, to control, at any rate in some degree, the prevalence in the total population of the class of maladies which come under the cognisance of this section."

Dr. JAMES NIVEN, medical officer of health of Manchester, read the next paper. He dealt with diphtheria in schools and gave figures to show that from 1901–05 the diminution of the death-rate at school ages was less than at other ages. The incidence of diphtheria had been so altered as to fall more than formerly on children at the school age. This did not mean that the total number of cases at all ages had increased. It is true that there were fewer cases known to occur at holiday times but there was then more healthy outdoor exercise and also a greater temptation to conceal cases so as not to spoil the holidays. The larger number of cases of diphtheria occurred among children three and four years old, that is to say, before the school age, but they were in constant contact with older children who frequented schools. Then there was a great decrease at the age of six years, due perhaps to widespread establishment of immunity. In Manchester in 1906, out of 109,765 school children giving an average attendance of 90 per cent. there were only 177 cases of diphtheria. There were occasional "flare ups" in school because a child showing no clinical symptoms would produce copious discharges rich in diphtheria bacilli. It was remarkable that the poorest districts were not the greatest sufferers. In North Manchester the death-rate from diphtheria was two or three times as great as in the Manchester township, yet the latter possessed the poorest schools. The outbreaks seemed to depend on the aggregation of children not yet immunised rather than on sanitary or economic conditions. In the poorer quarters a low type of bacilli seemed to confer immunity. The "short" or "suspicious" bacillus was frequently a true diphtheria bacillus and Dr. Niven maintained that "the facts seem to point to a widespread production of immunity, especially in the poorest districts, through bacilli of comparatively low virulence." On the other hand, they often had true diphtheria where the bacillus had not been found, therefore clinical diagnosis still remained necessary. But to provide all these services a very large staff was required, such as had been provided by the public health authority of New York. Convalescent children should be sent to the country apart from the question of infection, but because they were weak. He agreed that the assistance of teachers was most necessary; they alone could detect when a child was getting weak and teachers should be trained so as to second the efforts of the school medical inspector. All these services would necessitate a considerable increase to the medical staff under the medical officers of health.

Dr. T. H. C. STEVENSON (London) read a paper on Scarlet Fever Prevalence among School Children in London. He had calculated that by the time children reached the age of 14 years 14·5 per cent. had suffered from scarlet fever, and there were also unrecognised cases. This was a small figure considering that in a place like London all must be occasionally exposed to the risk of infection. He thought the primary case infected others in a day or two. Statistics proved that there were fewer secondary cases where there had been prompt removal of the first patient. A case that passed unobserved had, he calculated, sixty times more opportunity for spreading the disease than one which was at once detected and removed. The great difficulty was in regard to the unrecognised cases.

Dr. HENRY ZAHOR (Prague, Bohemia) read a paper showing that from the age of five to ten years there had been a great increase of cases of chicken-pox and scarlet fever in the primary schools of Prague. The prevalence of diphtheria had decreased in consequence of the general use of anti-diphtheritic serum. Measles was very prevalent and spread rapidly at the commencement of the school year. This was due to the indolence of the parents who let children go to school while in an infectious condition. Though measles, scarlet fever, and chicken-pox were now more and more prevalent the proportion of fatal cases had decreased. Small-pox simply did not exist at all and typhoid fever had decreased in consequence of improved drainage. He concluded by urging that there must be compulsory notification and isolation and that all "contacts" must be carefully examined and watched. In regard to tuberculosis, he found a great increase in the number of cases from five to ten years of age.

The CHAIRMAN now declared the meeting open to a general discussion on the papers that had been read.

Dr. J. O. SYMES related that in the neighbourhood of Bristol the attempt during an epidemic to swab the throats of all persons exposed to any risk and to submit the result to bacteriological examination led to such an outlay as very soon to stop the practice. The bacteriologist received 2*s.* 6*d.* per swab. At Manchester those who collected the swab also got 2*s.* 6*d.* each. 2*s.* 6*d.* per family, it was urged, should suffice and there was a danger of preventing proper precautions by exaggerated expense. It should suffice to examine only really suspicious cases. But it was difficult to tell at once, and suspicious cases had been sent to the hospital where they contracted the true disease. He did not think the report "short variety" of diphtheria bacillus sufficient evidence of a real case.

Dr. P. BOOBBYER, medical officer of health of Nottingham, said he had only 250 cases of diphtheria per 100,000 of the population. Certain districts suffered less, but he did not think that this was due to any form of immunity. Certainly he had a very poor district where there were but few cases. He thought that the swabbing of throats was very useful. Thus, as an instance, among 1000 children there had occurred 20 cases of diphtheria. He then had all the 1000 children examined and the result was that of the swabs taken from them ten contained the bacillus. The ten children were at once removed and the spread of diphtheria was there and then stopped. Again, at the Nottingham General Hospital diphtheria attacked patients and the staff. He therefore had swabs applied to every throat of both patients and attendants. As a consequence 34 persons were found to be affected and had to be removed, but the epidemic at the hospital was stopped at once.

Dr. A. K. CHALMERS, medical officer of health of Glasgow, said that all practitioners were invited to send swabs, if possible, of all persons in a tenement house where a case of diphtheria had occurred. If there was any immunity in very poor districts it was because there was more sanitary surveillance exercised in such quarters. At Glasgow the practitioners did not make any charge for sending swabs to be tested.

Dr. WILLIAM BUTLER (Willesden) said that he had two poor districts, a new and an old district, and it was the new district which suffered most from diphtheria. He found that under the pretext of ventilating sewers, sewer airs were discharged under bedroom windows, and he thought that there was a relation between sewer airs and the prevalence of diphtheria. He concluded that clinical evidence was as necessary as bacteriological evidence and that negative evidence was not conclusive. There might be the bacillus in the throat of a person apparently in good health and none in the case of a person who was obviously ill.

Dr. F. J. POYNTON (London) summarised a paper which he presented on ill-health and school attendance. He urged that much more attention should be given to cases of rheumatism. These were often neglected or attributed to growing pains. They led to weakening of the heart and, unless the child had the necessary rest, to irremediable heart disease. There were cases of brain rheumatism or chorea that were put down to naughtiness or idleness. Many children not naturally robust became pale, languid, irritable and highly nervous. No actual disease was discovered. With the rich such children were sent to some bracing health resort. With the poor they remained at school to develop serious constitutional diseases.—Dr. J. JOHNSTONE WEIR (Jarrow) applauded the above paper, insisting that it could not be too loudly proclaimed that there was no such thing as growing pains: it was rheumatism.—Dr. BOOBBYER, Dr. S. DAVIES (Woolwich), and other speakers all agreed as to the great need of more careful watch over cases of rheumatism, and then Dr. NIVEN replied, and insisted that old districts had bacilli of a low type of virulence which immunised the populations without producing virulent cases.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, August 8th, 1829.

### FOREIGN DEPARTMENT.

#### NEW METHOD OF ARRESTING HÆMORRHAGE.[1]

AT the meeting of the Académie Royale de Médecine, on the 16th of July, M. Amussat communicated the details of his new method of arresting hæmorrhage from large blood-vessels without the aid of ligature, compression, or any other expedient hitherto employed. His plan is originally founded on the common observation, that lacerated and contused wounds are but seldom attended with hæmorrhage, which M. Amussat conceived, could not be accounted for but by some peculiar change, both of form and vital properties, which the vessels undergo in such lesions. He accordingly began a series of experiments, in which he tried to obtain the same results, and eventually found that the laceration, contusion, &c., of large vessels, in most cases, produces only a momentary suspension of the hæmorrhage, but that it is permanently arrested by a methodical *contortion* of the bleeding vein or artery. According to his experiments, he proposed the following plan:—the vessel being seized with a small pair of forceps, the branches of which are firmly fixed by a strong screw, is extracted, so as to be denuded for about five or six lines, and after having been isolated as much as possible from the surrounding cellular tissue, is held between the fore finger and thumb of the left hand, whilst the forceps are twisted five or six times, according to the size of the vessel, until the portion between the teeth of the forceps is lacerated; the artery then spontaneously retracts, and is distinctly seen and felt to pulsate, though the hæmorrhage is completely arrested. On close examination of the vessel, it appears that the internal coat, being divided in the same manner as by a ligature, contracts and forms a sort of ring (*bourrelet*), by which the further exit of blood is obviated. It is of great importance to fix the extremity of the vessel between the fingers of the left hand, or else the contortion will be found to extend through the cellular tissue, as far as the next collateral branch.

---

[1] Only the first paragraph has been transcribed.

# VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8583 births and 3597 deaths were registered during the week ending August 3rd. The annual rate of mortality, which had been 12·3, 12·4, and 11·9 per 1000 in the three preceding weeks, further declined to 11·7 during the week under notice. During the first five weeks of the current quarter the death-rate in these towns averaged 12·2 per 1000, the rate in London during the same period being 11·9. The lowest death-rates in the 76 towns last week were 4·9 in York, 5·2 in Hornsey and in Reading, 6·7 in Tynemouth, and 6·8 in Burton-on-Trent; the highest rates were 15·8 in Oldham, 16·0 in Preston, 18·0 in St. Helens, and 19·4 in Sunderland. The 3597 deaths in the 76 towns last week showed a decline of 68 from the number in the previous week, and included 363 which were referred to the principal epidemic diseases, against 341, 397, and 396 in the three preceding weeks; of these, 113 resulted from measles, 86 from whooping-cough, 78 from diarrhœa, 36 from scarlet fever, 34 from diphtheria, and 16 from "fever" (principally enteric), but not one from small-pox. No death from any of these epidemic diseases was registered last week in Wolverhampton, Bury, Burnley, Huddersfield, Halifax, York, or in 13 other of the 76 towns; the annual rate from these diseases, however, ranged upwards to 2·3 in Sunderland and in St. Helens, 2·5 in Derby, 3·5 in Wigan, 4·4 in Cardiff, and 4·9 in Stockton-on-Tees. The fatal cases of measles, which had been 142 and 113 in the two preceding weeks, were again 113 last week, and caused death-rates ranging upwards to 1·2 in Walthamstow and in Blackburn, 1·7 in Derby, 2·0 in Stockton-on-Tees, 2·1 in Merthyr Tydfil, and 3·1 in Cardiff. The 86 deaths from whooping-cough were 37 below the number recorded in the preceding week; the highest death-rates from this disease were 1·1 in Oldham, 1·7 in St. Helens, and 2·0 in Stockton-on-Tees. The fatal cases of diarrhœa, which had increased from 39 to 73 in the three previous weeks, further rose to 76 last week, the highest death-rates being 1·0 in Birmingham and in Stockton-on-Tees, 1·1 in Walsall, and 1·8 in Wigan. Diphtheria caused a death-rate of 1·0 in Croydon. The mortality from scarlet fever or from "fever" showed no marked excess in any of the 76 large towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which in the 12 preceding weeks had risen from 2658 to 3586, had further increased to 3626 at the end of last week; 419 new cases were admitted during the week, against 493, 569, and 557 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 126 and 136 in the two preceding weeks, were 137 last week, and exceeded by 19 the corrected average number in the corresponding week of the five years 1902–06. The causes of 42, or 1·2 per cent., of the deaths registered in the 76 towns during last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Manchester, Salford, Oldham, Bradford, Hull, and in 49 other of the 76 towns; the highest proportions of uncertified deaths were recorded in Birmingham, Coventry, Liverpool, St. Helens, Rotherham, and Sunderland.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·9 and 13·6 per 1000 in the two preceding weeks, further declined to 12·8 during the week ending August 3rd, but exceeded by 1·1 per 1000 the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·0 in Leith and 11·2 in Edinburgh, to 13·9 in Greenock and 17·3 in Dundee. The 445 deaths in these towns showed a decline of 29 from the number in the preceding week, and included 60 which were referred to the principal epidemic diseases, against 60, 63, and 66 in the three previous weeks. These 60 deaths were equal to an annual rate of 1·7 per 1000, which exceeded by 0·4 per 1000 the mean rate during the same period from the principal epidemic diseases in the 76 large English towns; they included 21 which resulted from diarrhœa, 15 from "fever," 12 from whooping-cough, six from measles, four from diphtheria, two from scarlet fever, but not one from small-pox. The fatal cases of diarrhœa, which had been 19 and ten in the two preceding weeks, rose again to 21 last week, of which seven occurred in Glasgow, five in Dundee, and three in Edinburgh. The deaths referred to different forms of "fever," which had been 14 and 15 in the two preceding weeks, were again 15 last week, and included nine cases of cerebro-spinal meningitis in Glasgow, two in Leith, and one each in Edinburgh, Dundee, and Paisley. The fatal cases of whooping-cough, which had increased from 18 to 30 in the four preceding weeks, declined to 12 last week, of which eight occurred in Glasgow and two in Edinburgh. The six deaths referred to measles slightly exceeded the number in the previous week; four were recorded in Glasgow and two in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, which had declined from 88 to 63 in the three preceding weeks, rose again to 68 last week, and were seven in excess of the number recorded in the corresponding week of last year. The causes of nine, or 2·0 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 1·2 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 21·5 and 21·2 per 1000 in the two preceding weeks, further declined to 18·0 in the week ending August 3rd. During the past five weeks of the current quarter the Dublin death-rate has averaged 20·1 per 1000, the rate during the same period being only 11·9 in London and 13·8 in Edinburgh. The 135 deaths of Dublin residents registered during the week under notice showed a decline of 24 from the number in the previous week, and included 15 which were referred to the principal epidemic diseases, against five and 12 in the two preceding weeks; of these, six resulted from measles, four from whooping-cough, three from diarrhœa, two from diphtheria, but not any from small-pox, from scarlet fever, or from "fever." These 15 deaths were equal to an annual rate of 2·0 per 1000, the death-rate during the same week from the principal epidemic diseases being 1·3 in London and 1·4 in Edinburgh. The six fatal cases of measles showed an increase of three upon the number recorded in the preceding week. The deaths referred to diphtheria, which had been four in each of the two preceding weeks, were again four last week. The two fatal cases of scarlet fever exceeded the number recorded in any week since April last. The 135 deaths from all causes in Dublin last week included 17 of infants under one year of age and 27 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were below those recorded in any preceding week of the current year. Five inquest cases and three deaths from violence were registered; and 57, or more than 42 per cent., of the deaths occurred in public institutions. The causes of five, or 3·7 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths in London was 0·3 and in Edinburgh 4·1. The 115 deaths in Belfast included seven which were referred to cerebro-spinal fever.

# THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE undermentioned Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Edward Francis Power (dated Nov. 10th, 1904), Edwin Folliott (dated May 25th, 1905), George Ernest Macleod (dated Nov. 29th, 1905), and James Aquilon Forrest and Henry William Melville Rees (dated Nov. 8th, 1906).

The following appointments are notified:—Staff Surgeon C. H. Rock to the *Hampshire;* Surgeons: L. M. Morris to the *Hampshire;* and L. C. Rowan-Robinson to the *Impregnable.* Civil Practitioner G. C. March Surgeon and Agent at Langton and Abbotsbury.

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors are placed on retired pay (dated July 27th, 1907): George F. Alexander, John Paterson, and Vesey H. W. Davoren. Major Arthur B. Hinde retires on retired pay (dated August 7th, 1907). Major S. Macdonald has been appointed to Hong-Kong.

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major Thomas McC. Foley to be Surgeon-Lieutenant-Colonel (dated July 20th, 1907).

### A DISTINGUISHED NAVAL MEDICAL OFFICER.

Inspector-General James Porter, R.N., C.B., who presided over the Navy, Army, and Ambulance Section at the Exeter meeting of the British Medical Association, joined the medical department of the navy in 1877, was surgeon of H.M.S. *Orontes* during the Egyptian war, 1882 (Egyptian Medal, Khedive's Bronze Star); served on shore with the Royal Marine Battalion defending Suakin from May, 1884, till the actions at Hasheen, March 20th, 1885; attack on Sir J. McNeil's zareba, Tulufik, March 22nd; the attack on the square of Guards and Marines, March 24th; and at the taking and burning of Tamaai, April 3rd (Suakin, 1885, To Frek clasps). He landed from H.M.S. *Doris* during the Boer war, 1899, 1900, and was in medical charge between Oct. 20th, 1899, and Oct. 12th, 1900, of the naval forces employed on shore: (1) in defence of Stormberg; (2) in Lord Methuen's advance from Belmont to Magersfontein; (3) in Lord Roberts's advance from Enslin to Belfast, *viâ* Klip Drift, Paardeberg, Pretoria, &c.; (4) with General French's column from Belfast to Barberton, *viâ* Carolina; medal with eight clasps, inscribed "Belmont, Modder River, Relief of Kimberley, Paardeberg, Driefontein, Johannesburg, Diamond Hill, Belfast"; present at Graspan (with the assault); Magersfontein, Poplar Grove, capture of Pretoria; twice mentioned in despatches; promoted to Deputy Inspector of Hospitals Oct. 21st, 1900, for above services; C.B. June 26th, 1902; as Deputy Inspector was in charge of naval medical establishments at Chatham and Gibraltar. Promoted to Inspector-General, his numerous friends and the service generally were pleased to note that he has been recently selected as Inspector-General of Haslar, one of the largest general hospitals in the world, to which the Naval Medical School and training of the sick berth staff are attached.

# Correspondence.

"Audi alteram partem."

## THE ACOUSTIC LIMITATIONS OF THE BINAURAL STETHOSCOPE.

*To the Editors of* THE LANCET.

SIRS,—With reference to your interesting account from the *New York Medical Journal* of "the acoustic limitations of the binaural stethoscope" I should like again, as I have often done in the clinical wards, to draw attention to the inadequateness of the double (flexible) stethoscope in the appreciation of aortic shock sounds, impulses, and of cardiac force. Shock sounds and impulses quite impalpable can be appreciated by the unaided ear, and better through the medium of the rigid stethoscope, that would be entirely missed with the flexible instrument, and I have known cases of sacculated aneurysm thus to escape diagnosis. I have also frequently observed the binaural auscultator to mistake conducted oral breath sounds for morbid pulmonary sounds. It would be easy for a mischievous expert to play tricks with a binaural auscultator which he could not do with one who had an ear disengaged for the appreciation of extrinsic sounds. Undoubtedly the binaural or flexible stethoscope has many conveniences and some advantages, and direct auscultation is neither cleanly nor always decent; the important matter is for each physician to depend upon the instrument whether rigid or flexible to which he is most accustomed in order that he may preserve that sense of comparison upon which so much depends in auscultation; but everyone should also possess and use on occasion the rigid stethoscope for the reasons above specified amongst others.

I am, Sirs, yours faithfully,

Wimpole-street, August 3rd, 1907. R. DOUGLAS POWELL.

## EARLY NOTIFICATION OF BIRTHS.

*To the Editors of* THE LANCET.

SIRS,—I have been surprised to notice that there seems to be a certain amount of hostility to a measure which has been brought before Parliament for the purpose of making a first step towards lessening the present needlessly high infantile mortality rate. This measure is the Early Notification of Births Bill introduced by Lord Robert Cecil, Mr. Sherwell, the Right Hon. A. Lyttelton, and others. It will probably be known to most of your readers what the purport of this Bill is, but its whole effect may be summed up in a sentence. The Bill provides for the notification to the health authority of a borough or district of every birth within 36 hours of its occurrence, such notice to be given by the father if resident in the house at the time or, failing him, by any person in attendance on the mother. As amended in committee of the House of Commons this is made an adoptive measure applicable only at the request of a local authority and subject to the local authority satisfying the Local Government Board that they are able to administer the measure in a satisfactory manner. There is no fee payable on either side. It may, perhaps, be interesting to note here that in France, where the registration has to be made within 72 hours, the father has to appear in person before the official and make a declaration in the presence of two witnesses and, moreover, pays a fee of 2 fr. 50 c. for the privilege.

I learn with surprise that this measure has aroused the protest of certain members of the medical profession because of the possible inclusion of the members of the profession under the head of "person in attendance." It is exceedingly probable that the clause could not possibly apply to the profession in more than 30 per cent. of births, seeing that this is the outside percentage where a medical man is present. But even of this 30 per cent. it is not likely that the father would be freed from the liability to notify in more than a very small number of cases, so that the risk of the medical man being liable to notify as the "person in attendance" is really whittled down to an almost infinitesimal risk: probably not in more than 1 per cent. of the total number of births would any obligation fall upon the medical man. For a very small risk it seems that the profession wishes to block the progress of this beneficial measure. The early notification of births seems obviously the first step towards combating infantile mortality. Every authority on the subject is absolutely agreed upon this point. If you are to try to save the lives of infants it is necessary to know that they are in being. It is the first thing that the practical administrator of public health finds that he needs. It has been asserted that early notification is a fad. Nothing could possibly be further from the truth. It is the first necessary step and all the really practical men are unanimous in favour of it; no faddist has ever come near it except to hint at dislike of anything so intensely practical.

For a layman and for a practical administrator of public health, such as I claim to be, it is quite impossible to understand what objection can possibly be taken to this measure by anyone. Whom does it injure or threaten to injure? Whose work does it interfere with or take away? Whose emoluments does it affect? Whose status or dignity does it infringe upon? The only people that I can conceive of thinking that they are affected at all would be those connected with the Registrar-General's department; but the heads of that department are in most complete sympathy with the Bill and its objects. But that medical men should object to such a measure seems to me a contradiction, an outrage upon the nature of things, and I cannot even come at a beginning of the clue to the objection to it. Yet it is the opposition of a medical man, representing the opinion of medical men, that has blocked this Bill and endangers its passing. I have no hesitation in saying quite bluntly that on the passing or not passing of this Bill depend the life and health of scores of little helpless babies. They are very small and helpless, but after all it is murder to kill them, and merely to let them die is not free from some blame. I know that we have saved life and promoted health in Huddersfield by our efforts, and the key of the whole position is the early notification of births to the health office.

I yield to no one in my profound respect and admiration for the medical profession. I owe my own life and health to its skill and care. It is the proudest of my possessions that I was akin to Sir William Broadbent, so that it is in no spirit of criticism or of fault-finding that I write but simply because I am bewildered and perplexed by an attitude which seems to me to be opposed to all that I have learnt to admire in a great profession.

I am, Sirs, yours respectfully,
Huddersfield, July 30th, 1907. BENJAMIN BROADBENT.

## EXPERIMENTS ON PROLONGED PROTEIN FEEDING.

*To the Editors of* THE LANCET.

SIRS,—The object of my letter in your issue of July 27th was to indicate to your readers that, since the conditions of Dr. Forsyth's experiments differed from mine in two fundamental particulars, a direct comparison of the results was out of the question. The letter published by Dr. Forsyth in THE LANCET of August 3rd prompts me to ask your permission to supplement the statements in my former letter by briefly summarising the present state of our knowledge of the influence of diet on the thyroid gland.

In the course of an experimental investigation into the nature of avian gout I incidentally observed that the administration of an exclusive meat diet to normal fowls induced a striking hypertrophy of the thyroid and parathyroid glands, with excess of colloid in the former gland. This observation appeared to indicate that diet modified the structure and function of the thyroid gland, a fact which had not, so far as I am aware, been previously ascertained. A repetition of the same experiments, using other animals, gave results which confirmed, and at the same time amplified, those previously obtained. Independent confirmation of my main conclusions has been furnished by Dr. A. Dingwall Fordyce in a paper published in the *British Medical Journal* and further evidence in the same direction was submitted by me to a recent meeting of the Physiological Society. Dr. Forsyth has shown in his recently published observations that an excessive protein dietary administered under conditions essentially different from those obtaining in my experiments induces a modification in the histological appearances of the pituitary gland, the change taking the form of excess of colloid, a point of much interest in the light of my earlier observations. The facts so far ascertained give promise that further investigations may yield results of much importance in human dietetics. In his letter Dr. Forsyth asks a question regarding the recognition of pathological appearances in the thyroid gland. This point will be dealt with more appropriately in a further communication on the subject which will shortly be published. I am, Sirs, yours faithfully,
Edinburgh, August 4th, 1907. CHALMERS WATSON.

## THE CORNEAL REFLEX IN ANÆSTHESIA.

*To the Editors of* THE LANCET.

SIRS,—My own experience of chloroform anæsthesia has led me to regard the corneal reflex as of little value as a guide to the measure of anæsthesia. The beginner always seems to attach special value to it, and if permitted worries at the cornea as though it were an electric bell-push until in self-defence (?) it refuses to respond. Apart from the mechanical injury which may be inflicted by the finger I have known corneal ulcers of extensive character produced by the chloroformist allowing his finger to become moistened with chloroform and then applying it all unconsciously to the patient's conjunctiva.

In teaching students I invariably warn them against overestimation of the value of the corneal reflex and urge them to dispense with the use of it as far as possible. Surely with automatic respiration, muscular relaxation, *and* a contracted pupil we may be content to leave the cornea alone for the most part. Mr. Richard Gill well says "the contracted pupil is the measure of the lowest degree of anæsthesia" (and by this he means, I think, *workable surgical anæsthesia*). In some cases where one requires to induce a very *profound* anæsthesia I push the $CHCl_3$ until the pupil has lost its mobility, contracted down to around 2·5 millimetres, and begun to dilate again. With students I suggest their using a sluggishly mobile contracted pupil as their standard—that is to say, if the lids be closed for a moment and then sharply withdrawn the pupil *slowly* contracts, on the stimulus of light, say, from 3·5 millimetres to 2·5. Of course, with the pupil there are fallacies, and we cannot always rely on it. One morning I got a patient with the Argyll-Robertson phenomenon and next a patient with a pinhole morphia pupil. But I venture to think we can place more reliance generally on the pupil and its behaviour during chloroform anæsthesia than on the conjunctival or corneal reflex. To-day, for instance, I gave an old lady of 77 chloroform, and she was still phonating and certainly not in a state of surgical anæsthesia when the corneal reflex in both eyes had disappeared. And I believe my good friend Mr. H. Bellamy Gardner will admit I probably elicited it "*secundum artem*"!

I am, Sirs, yours faithfully,
Edinburgh, July 29th, 1907. THOMAS D. LUKE.

## A PLEA FOR UNIFORMITY IN THE NOMENCLATURE OF ALKALOIDS AND THEIR DERIVATIVES.

*To the Editors of* THE LANCET.

SIRS,—Some years ago it was the custom in Britain to make all alkaloids and their derivatives end in *ine*, while glucosides, resins, and principles not alkaloidal were made to end in *in*. Now all is hopelessly mixed up, just as one finds in German literature. If the Germans send us over a new derivative of an old alkaloid editors, chemists, physiologists, and pharmacologists (not to speak of the poor despised clinician) seem to adhere to the ending which our Teuton friends give it. To take a few examples. In the same sentence I find encaine and cocain (both alkaloids), and heroin and dionine, two morphine derivatives which came to us from Stockman and Dott, but which were neglected till an enterprising German firm took them up. The more or less pure ergot alkaloids are written cornutin-Keller, cornutine-Kobert, chrysotoxin, secalintoxin, sphacelotoxin, ergotoxine, hydroergotinin. I could go on multiplying examples but it is needless. It would be much simpler if investigators adhered to the old rule, so that when one came across a new preparation ending in *ine* we might conclude it was alkaloidal in nature.

I am, Sirs, yours faithfully,
Leeds, August 5th, 1907. GORDON SHARP.

## HOW TO LEARN ESPERANTO.

*To the Editors of* THE LANCET.

SIRS,—Please allow me further space that I may answer inquiries which have reached me arising out of my letter in THE LANCET of August 3rd. Esperanto is, of course, best learned from a teacher, either orally or by correspondence. Ample particulars will be found in the current number of the *British Esperantist* (monthly 3*d*.). But anyone can easily teach himself. I would advise a beginner to get the *Whole of Esperanto for a Penny* and Grabowski's *Kondukanto* (2*s*.). The former will give him the grammar and vocabulary; the latter provides easy and most interesting reading. Having mastered these he should make Dr. Zamenhof his teacher. The *Ekzercaro* should be worked through, as given in Bullen's *Standard Course of Esperanto* (7*d*). Then the *Fundamenta Krestomatio* (cloth 4*s*. 6*d*.) should be read and re-read; it is the classic and the ultimate court of appeal in Esperanto, besides being excellent reading. Lastly, Major-General Cox's *Grammar and Commentary* (2*s*. 9*d*.) will be found illuminative.

Every learner will find it well worth his while to pass the British Esperanto Association examinations. Conversation should be practised on every opportunity: a list of groups, with addresses, can be found in the *British Esperantist*. All the foregoing and other Esperanto publications, as well as further information, may be obtained from the secretary, British Esperanto Association, 13, Arundel-street, Strand, W.C. I am, Sirs, yours faithfully,
Kilburn, N.W., August 5th, 1907. W. WINSLOW HALL.

## STATISTICS IN MEDICINE.

*To the Editors of* THE LANCET.

SIRS,—A considerable part of Dr. W. Hale White's admirable address, on which you commented at length last week, was devoted to demonstrating the inaccuracy that is too often displayed in the use of statistics, more especially when they are employed as special pleaders for a new cause. I commend this passage to the very careful study of all who employ such figures, for in truth it is too often forgotten that statistics form a science with unalterable rules and limitations; too often are the most intricate problems treated by medical men in the same light and heedless manner as is, let us say, the "fiscal question" settled in a few dogmatic pronouncements by the Briton who rejoices in his sound common-sense but is blissfully oblivious of the existence of a science of political economy that can have any bearing on so simple a matter.

Dr. Hale White made appreciative reference to the study of statistics as the latest of the bevy of ancillary sciences that medicine has summoned to her aid, and he could hardly have adduced a better instance of the application of accurate knowledge to medicine than the employment of those advanced mathematical methods which Professor Karl Pearson and other distinguished mathematicians have placed at her disposal: the biometrical method would seem to offer a more promising weapon to attack the mysteries of heredity than any that clinical medicine has yet brought forward.

I am, Sirs, yours faithfully,

COCKER.

August 6th, 1907.

## JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

*To the Editors of* THE LANCET.

SIRS,—I have a small grumble to make. Nothing could be better than the production of the journal of the Royal Army Medical Corps. To the bibliopegist magazines as a rule leave much to be desired, but here he meets with a near approach to absolute perfection. The admirably printed pages lie open of their own accord; no need to bend back or even to flatten out, and yet they are firmly fixed and the roughest use leaves them undetached. Nor are the contents unworthy of their setting. It is true that leading articles and editorials seldom or never appear, but every communication has a *raison d'être;* the author has something to say and says, or is made to say, it with becoming brevity. Padding is rarely perceptible—a remarkable thing in a journal of close upon 150 pages. The contributors are all officers of the corps and their contributions, which emanate from all parts of the world, are full of information and interest. Until their journal came to life they had difficulty in recording their observations in a permanent form and many valuable statements and comments have no doubt been lost to science. As an incentive to professional zeal the journal of the Royal Army Medical Corps most effectively supplies a long-felt want. Amidst all this excellence there is, however, one defect: the price of a copy is 2*s.* net. The organisers must, of course, be allowed to know their own business best, but these are the days of cheapness and large circulations can only be secured by small prices. To secure a *clientèle* among the civilian practitioners of the empire, should this be desired, the charge must be reduced.

I am, Sirs, yours faithfully,

G.

August 3rd, 1907.

⁎⁎ The excellence of production noticed by our correspondent of course regulates the high price.—ED. L.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

### *The Leeds and West Riding Medico-Chirurgical Society.*

FROM the annual report of this society, which has been recently circulated amongst its members and which was adopted at the annual meeting held in May, it appears that the work has been carried on in the same way as in recent years. During the session 11 meetings—eight ordinary, one pathological, and two clinical—have been held and the average attendance of members was 79. The society now numbers 358 members, 38 ordinary members having joined during the session of 1906-07. The meetings of the society are held on certain Friday evenings from October to May and as its members come from all parts of the West Riding and, indeed, from beyond its limits, these meetings are much valued not only for their scientific importance but as a means of medical men meeting and keeping up friendships and acquaintances which otherwise might fall into abeyance. The library of the society and that of the medical faculty of the University are amalgamated and under the direction of one honorary librarian who represents both bodies. The library and reading-room, which are in the buildings of the medical school adjoining the infirmary, where the meetings are held, are open to all members of the society, and the librarian is authorised under an arrangement to forward books to country members.

### *The West Riding Rivers Board and Disposal of Leeds Sewage.*

On March 2nd of this year it was mentioned in this column that in consequence of the poll of citizens being unfavourable to the undertaking of the scheme of the city council for the purchase of 1000 acres of land on the Temple Newsom estate for the purposes of sewage disposal, the West Riding Rivers Board had decided to take legal proceedings against the corporation under Section 7 of its Act. The case came on at the Assizes before Mr. Justice Grantham. On behalf of the corporation Mr. E. Tindal Atkinson, K.C., admitted the offence but explained the great difficulties the city had had to contend with. Ultimately, after a consultation between counsel, a form of order was submitted to his lordship with the approval of both parties. Mr. Justice Grantham then made the order from which we take the following paragraphs:—

> And it is ordered that the defendants do abstain from the further commission of the said offence, but that this part of the order be suspended for 12 months.
>
> And it is further ordered that the defendants do forthwith commence and diligently proceed to carry out the necessary works to enable them to treat and deal with the whole of the dry-weather flow of liquid sewage matter falling or flowing or being carried into the River Aire through the sewers and sewage disposal works of the defendants situate at Knostrop, and after the said works have been completed to treat and deal with the whole of the said dry-weather flow, so that the suspended solids in the effluent of the dry-weather flow discharged into the river shall not at any time hereafter, except from unavoidable causes, exceed 11 parts in every 100,000 parts. Provided that after the said works have been completed no penalties shall be incurred by the defendants in respect of any pollution until three samples of the effluent of the dry-weather flow have been obtained on three different days, each of which shows the suspended solids to be in excess of the proportions hereinbefore mentioned.
>
> And that the defendants do apply to Parliament and use their best endeavour to obtain in the next ensuing session of Parliament an Act to empower them to acquire all necessary lands and carry out and complete all necessary works for the efficient purification of all sewage matter falling, or flowing, or being carried into the said River Aire, or to prevent it from so falling, or flowing, or being carried as aforesaid.

### *New Professorships at the University.*

Following on the resignation of Professor Miall, who has been responsible for the teaching of biology in Leeds almost since the initiation of the Yorkshire College in Leeds upwards of 30 years ago, the council of the University decided to institute two new professorships, one of zoology and the other of botany. To the professorship of zoology the council has appointed Dr. Walter Garstang. Professor Garstang is an M.A. and D.Sc. of Oxford and has been lecturer and examiner in his own university. He has lately filled the position of chief naturalist to the Marine Biological Association. Dr. Blackman, who is a graduate of Cambridge and for some time a Fellow of St. John's, has been appointed Professor of Botany. He has done a considerable amount of work on fungi.

August 6th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Dr. James Finlayson Memorial Lectures.*

AT a meeting of friends of the late Dr. James Finlayson held shortly after his death in the hall of the Faculty of Physicians and Surgeons, Glasgow, it was resolved to commemorate his life, professional services, and learning by the institution of a lectureship. The committee has invited Dr. Norman Moore of St. Bartholomew's Hospital to be its first lecturer and he has undertaken to give the lecture probably about the beginning of next February. The exact date and subject of the lecture will be announced in due course. The subscription list which was opened in order to obtain money to found the lectureship is not yet closed.

### *Appointment to the Western Infirmary, Glasgow.*

At a meeting of the board of managers held last week Dr. John M. Munro Kerr was appointed physician for diseases of women at the Western Infirmary in room of Dr. W. L. Reid who has retired from that position.

### *Graduation Ceremony at Glasgow University.*

The summer graduation in medicine took place last week when the degree M.B., Ch.B., was conferred by Principal MacAlister on 95 graduates, four receiving the degree with honours and 13 with commendation. At the close of the ceremony the Principal conveyed the congratulations of the Faculty of Medicine to Sir Thomas McCall Anderson on his appointment as physician-in-ordinary to the King in Scotland in the place of the late Sir William T. Gairdner. Thereafter Professor Noel Paton delivered a short address to the graduates. He remarked at the outset that he did not think their success as students was to be estimated so much by the amount of information they had acquired as by the extent to which their love of knowledge had been developed. To his mind the least desirable of the medical profession was the so-called "practical man" who, through want of intelligence and imagination, was unable to see the depth of his ignorance and who was not content merely himself to go on without adding to the sum of knowledge but who was ready to jibe and to jeer at those who gave their lives to attempts, however unsuccessful, to pierce the cloud of their ignorance. He hoped that the Carnegie trustees would be able to arrange for a stipend being paid to their fellows somewhat more liberal than at present. It was impossible to expect men to devote themselves to science on a less income than they could make as assistants in practice. Until a few years ago those who elected to prosecute research had to resort to the laboratories of Germany and France, but now the laboratories of this country rivalled the laboratories of Germany, and in every university town the young graduate found at his door every facility for the prosecution of research. Especially at Glasgow were such facilities afforded, for at the present time no university could boast the possession of finer laboratories devoted to medical science. Let them hope that the work that came from their laboratories and their school in the future would justify the efforts of their late Principal and his colleagues, who were not afraid to be in advance of the immediate requirements of the university, and who saw how she must be equipped if she was to take her due place in the advance of medical science. Time given to research work he assured them was not lost to the practical man. The conditions of the scholarships for this work might at present be too exacting, but it was to be hoped that before the next quinquennial distribution of the funds some more elastic arrangement would be made by which the scholar would not be required to give his whole time to laboratory work but would be allowed to widen his professional education.

### *Death of Dr. John Pirie.*

The intimation of the death of Dr. John Pirie will be received with regret by members of the medical profession in the West of Scotland. Some years ago Dr. Pirie retired from practice in Glasgow, and about a year ago went to reside at Campbeltown, where he passed away last week in his eighty-first year. He was a native of Ross-shire and was educated at the University of Aberdeen, taking first the degree of M.A., and in 1846 that of M.B. About the year 1852, after graduating M.D., he went to Campbeltown, where he remained till 1867, when he came to Glasgow, where the rest of his active life was spent. Dr. Pirie was a fine representative of the physician of the old school, genial, kindly, and generous, with a rich fund of wit and humour. By his professional brethren he was held in the highest respect. From the time he settled in Glasgow he took a great interest in the necessitous poor and was one of the founders of the Glasgow Medical Mission. Dr. Pirie was married to a daughter of Dr. Harvey, a well-known surgeon in Campbeltown, by whom he was predeceased.

### *Enteric Fever in Peterhead.*

During the past week 43 cases of enteric fever have been notified in Peterhead. The total number of cases notified since the fever broke out is 293, of which 98 have been treated in the hospital and the remainder at home. 36 patients have been discharged and two have died during the past week. Out of the total number of cases 120 have fully recovered.

### *Dundee Lunacy Board and Alcoholism.*

At a meeting of the Dundee lunacy board last week the medical superintendent said he had found that alcoholism and heredity were the chief factors inducing insanity amongst the patients at the asylum. What, in his opinion, aggravated the temptation to drink was the public sanction, both by the multitude of licensed houses and the slackness of public opinion.

### *The Carnegie Trust: Awards for Research to Aberdeen Students.*

The following awards for research have been made to Aberdeen students:—Fellowship: Hugh MacLean, M.D. Aberd., the Carbohydrate Material and Ferments of Blood. Scholarships: Williamina Abel, M.B., Ch.B. Aberd., the Development of the Peripheral Nervous Mechanism of the Alimentary Canal in Vertebrates. Walter J. Dilling, M.B., Ch.B. Aberd., the Influence of Changes in the Reaction of the Blood on the Muscular Tone of the Vascular System. Grant: Alexander Low, M.A., M.B., C.M., lecturer in embryology, University of Aberdeen, Embryological Research, more Especially the Reconstruction of Original Embryological Models.

August 6th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *The Use of Tuberculin as a Means of Diagnosis.*

FOR diagnosing tuberculosis M. Paul Claisse makes use of repeated small injections of tuberculin, a procedure described by M. Moeller, M. Loewenstein, and M. Ostrowsky at the Tuberculosis Congress in 1905. This method depends on the fact that if a healthy adult is injected with 0·2 milligramme of tuberculin every three days reaction only commences with the seventh injection, but if the person is tuberculous this reaction, which includes pyrexia, auscultatory symptoms, and a special form of malaise, may make its appearance at the first, second, third, or fourth injections. There is therefore between the fourth and seventh injections an interval which serves to distinguish a non-tuberculous person from a tuberculous one. This method is quite harmless and has yielded M. Claisse very distinct results, enabling him to solve some puzzling clinical problems. It is contra-indicated when pyrexia is present, because the necessary inferences cannot then be drawn from the temperature curve. Its use ought to be restricted to the examination of latent or masked cases of tuberculosis. A positive reaction enables tuberculosis to be diagnosed at an early stage before the appearance of clinical symptoms. M. Claisse read a paper on this subject at a recent meeting of the Société Médicale des Hôpitaux.

### *The Hôpital Beaujon.*

Reference has already been made in this column to the fact that several of the Paris hospitals are in need of reconstruction, either on account of the unsatisfactory condition of their structure or because the continual extension of the city has had the effect of making their position too central. The Hôpital Beaujon not only suffers from both these disadvantages but is, moreover, in the midst of one of the most fashionable quarters of Paris, so that the sale of its site will easily provide a sum more than sufficient for the erection and furnishing of a new hospital. A site has been selected between the Porte de Villiers, the Porte des Ternes, the Route de la Révolte, and the Boulevard de Villiers, and it is intended to begin work there very shortly.

### *The Swallowing of Foreign Bodies by Insane Persons.*

At a meeting of the Société Médicale des Hôpitaux held on July 5th M. Marie described three cases in which foreign bodies were swallowed by insane persons. In one of them the objects swallowed were metallic, consisting of iron, copper, tin, steel, or silver. Radiographs were shown that had been taken from a woman who had died from phlegmonous disease of the ileum after swallowing more than 100 needles; specimens in which needles were imbedded in bone were also exhibited. An insane man had swallowed 30 small stones, four silver five-franc pieces, and a large number of objects which were passed by the anus after more than 15 days. A third patient swallowed metallic articles, small stones, and fragments of glass and earthenware. He died from peritonitis and at the necropsy more than 50 foreign bodies were found in the small intestine.

### *The Treatment of Nail Biting.*

At a meeting of the Academy of Medicine held on

July 2nd, M. Didsbury said that the treatment of nail biting was a source of difficulty. Instead of protecting the nail, as has hitherto been the practice, he thought that it was better to prevent complete closing of the teeth (*desarmer la dent en relevant l'articulation*). He showed an appliance which served this purpose; it fitted the lower molars and was fastened behind the front teeth. Other methods consisted in the use of a gold cap fixed to one molar tooth, a false tooth purposely made too long, or an apparatus removeable at meal times which seemed to be the best of all.

*Scarlet Fever in Paris.*

Scarlet fever is prevalent in Paris just now and has been increasing in severity for the last four months. Statistics show that there is an average of more than 500 cases a week. The special hospitals, the hospital at Aubervilliers, and Bastions 27 and 29 are crowded with patients. More accommodation has been provided by transferring the patients in the Hôpital Bichat to other hospitals, principally Lariboisière and Beaujon, and using the Hôpital Bichat for scarlet fever cases. Fortunately, there are now some signs that the epidemic is decreasing.

August 5th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Experiments on Cancer.*

Professor Bier of Berlin, writing to the *Deutsche Medizinische Wochenschrift*, reports the details of an investigation into the influence of the injection of blood of animals on inoperable growths in the human subject. He finds that the injection of 10 or 20 cubic centimetres of pig's blood made under aseptic precautions into healthy human tissue produces a local reaction which reaches its climax within three days and then gradually disappears. Pyrexia also occurs, and when the injection is repeated a smaller quantity of blood is sufficient to produce the same effect owing to the hæmolytic action induced in the individual. Lamb's blood has a milder action but no harm was done by the injection of pig's blood. The injection of the defibrinated blood of a creature belonging to a different genus is certainly the safest way of producing inflammation and fever. This alien blood has no dissolving influence on normal tissue but only on cancer. Pig's blood injected into cancerous tissue caused a diminution of the secretion; the growth itself was in some cases not influenced, while other growths became rapidly necrosed and reduced in size, so that Professor Bier believed them to have nearly healed, but on microscopical examination this opinion proved erroneous. In one case of cancer in a lupus scar treated by four injections of pig's blood the growth disappeared and even on microscopical examination no cancerous tissue was found; the patient had, however, previously undergone treatment by the Roentgen rays so that no case has undoubtedly been cured by injections of alien blood. Two cases of extensive inoperable cancer of the cheek and of the cervical glands are described in detail where injections were made, the result being that in one of them there was total necrosis and in the other a formation of connective tissue within and round the cancer developed. Professor Bier has concluded that there is no very obvious prospect of malignant growths being successfully treated in this way.

August 6th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*Science in Session.*

THE Italian Association for the Advancement of Science after two "false starts" in 1839 and 1875—the first at Pisa, the second at Palermo—has this time got fairly under way, and if long, laborious, and well-inspired preparation can insure success may look forward to a series of triumphs little, if at all, inferior to those of the British Association, whose work it aspires to emulate and on whose lines it is organised. Its first meeting will be held at Parma from Sept. 23rd to the 29th, and its programme will include original papers on the more recent developments of inductive research. The medical sciences will be strongly represented, particularly in anatomy, human and comparative; while embryology will have the attention it is so worthily entitled to at the hands of the distinguished professor of that subject in the University of Pisa, Dr. Guglielmo Romiti. Unusual attraction is held out by the Tenth Section, that of anthropology, ethnography, and palæo-ethnology, the last-named science being represented by Professor Luigi Pigorini of the University of Rome, where he holds the chair of Palæontology. It is right to remember that in Parma were initiated and carried to a high pitch of development those studies on the "Terramare," of which the results are so richly *en évidence* in the local museum—a collection, indeed, which has few equals in its presentation of the industrial products found in the most antique "stazioni" of the pure age of bronze. In Parma, moreover, at the eastern extremity of the city there exists one of the most noteworthy "Terramare"—among the very few in which at the greatest depth there survive the various orders of "palafitte" (piles) in the most perfect preservation. Expressly for the palæo-ethnologists who may intervene on the occasion there will be opened a trench reaching down to the virgin soil so as to furnish an object lesson in the Italian "Terramare" hitherto withheld from science. The programme of Section X. as a whole will be one of the most interesting of the number—thanks to the the zeal of its accomplished President, Professor Pigorini aforesaid. Another theme on which the association may be expected to throw much light is the connexion between "Foreste, Idrologia, Igiene" (forest-growth, rainfall, and hygiene). THE LANCET has often referred to the importance of re-afforesting the denuded hill-sides and uplands of Italy if only to minimise the autumnal and vernal floods, with the disasters they bring to every local interest, sanitary as well as agricultural and commercial. Signor Vittoria Perona, professor of "Economia Forestale" at Italy's one school of forestry (Vallombrosa), has recently given to the world a vivid picture of the widespread misery consequent in Latin countries on systematic tree-felling unbalanced by equally systematic tree-planting, taking as his text the words of Humboldt: "By destroying the forest growth which covers the mountain side mankind in all climates prepares for generations unborn two great calamities —a lack of timber and a deficiency of water." A perusal of Professor Perona's pages will form an apt preparation for the discussion which is expected on their all-important theme—a discussion which, it is hoped, will not be without practical results in legislation general and local.

*The Second International Congress on Physio-Therapy.*

As already announced in THE LANCET, this Congress, to which the hygienic interest of so many countries is eagerly looking forward, will meet in Rome from Oct. 12th to 17th under the presidency of the Senator Guido Baccelli, the veteran head of the Roman Medical School. From the list now before me of the names of those who are expected to intervene some notion may be formed of the importance attached to its proceedings—the English-speaking world being represented by some of its leaders in medicine, surgery, and hygiene. The same may be said of other nationalities—France, Germany, Austria, Denmark, Sweden, Norway, Belgium, Holland, and Switzerland; while the Far East will have not a few delegates, prominent among them being those from Japan. I may again draw attention to the very liberal conditions of transit by land and sea provided by the Government with a view to enabling the "Congressisti" of non-Italian nationality to visit the many climatic and balneary resorts throughout the kingdom, the development and equipment of which have evoked so much enterprise and outlay on the mainland and in the islands. The *Libretto di Viaggio*, available for ladies equally with the male sex, will entitle its possessor to travel at reduced fares from Oct. 1st to Nov. 15th to every place of medical interest in the kingdom—at a season, moreover, when Italian weather contrasts favourably with that of most other countries, the British Isles not excepted!

August 6th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*The Vienna Serum Institute.*

THE new premises of the Vienna Serum Institute have been recently opened and the horses, altogether 47 in number, have been transferred to their new stables. The institute serves two distinct purposes. In the first place it is devoted to scientific research and in the second place it prepares sera against certain diseases, which sera can be obtained by medical institutions and practitioners. Although there are many horses bought every few months only those are selected which, after certain experiments, prove to be sufficiently strong and have a considerable power of forming new blood. Artillery horses are preferred because of their endurance. The age of the animals must not be less than six years. They are very well kept and special care is taken to insure the cleanliness of the stalls. In the stables there are five horses which have been yielding serum for upwards of ten years, the record having been reached by an animal which lived 25 years in this capacity. At present there are 26 horses immunised against diphtheria, two against scarlet fever (by Dr. Moser's system), three each against cholera, dysentery, typhoid fever, and tetanus, two each against streptococcal infection and puerperal fever, and one each against pneumococcal and meningococcal infection. Some of the horses, like the one which is immunised against tetanus, produce a peculiar kind of serum which is very strong, stronger than most other horses can produce. The animals are brought out into the fresh air daily for two hours, and those which were formerly saddle horses are ridden regularly so as to keep them in good condition. About 12 per cent. of them are pronounced unsuitable for the institute every year either on account of the inferiority of the serum obtained from them or because they do not overcome the inoculated disease. Horses with a very thin fine skin are the best for the required purpose. As regards the quantity of the serum prepared in the institute 71,506 bottles of anti-diphtheritic serum were made and sold in 1905 and 75,000 bottles in 1906, together with 7500 doses of anti-scarlatinal serum and 2000 doses of dysentery serum. Since 1906 the institute has been self-supporting, as the sale of the sera to private patients covers the cost of manufacture. The quantity of blood taken from each animal amounts to six litres (11 pints) each time, and as this is repeated ten times a year 110 pints of blood have to be reproduced by the organism within a year.

### *The Increase of Hospital Accommodation within the last 30 years.*

An interesting comparative study of the accommodation provided by the State for the treatment of disease has just been published and shows that such accommodation for patients of the poorer class has been greatly extended during the last 30 years. In 1877 there were in Austria, with a population of 20,500,000, altogether 161 hospitals which contained 18,960 beds, or about one bed per 1300 of the population. Within 30 years (i.e., up to 1907) the population has increased to 27,000,000 and the hospitals at present number 254, but the number of beds has been nearly doubled, there being now a total of 37,610 beds—i.e., one bed for about 800 of the population. This ratio is naturally different in the different countries of the empire, as the industrial, densely populated districts are better provided for in this respect than the purely rural parts. There is also clearly visible a tendency to diminish administrative expenses by centralising the charitable institutions, so that only large hospitals are built now. The costs of administration were formerly from 25 to 30 per cent. of the total expenditure of all the hospitals, whilst now this item stands at only from 15 to 20 per cent. This is the more remarkable if it is compared with the fact that 30 years ago each patient cost the State about 1*s.*, whilst now he costs 1*s.* 6*d.* The lunatic asylums were then 21 in number, with only 5580 beds. Now there are 36 asylums with 16,400 beds and another one which is in course of construction will accommodate 3000 inmates. The alarming increase of mental disease, which has already led to the appointment of a special committee to investigate the cause of this increase, is thus illustrated only too vividly. The number of lying-in and maternity wards has not been increased during the time taken into consideration, but the old institutions have been enlarged, so that at present they contain 2071 beds, as compared with 1529 beds in the year 1877; about 25,000 children are born yearly in these establishments.

### *The New Hygienic Institute.*

One of the four large university institutes to be erected within three years has been now completed and will be made ready for use within a short time. This, which is the Institute for Hygiene, is a magnificent four-storey building, situated a few minutes' walk from the General Hospital. It has three frontages to streets and another side overlooks a large garden. It will contain Professor Schattenfroh's classrooms of hygiene, the institute of Professor Paltauf for serum treatment, the pathologico-historic museum, the laboratory for examination of food, and two large lecture rooms, each with seats for 250 students. Convenient housing accommodation for the animals to be used in experiments and ample disinfecting apparatus are also provided, so that all kinds of scientific research as well as practical work can be carried on. The cost of the building is comparatively low, the outlay on construction being £80,000 without the scientific outfit. The neurological and the embryological institutes will be commenced very soon, so that within three years there will be schools provided with all modern facilities, where students will find ample opportunity for earnest work.

### *The Treatment of Snake-bite.*

In a communication published in the *Wiener Klinische Wochenschrift* Professor Riehl points out that during the last few years poisonous serpents have been constantly increasing in number in the southern parts of the Austrian empire. There are chiefly three kinds of these serpents found here and they all belong to the species vipera The rewards offered by the Government for the destruction of them have not been very efficient, although more than 6000 have been killed in one year in the small district of Styria. The mortality of persons bitten by serpents in Europe has been given as between 10 and 25 per cent. The best treatment must aim at destroying the poison at the part bitten and at preventing its absorption into the system. Several methods, such as cauterisation, bleeding, compression, and the application of a ligature, have been advised for these purposes. Professor Calmette's antitoxin against cobra and rattlesnake poison has the disadvantage of being specific for these poisons only, so that it is inapplicable in Austria. Extensive trials have now been made by Professor Calmette and Professor Paltauf of methods to prevent poisoning by treating the affected part with a solution of chlorate of calcium. A solution of one part of this substance in 12 parts of water is to be diluted before use with six times as much water and from ten to 12 cubic centimetres are to be injected by means of a Pravaz syringe around the bite so that the poison may be neutralised. This simple method is said to be efficacious for all sorts of snake-poison. The earlier treatment is instituted the better the result. Professor Riehl has had small packets put up by the pharmaceutical druggists, containing a Pravaz syringe, two sterilised injection needles, a small quantity of the solution, and a small mixture glass with instructions for using the whole packet. It is sometimes more handy to use not the solutions but the solid chlorate of lime in pastilles. Such pastilles are now to be had in the hotels and hunting lodges in the districts where snakes abound and in small villages the mayor may keep them, so that serious accidents are not so likely to occur now as they were formerly.

August 5th.

# Obituary.

## SYDNEY RUPERT HODGE, M.R.C.S. ENG., L.R.C.P. LOND.

THE death is announced, by cable, of the Rev. Sydney Rupert Hodge, senior medical officer of the Wesleyan Mission Hospital, Hankow, China, which took place suddenly on July 21st, at Kuling, near Hankow, where he had gone for a holiday. Mr. Hodge was the son of the late Sydney Bryan Hodge of Highbury-grove, London. He was born in 1859 and received his education at the Leys School, Cambridge. He entered Richmond College as a candidate for the Wesleyan ministry, but later decided to become a medical missionary. For this purpose he studied at the London Hospital and eventually qualified in 1886 as M.R.C.S. Eng., L.R.C.P. Lond. In the same year he was sent out to China to take medical charge of the Wuchang District, he being stationed at Hankow. Through his instrumentality and untiring energy the Hankow Mission Hospital (which had fallen into ruins) was rebuilt, but until the buildings were ready Mr. Hodge saw patients and even performed operations in his study. At Hankow he laboured for 20 years with conspicuous success. Unsparing of his own energies he has literally spent his life in the service of stricken humanity in China and has died as truly a martyr in the cause which he had at heart as if he had been stricken down by the hand of violence. For years past he had been unwell, but, notwithstanding this, he came to England a short while ago for further hospital training, the better to fit him to carry on his work in China. Returning to Hankow, though still in ill-health, he died practically in harness. His death is deeply deplored both by his friends in England and by those among whom he laboured for so long. He was an ex-President of the Medical Missionary Association of China and also a member of the Ophthalmological Society. He leaves a widow and one daughter to mourn him and to them we tender sincere sympathy in their bereavement.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Hoyer, formerly professor of physiology and histology in the University of Warsaw.—Dr. Albrecht, late head of the Technical Department of the Odontological Institute of the Berlin University.—Dr. Albert Weiss of Cassel, who, in addition to various medical works, published many poems, both original and translations from the Bohemian.—Dr. Alex. Geh, professor of dermatology and venereal diseases in the University of Kazan.

# Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination of the Conjoint Examining Board held on July 16th, 17th, 18th, and 19th, the following gentlemen were approved in the subjects indicated:—

*Chemistry and Physics.*—George Aldridge, St. Bartholomew's Hospital; Thomas Stevens Allen, Guy's Hospital; Charles Nelson Atlee, St. Mary's Hospital; Samuel Isaac Blairmann, Middlesex Hospital; Charles Grinling Bunn, Charing Cross Hospital; Terence Campbell Butler, Westminster and King's College Hospitals; Thomas Clarke, Leeds University; Cyril James Weston Clayton, St. Mary's Hospital; Claude Gray Colyer, Birkbeck Institute; David Henry Davies, University College, Cardiff; Bartholomew Gidley Derry, University College, Bristol; Alfred George Timbrell Fisher, University College, Bristol; Frederick Thomas Fisher, Birmingham University; Hubert Gibson, Liverpool University; Herbert Msrshall Gilbertson, St. Bartholomew's Hospital; Arthur Oliver Gray, Birkbeck Institute; Kenneth Banks Greenwood, London Hospital; William Edward Hallinan, Charing Cross Hospital; Mohammad Zaky Hanafy, Guy's Hospital; Ernest Ravensworth Hart, Guy's Hospital; John Roll Hayman, Middlesex Hospital; Edward Howard Heaton, London Hospital; John Eric Hepper, St. Bartholomew's Hospital; Henry Sydney Colchester Hooper, London Hospital; Frederick Malcolm Stirling Hulke, Middlesex Hospital; Darrell Robert Norman O'Neale Humphrey-Davy, St. Mary's Hospital; Arthur Edward Huxtable, Charing Cross Hospital; Cornelius Kennedy, Liverpool University; Geoffrey William King, Guy's Hospital; Adolph Bertie Kramer, Edinburgh University; Allan Wellesley Lewis, St. Mary's Hospital; Charles Cooper Ling, London Hospital; Arthur Lowndes, Manchester University; Reginald Hutchinson Lucas, Guy's Hospital; William Henry Matthews, Liverpool University; William Frank Morgan, London Hospital; Owen Colville Morphy, Birkbeck Institute; George Marshall Oakden, Sheffield University; John Francis O'Malley, Middlesex Hospital; Frederic John Palmer, St. Mary's Hospital; George Hugh Piercy, University College, Bristol; John Pinder, Leeds University; Oswald Pitt, Manchester University; Alfred Graham Poock, Cambridge University; Richard Frith Quinton, London Hospital; John Magnus Redding, Charing Cross Hospital; Cecil Goodwin Reinhardt, Leeds University; John Richard Cook Stephens, London Hospital; Edward Algernon Weaver, Birmingham University; John Douglas Webb, Liverpool University; Cyril Guy Whorlow, St. Paul's School; Miles Astman Knight Wood, St. Bartholomew's Hospital; and William Worger, University College, Bristol.

*Chemistry.*—Burgess Barnett, St. Bartholomew's Hospital; Allan Stanley Coalbank, St. Bartholomew's Hospital; John Baptist Gregory Dotto, St. Bartholomew's Hospital; Geoffrey Garland, Leeds University; Arthur Ernest Williams Idris, University College; Walter Louis Ingram, Guy's Hospital; William Fidler Mason, Leeds University; Eugene Andrew Joseph Murphy, King's College; John Hayward Paget, Charing Cross Hospital; William Piper, Manchester University; Marcus Holroyd Ratton, Guy's Hospital; John Basil Robertson, London Hospital; Edmund Uniacke Russell, King's College; Arthur Tilbury, Guy's Hospital; and Ramanathan Vamadeva, King's College.

*Physics.*—Ahmed Abdel-Al, Guy's Hospital; Frank Cunninghame Cowtan, St. Thomas's Hospital; Arthur Lewis Davies, University College; Maurice Dwyer, Leeds University; Alexander Rentoul Esler, St. Thomas's Hospital; Maberly Squire Esler, St. Thomas's Hospital; Alexander Percival Green, Polytechnic Institute; Arthur Holmes, Liverpool University; Samuel Hutchinson, University College; George Basil Henley Jones, Guy's Hospital; Harold Bishop Logan, University College, Bristol; Eadbert Ralph Longstaff, St. Bartholomew's Hospital; Hamed Mahmud, St. Thomas's Hospital; Courtenay Henry Gerald Pochin, Guy's Hospital; Ellis Herbert Sydney Scarr, Manchester University; Cecil Hearle Symons, Charing Cross Hospital; and Ivan Lindley Waddell, St. Bartholomew's Hospital.

*Elementary Biology.*—Thomas Stevens Allen, Guy's Hospital; Wilfrid Andrew, King's College; Horace Arthur Arkill, Charing Cross Hospital; Herbert Ferris Barge, Birkbeck Institute; Basil Fraser Beatson, Leys School, Cambridge; Jamshedji Sorabji Bhajiwalla, Bombay University; Philip Norman Button, Middlesex Hospital; Frederick William Campbell, University College, Cardiff; Nai Cheune, London Hospital; Andrew Cory, London Hospital; Arthur Lewis Davies, University College; Edward Percy Drabble, London Hospital; John Herbert Drinkall, Middlesex Hospital; Alexander Rentoul Esler, St. Thomas's Hospital; Richard Shirley Fawssett, St. Bartholomew's Hospital; Philip Cuthbert Collingwood Fenwick, St. Thomas's Hospital; Frederick Thomas Fisher, Birmingham University; Hubert Gibson, Liverpool University; Herbert Marshall Gilbertson, St. Bartholomew's Hospital; Arthur Oliver Gray, Birkbeck Institute; Ernest Ravensworth Hart, Guy's Hospital; Arthur Edward Huxtable, Charing Cross Hospital; William Sadler Hyde, Guy's Hospital; Adolph Bertie Kramer, Edinburgh University; Charles Cooper Ling, London Hospital; Adolph Richard Niell MacGillycuddy, University College; William Henry Matthews, Liverpool University; Henry Marie Alphonse Menage, St. Bartholomew's Hospital; William Frank Morgan, London Hospital; Joseph Morrey, Manchester University; Cyril Scotter Owen, Manchester University; Charles Henry Greville Penny, Guy's Hospital; Michael Gladstone Pettigrew, Sheffield University; John Magnus Redding, Charing Cross Hospital; Walter Graham Reynolds, St. Mary's Hospital; Stanley Alfred Riddett, Middlesex Hospital; Guy Frederick Romer and William Edward Tanner, Birkbeck Institute; John William Thomas, Leeds University; Claude William Treherne, St. Thomas's Hospital; Arthur Geoffrey Turner, St. Bartholomew's Hospital; Ivan Lindley Waddell, St. Bartholomew's Hospital; Edward Algernon Weaver, Birmingham University; and Cyril Guy Whorlow, St. Paul's School.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the preliminary science examination for the Licence in Dental Surgery the following gentlemen were approved in the subjects indicated:—

*Chemistry and Physics.*—Cecil Hastings Bradnam, Guy's Hospital; Herbert Brown, Holt School of Science, Birkenhead; Alfred Fisher Camp, University College, Reading; Frederick Scott Cooper, Leeds University; Frederick James Craig, Charing Cross Hospital; Frederick Graham Emanuel, Polytechnic Institute; Bernard John Geekie, Oxford University; Max David Gillis, Münich University; Gerald John Harborow, Birkbeck College; Gilbert Henry Hickman, Guy's Hospital; George Hobbs, Science and Art Institute, Walsall; Edward Palmer Hudson, Birkbeck College; Eric Greaves Ireland, Liverpool University; Leslie Gordon Kinnersley, University College, Bristol; Harold William Knowling, Harris Institute, Preston; Stanley Lawson, Brighton Municipal Technical College; Leonard Clive Matthews, Birmingham University; Harold Mawson, Bradford Technical College; John Dudley Melhuish, University College, Bristol; Victor Mayfield Morris, Felsted School; Hubert Walter George Randell, Birkbeck College; Warren Longtoft Roberts, Leeds University; Gordon Evelyn Rowstron, Birkbeck College; Charles Frederic Leyson Ruck, Guy's Hospital; Irvine Rushton, Municipal Technical School, Halifax; Bernard Edward Patrick Sayers, Birkbeck College; Leslie Shovelton, Science and Art Institute, Walsall; Patrick Barry Stoner, Technical School, Brighton; William Suffield, Technical College, Sunderland; Robert Douglas Breen Turner, Liverpool University; William Hector Wotton, Birkbeck College; and George Trevor Yonge, Dulwich College and Birkbeck Institute.

*Chemistry.*—Eric Horsfall Chesters, Birmingham University; Charles Repton Faulkner, Birmingham University; George Theodore Douglas Hughes, Municipal Technical School, Liverpool; William Caffyn Miller, Polytechnic Institute; Cecil Graves Morris, Guy's Hospital; William Henry Whitworth, Royal Technical Institute, Salford; and James Wignall, Harris Institute, Preston.

*Physics.*—Ernest Walker Bacon, Alleyn's School, Dulwich; Albert Bangert, Polytechnic Institute; Harold Barrett, Birkbeck College; Arnold John Chapman, Birkbeck College; Sydney Ingram Fillingham, Manchester University; Frederic Edwin Gill, Liverpool University; Edward Aubrey Clement Knox-Davies, University College, Reading, and Reading School; Cyril Arthur Pollard, Birkbeck College; Vincent Joseph Powell, Liverpool University; Frederick Gordon Pulford, Birkbeck College; Grantley Smith, University College, Bristol; Clifford Toulson Watson, High School, Middlesbrough; and Gordon Stafford Woodhouse, Birkbeck College.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the examinations of the Scottish Conjoint Board held in Glasgow in July the following candidates passed their respective examinations:—

*First Examination (five years' course).*—Francis William Grant (with distinction), Glasgow; James Grant Morrin, Glasgow; Morris William Rees (with distinction), Festiniog, North Wales; Francis Patrick Quirk, New South Wales; James Douglas Wright, Coatbridge; William Millerick, Castlemarty, County Cork; and John Boyd Michie, Alloa.

*Second Examination (five years' course).*—Surcudra Kumar Sen (with distinction), Bengal; Edith Huffton, Madras; Robert John Helsby (with distinction), Denbigh, North Wales; and Harold Hope Scott, Banbridge. *Four years' course:* Thomas Mitchell Jamieson, Belfast.

*Third Examination (five years' course).*—Richard B. M. Sullivan, Belfast; Osmonde Rusleigh Belcher, Liverpool; Thomas Sholto

Douglas, Greenock; Isaac Flack, Galway; Henry Frank Collins, Edinburgh; Alexander Baxendale, Bolton; and Robert M'Connell Blair, Crookston.

*Final Examination (and admitted Licentiates of the Coöperating Bodies).*—John David Jones, Llanygrsion, North Wales; James Finbair Jefferies, Cork; John Robert Dunn Holtby (with honours), Belfast; Hugh Clement de Souza, Rangoon; Walter Riddell, Glasgow; Isaac Flack, Galway; George Ernest Nash, Hove, Sussex; Walter Ernest Barrett, Leeds; Gilbert Elliot Aitken, Edinburgh; Robert Kay Nisbet, Glasgow; David Williamson Morison, Canada; Cuverji Ruttonji Vevai, Bombay; Jitendra Nath Rai, Punjab; Clare Annis Langmaid, Canada; Bhairàwnath Donanath Khote, Bombay; Edwin George Hodgson, Canada; and Charles Jacobs Tillekeratne, Ceylon.

Victoria University of Manchester.—At examinations held in the Faculty of Medicine in July the following candidates were successful in the subjects indicated:—

### First M B. and Ch.B. Examination.

*Materia Medica and Pharmacy*—L. T. Challenor, L. W. Howlett, Newton Matthews, Jane C. Miller, Lovell Moss, R. P. Stewart, William Stirling. J. S. B. Stopford, G. K. Thompson, William Warburton, and Charlotte E. Warner.

### Second M.B. and Ch.B. Examination.

*Anatomy and Physiology.*—Estelle I. E. Atkinson, G. M. Benton, C. G. Brentnall, S. J. Clegg, J. F. Cocker, G. T. Cregan, H. A Dunkerley. Gertrude H. Geiler (Anatomy), S. A. Winstanley, and F. G. Wrigley.

*Materia Medica and Pharmacy.*—A. E. Ainscow, Rupert Briercliffe, John Cowan, V. S. Cox, E. R. Eatock, C. W. Fort, P. S. Green, Edgar Grey, Harold Harrison, Harold Heathcote, R. C. Hutchinson, R. B. Jackson, Geoffrey Lapage, James Leach, J. D. Mercer, W. Hoyle Parkinson, Alexander Porter, J. B. Scott, W. A. Sneath, J. P. Stallard, James Walker, and H. C. Wright.

### Third M.B. and Ch.B. Examination.

R. J. Batty.

*Hygiene*—J. A. Bateman, T. B. Bolton, W. C. Denniston, Frances M. Huxley, E. K. Lomas, W. P. Marshall, John Morley, M. C. Skillern-Lawrence, John Thompson, R. B. Thompson, B. W. E. Trevor-Roper, W. W. Uttley, T. G. Williams, and A. E. Woodall.

### Final M.B. and Ch.B. Examination.

*Part I.*—Norman Booth, C. H. Broomhead, Elsie Brown, George Crawshaw, J. H. C. Green, and Ernest Howe.

*Part II.*—J. W. Bride, G. W. Bury, Harold Coppock. D. J. Dakeyne, J. F. Dow, † J. A. Fairer, Frederick Hall, † Frank Hartley, † Robert Lakin. V. D. Madgavkar, Peter Moran, Wilfrid Nightingale. Alice Oberdorfer, George Rainford, Robert Robertson, Douglas Rodger, Elsie M. Royle, Vincent Southwell, * T. W. Todd, G. B. Warburton, Henry Whitehead, and N. R. Williamson.

* With first-class honours. † With second-class honours.

### Ch.M. Examination.

A. R. Thompson.

### Diploma in Dentistry.

*Final Examination.*—J. L. Reynolds and Albert Torkington.

Foreign University Intelligence.—*Berne:* Dr. Osterle has been appointed Extraordinary Professor of Forensic and Pharmaceutical Chemistry.—*Düsseldorf:* The New Medical Institutes, which have just been erected at a cost of £325,000 for the Academy of Practical Medicine, were publicly opened by the Prussian Minister of Education on July 27th.—*Giessen:* Dr. H. Köppe, *privat-docent* of Children's Diseases, has been promoted to an Extraordinary Professorship.—*Jena:* Dr. Wilhelm Lubosch, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship.—*Leipsic:* Dr. Paul Schmidt has been recognised as *privat-docent* of Hygiene.—*Lyons:* Dr. Collet, *agrégé*, has been appointed to the chair of General Pathology in place of Professor Mayet. Dr. Pic, *agrégé*, has been appointed to the chair of Therapeutics in place of Professor Soulier. Dr. Roque, *agrégé*, has been appointed to the chair of Internal Pathology in place of Professor Teissier.—*Munich:* Dr. W. Brasch has been recognised as *privat-docent* of Nervous Diseases.—*New York* (*College of Physicians and Surgeons*): Dr. Baruch has been appointed Professor of Hydro-therapeutics.—*Paris:* Dr. Nicolas of Nancy has been appointed to the chair of Anatomy in place of the late Professor Poirier. Dr. G. Ballet, *agrégé*, has been appointed to the chair of the History of Medicine and Surgery in place of Professor Déjerine.—*Toulouse:* Dr. Audebert, *agrégé*, has been appointed to the chair of Clinical Midwifery.

Medical Sickness, Annuity, and Life Assurance Society.—The usual monthly meeting of the executive committee of this society was held at 6, Catherine-street, Strand, London, W.C., on July 26th. The chair was taken by Mr. J. Brindley James and there were also present Dr. St. Clair B. Shadwell, Dr. F. S. Palmer, Dr. M. G. Biggs, Mr. F. S. Edwards, Mr. J. F. Colyer, Dr. F. J. Allan, Dr. J. W. Hunt, Mr. Edward Bartlett, and Dr. J. B. Ball. The records of the society for the first half of the year are very satisfactory. As the number of the members standing grows the amount of sick pay disbursed naturally increases, but this was expected and fully provided for when the table of rules of contribution were settled, and the reserves of the society have grown until they now amount to over £200,000. Over two dozen of the members are now drawing the annuity—usually £104 9*s.*—provided for those who are permanently incapacitated from professional work. Prospectuses and all further information may be obtained from the secretary, Mr. F. Addiscott, 33, Chancery-lane, London, W.C.

Presentation to a Medical Practitioner.—On July 26th Dr. T. Outterson Wood was presented with a silver bowl by members of the committee of management and the medical staff of the West End Hospital for Nervous Diseases, Welbeck-street, London, W., upon his retiring from the post of senior physician, which he had held for so many years, and his being appointed consulting physician to the hospital.

Donations and Bequests.—By the will of Mrs. Maud Hand of Burton House, Stafford, £10,000 have been left in trust for the purchase of a site and the erection and endowment of a convalescent home for five or more children of the county of Stafford in memory of her son, and £1000 to the Great Ormond-street Hospital for Children for a "Kenelm Cot Bed."—Under the will of Mrs. Martha Miller of Fitzjohn's-avenue, South Hampstead, N.W., £1000 have been left to the Earlswood Asylum for Idiots, £1000 to the London Orphan Asylum, Watford, and £1000 to the West Sussex, East Hants, and Chichester Infirmary.—Miss B. Osborn of Brown Top, Workington, Cumberland, by will bequeathed £1000 to the Cumberland Infirmary, Carlisle, £1000 to the Workington Infirmary, and £300 to the Cumberland Sanatorium for Consumptives, to be applied towards securing a bed there for Workington for four years.—Mrs. Hamlyn of Clovelly Court has given 600 guineas to endow a bed in the Bideford (Devon) Infirmary in memory of her late husband.—Sir Alexander Wilson has by will left £1000 each to the Sheffield General Infirmary and to the Sheffield Royal Hospital and £500 to the Sheffield Children's Hospital.—Mrs. Emma Cadbury has, among other bequests, left by will £500 to the English Hospital at Jerusalem.—The honorary secretaries of King Edward's Hospital Fund for London have received from the executors of the late Lieutenant-General G. E. Baynes the sum of £10,000, being a second payment on account of the residuary estate bequeathed by the deceased to the fund.—Through Mr. A. Pearce Gould a donation of 100 guineas has been received by the secretary of the Middlesex Hospital Cancer Research Fund from Mr. A. J. R. Carlill.

Insurance against Sickness.—Mr. Oppenheimer, British Consul-General at Frankfort, in his annual report to the Foreign Office mentions that in Germany insurance against sickness is legally compulsory for all industrial workers, artisans, apprentices, and technical and commercial employees with an annual wage not exceeding 2000 marks. This insurance embraced during the first year of its existence 4,500,000 of insured and the number has since risen to 12,000,000. 20,000 offices, chiefly "local" and "factory" fund offices, carry out the practical work of this insurance, the minimum benefits of which are: (1) free medical treatment and supply of remedies (including spectacles, &c.); (2) from the third day of illness onward, sick money (daily at least half of the daily wage), or home treatment and half of the sick money paid to relatives. The majority of these offices also pay for at least six weeks' monetary assistance to women in child-bed, and in case of death, as death money, a sum amounting to 20 times the average daily wage. The obligation of these offices under this heading extends to six months, beyond which other branches of insurance law come into operation. The premiums of this insurance are paid jointly by employers and employees, the insured paying two-thirds and the employers one-third. On an average each case of sickness, combined with inability to earn daily wages, entails to the office an expenditure of 50 marks. Since their foundation these offices have paid in 60,500,000 cases of sickness (representing over 1,000,000,000 days of sickness) 2,500,000,000 marks. In 1904, the latest year for which detailed figures are available, the number of days of sickness compensated amounted to 90,000,000 and the sums paid were: for sick money, 106,000,000 marks; for home treatment of sick, 31,000,000 marks; for medical attendant and remedies, 85,000,000 marks; for payments to women in child-bed, &c., 4,500,000 marks; and for death money, &c., 10,500,000 marks: total, 237,000,000 marks.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Medical Inspection of School Children.*

One of the Standing Committees of the House of Commons on Tuesday considered the Education (Administrative Provisions) Bill. Amongst the clauses which the committee agreed to retain in the measure was Clause 10, which relates to the medical inspection of elementary school children. There was a good deal of discussion on some of its details. Mr. Lupton, for example, moved an amendment that the medical inspection should only be made of those children whose parents expressly wished it, but this proposal was defeated. Mr. McKenna, the Minister for education, however, pointed out that parents who objected to the medical inspection of their children would have power to withdraw them from it. The clause emerged from the Committee with little amendment.

## HOUSE OF LORDS.

### Thursday, August 1st.

### *Vaccination (Scotland) Bill.*

Lord Hamilton of Dalzell moved the second reading of the Vaccination (Scotland) Bill. The noble Lord (who at times was indistinctly heard in the press gallery) explained that the object of the Bill was to introduce into Scotland the provisions of the English Vaccination Act of 1898 as regarded conscientious objection, and also to extend to Scotland the principles of the English Vaccination Bill of this year, which allowed a statutory declaration of objection to vaccination to be made before a justice of the peace or a commissioner for oaths. He thought that it was a self-evident proposition that the English legislation of 1898 with respect to vaccination should be extended to Scotland. The number of people who objected to compulsory vaccination might not in Scotland be relatively so great as in England. Their grievance was just as great and their claim for redress as strong. He thought that noble lords must recognise that grievance. In spite of the almost illegal leniency with which parish councils had been permitted to administer the law with regard to vaccination the number of prosecutions had steadily increased during the past ten years, and last year the number of them was 64. He trusted that their lordships would give the Bill a second reading.

Lord Balfour of Burleigh moved the rejection of the Bill. He said that there was no foundation for the suggestion that there was any analogy between the circumstances of Scotland and England, and there was no case for the adoption of the Bill so far as the circumstances of Scotland were concerned. The Government had passed the English Vaccination Act of 1898 because the circumstances which existed at that time made it necessary and judicious. There had been an enormous amount of discontent with the law with regard to compulsory vaccination in England. Local authorities were in revolt and the due administration of the law could not be secured. Therefore, with the consent of both Houses of Parliament, compulsory vaccination for England had been abandoned. There had never been anything analogous to these circumstances in Scotland. A great deal of the evil that had grown up in England was attributable to the fact that a child had to be vaccinated within a much shorter period than was the case in Scotland, though he believed that the period had been lengthened by recent legislation. In Scotland, if after six months a child was not vaccinated, the registrar communicated with the parish council and the parent was then offered to have sent to him a public vaccinator who would vaccinate the child, and if that offer was refused the parent was prosecuted. Up to the time he left the Scottish Office they had for a series of years vaccinated successfully 97 per cent. of the children who lived six months after birth, and in the remaining 3 per cent. were included those who were not susceptible to vaccination and those that had been lost sight of. For his part he had not seen the slightest discontent with regard to law as it existed in Scotland, and he believed that it had the active support of the public. The whole thing was moving with perfect smoothness, although he agreed that a distinction should be made between those who were honest objectors and those who were merely careless or negligent. He had every respect for those who did not believe in vaccination, though he did not think much of their intelligence, but he had no respect for those who said it was an interference with individual freedom. Almost every portion of government was an interference with individual freedom, and those who were most loud in their condemnation of all interference with freedom were the very people who were most anxious to interfere with the freedom of adult people to get a glass of beer or something else. Therefore, the statement that this was a wrong interference with the freedom of the subject was a statement that would not bear investigation. The true doctrine was this, that in a matter of this kind it was important for the community to have power to protect itself against one of the most infectious and loathsome of all diseases. Although he would not see anything very dreadful in fining a man half a crown or even ten shillings for breaking the law, he thought it was wrong to imprison any man for conscience' sake. During the time he was at the Scotch office there was not a single case of imprisonment for disobedience of the Scotch law regarding vaccination, though he feared that there had recently been one, as he had received from a correspondent a report about one man who had been sentenced to ten days' imprisonment for neglecting to have his child vaccinated, and he could not imagine any more regrettable circumstance or anything more calculated to strengthen the agitation against the administration of the vaccination laws. He believed, however, that there must have been some very special circumstances in this case to have led to the imprisonment The real agitators in this matter of vaccination were not the conscientious objectors but those who desired to see the vaccination laws abolished altogether. They had not been furnished with any expert opinion on the question and therefore he said that the noble lord and his advisers were not dealing fairly with the House or the public in Scotland in this matter. He had also to complain at the delay in introducing the Bill. They were now in the month of August and the Bill had not been in the other House and they were not given any opportunity of consulting the people of Scotland to ascertain whether there was any demand for it. The procedure of the Government had been to prevent the question being tested in Scotland, and if as he hoped they would, their Lordships rejected the Bill, he thought that they would be doing a wiser thing than if they passed it. What they were asked to do by the Bill was to strike out the compulsion behind vaccination and if they took that course they would be acting wrongly.

Lord Tweedmouth said that Lord Balfour's speech was a speech not in opposition to the present Bill but in advocacy of the repeal of the Act of 1898 passed by a Government of which he (Lord Balfour) was a member. So far as the information of the Scotch office went, it was that there had been very considerable representation as to the hardship of the present state of things in Scotland. He did not think that the present measure would be greatly used in Scotland but if there were really conscientious objectors they ought to have the same advantages that were given to the other inhabitants of Great Britain.

The Earl of Camperdown regretted that the Bill was not introduced in the early months of the Parliamentary session, so that the public health authorities in Scotland might have had an opportunity of expressing their opinion on it. Would the noble lord who represented the Scottish office (Lord Hamilton of Dalzell) go so far as to say that the Bill had been presented on the advice of the Local Government Board for Scotland? At the present time there did not appear to be any public demand in Scotland for the measure.

The Lord Chancellor said that for his own part he had always submitted to the vaccination law on the ground of authority. The reason why the vaccination law of England was modified in 1898 was because it was desired to produce more vaccination than there had been before. The reason of this was obvious to those who looked at the circumstances. There was the perversity and obstinacy of human nature and a disposition not to submit to force common in England as it was common to all masculine races. Perhaps it was more common in Scotland than in England. The Royal Commission on Vaccination was the preparers of the English Bill and that Bill, he thought, had produced more vaccination in England. Therefore he did not think the same thing would produce harm in Scotland. The Royal Commission recommended that the change should be made in all parts of the kingdom. The Bill was, therefore, a proposal based on the recommendation of the Royal Commission. It was brought forward by the Government of the day on the statement that there was dissatisfaction in Scotland. It was calculated to advance the very purposes which Lord Balfour had at heart—the increase of vaccination. If the noble lord left people in Scotland to think that they were being differentially treated notwithstanding the recommendation of the Royal Commission he would get an irrational and unreasonable feeling against vaccination which did not exist at the present moment.

Viscount St. Aldwyn believed that the change in the law in England had had the effect of increasing vaccination. He believed that Lord Balfour objected as strongly to imprisonment in connexion with the question of vaccination as any of their lordships. If a fine of 2*s.* 6*d.* or 10*s.* were a small thing, as Lord Balfour said, and Scotchmen, in spite of their traditional objection to the payment of money did not very much object to it, he still thought that their lordships should consider these fines in the light in which they might appear to the poorest in the community. Even a fine of 2*s.* 6*d.* might be felt to be a hardship to a person who knew that if he were in the same position in England he would be entitled to exemption. He was bound to say that he differed from his noble friend, and he did feel that it was impossible for him to go into the lobby with Lord Balfour against the Bill.

The motion for the rejection of the Bill was negatived without a division and the Bill was read a second time.

### *The Butter and Margarine Bill.*

Earl Carrington, in moving the second reading of this Bill, explained that it was designed to prevent fraud in the sale of butter and margarine.

The Earl of Onslow regretted that the Government had not seen its way in the Bill absolutely and entirely to prohibit the manufacture and sale of milk-blended butter.

The Bill was read a second time.

### *The Vaccination Bill.*

Lord Allendale in moving the second reading of the Vaccination Bill which has already passed all its stages in the House of Commons, said that the measure did not alter the law of vaccination as it stood, but simply effected an alteration in the legal method of obtaining an exemption from penalties for neglecting to have a child vaccinated. The Bill provided that no parent or custodian of a child should be liable to any penalty for the non-vaccination of the child if within four months of the child's birth he made a statutory declaration that he conscientiously objected to vaccination and delivered it to the vaccination officer of the district. He added that no serious opposition had been offered to the measure in the House of Commons.

The Bill was then read a second time.

### Wednesday, August 7th.

### *Scottish Bills Advanced.*

The Vaccination (Scotland) Bill passed through Committee.

The Public Health (Scotland) Amendment Bill was read a third time and passed.

## HOUSE OF COMMONS.

### Wednesday, July 31st.

### *Motor Omnibus Accidents.*

Mr. Timothy Davies asked the Secretary of State for the Home Department whether his attention had been called to the accident to a motor omnibus on Sunday last, when many people were seriously, and some dangerously, injured; was he aware that lives were daily sacrificed owing to careless driving and imperfect mechanism of the motor omnibuses which ran in the London streets; and whether he proposed to take measures to put a stop to this unnecessary sacrifice of human life and limb.—Mr. Gladstone answered: Inquiry is being made into the cause of this accident I may say that the omnibus in question is reported to have been well constructed, and the driver has the reputation of being skilled and careful. The number of fatal accidents from motor omnibuses is not so great as the honourable

Member suggests. In the last three months (April to June) seven accidents occurred. Everything that is possible is being done by the companies to devise means for preventing skidding.

### *Sanatoriums in Ireland.*

Mr. Hugh Law asked the Chief Secretary to the Lord Lieutenant of Ireland whether the Irish Local Government Board proposed to take any steps to carry out such recommendations of the Viceregal Commission on the Poor-law as did not require legislation; and in particular whether it was intended to build any sanatoriums for the treatment of consumption, or to adapt for the purpose any existing buildings.—Mr. Birrell replied: If the local authorities concerned should desire that effect may be given to any particular recommendations of the Viceregal Commission which can be carried out under the existing law the Local Government Board will give prompt and favourable consideration to the matter. Sanatoriums for the treatment of consumption can be provided under the existing law with the assent of the district councils. I may add that the Government are anxious that such administrative changes as can be now made should be undertaken without delay and are considering what steps may be taken with that object.

### *Tuberculous Meat and Milk.*

Mr. Field asked the President of the Local Government Board whether he could state if the returns compiled by the Registrar-General were so framed as to give the number of deaths alleged to be attributable to the eating of cooked tuberculous meat and drinking uncooked tuberculous milk, and whether the infantile mortality was specified with regard to those alleged causes.—Mr. Burns replied: The reply to the question is in the negative.

### *Haffkine's Prophylactic.*

Sir William Collins asked the Secretary of State for India whether he proposed to institute any further inquiry into certain deaths from tetanus in the Punjab consequent on the employment of Mr. Haffkine's prophylactic against plague or whether he accepted the conclusions of the Jenkins' Commission and of the Lister Institute as final; what action he proposed to take in regard to the further use of Mr. Haffkine's prophylactic and, if it was to be employed in the future, to which standard would it be required to conform; and whether Mr. Haffkine was to be reinstated or not.—Mr. Morley replied, by written answer: After giving the case my careful attention I am not prepared to institute another inquiry into a question which has been exhaustively examined by two impartial and independent bodies, and respecting which no conclusion can be arrived at with absolute certainty. The prophylactic continues to be manufactured at the Bombay Plague Laboratory. As is stated in the Government of India Press notice, dated Dec. 13th, 1904, the "standard method" of preparing the fluid has been reverted to, the fluid being sterilised by methods approved by the Indian Plague Commission and containing the requisite proportion of carbolic acid. The latest report of the laboratory states that inoculation is now extensively employed without any untoward results and I do not propose to take any action with regard to it. Mr. Haffkine's position was explained in the answer which I gave to the question asked by the honourable Member on March 19th, 1907. If he elects to return to India he will be employed on research work at a salary equal to that of which he was in receipt when he left India.

### *Medical Inspection of School Children.*

After 11 o'clock at night,

Mr. McKenna moved the second reading of the Education (Administrative Provisions) Bill, which contains a clause relating to the medical inspection of school children. In intimating that if in committee any proposal contained in the Bill was objected to by the official opposition he would not proceed with the clause containing it, the right honourable gentleman said that Clause 10, which related to the medical inspection of school children, was the same clause as was introduced as a separate Bill by Mr. Walter Rea. That Bill had already received the complete approval of the House and was now awaiting third reading. For that reason he need not enlarge on Clause 10, which he hoped would receive the support of all parties in the House.

Sir William Anson said he most cordially supported the clause with regard to medical inspection.

Sir Henry Craik, in criticising the various provisions of the Bill, said that if they were to throw upon local authorities the duty of inspecting school children in this respect and were to make that inspection effective they must give systematic direction and force to the work from the central department. If this was to be a Government scheme it ought to be a scheme much more perfect and scientific and more on a level with the provisions which existed in other countries.

Sir Francis Powell expressed a hope that the clause providing for medical inspection would become law this session.

The Bill was then read a second time.

## THURSDAY, AUGUST 1ST.

### *Defaulting District Councils.*

Mr. Weir asked the President of the Local Government Board to state the names of the 12 district councils against which complaints were made during the years 1905 and 1906 in respect of default in the performance of their duty as required under Section 299 of the Public Health Act, 1875.—Mr. Burns replied (by written answer): The names of the district councils whose cases were dealt with in the two years are as follows: In 1905, Dunmow rural, Eastbourne rural, Epsom rural, Penybont rural, and South Darley urban; and in 1906, Bromley rural, Cricklade and Wootton Bassett rural, Dunmow rural, Eastbourne rural, Hebburn urban, Lymington rural, and Rye rural. The cases of the Dunmow and Eastbourne rural district councils, which were partially dealt with in 1905, were further dealt with in 1906.

### *The Carshalton Hospital.*

Mr. Cooper asked the President of the Local Government Board what was the annual amount of the interest, sinking fund, and cost of maintenance of the hospital for convalescent fever patients erected by the Metropolitan Asylums Board at Carshalton; whether the consent of the Local Government Board had to be obtained before the hospital could be erected; if so, whether any inquiry was made by the Local Government Board into the necessity of such hospital, and also the suitability of the site; and whether, as the hospital was unused, and there was great want of asylum accommodation in the county of London for imbecile and harmless senile lunatics, he would consider the advisability of requiring the Metropolitan Asylums Board using this hospital for such a purpose.—Mr. Burns furnished the following written reply: The annual charge in respect of the items referred to is in round sums as follows:—Interest, £7500; repayment of principal, £8000; cost of maintenance (about), £2000. The debt is repaid by equal annual instalments of principal, so that the charge for interest diminishes each year. The consent of the Local Government Board had to be obtained to the erection of the hospital. Before any consent was given a public inquiry was held by inspectors of the Board, at which the need for the hospital and the suitability of the site were considered. The question of the use of the hospital for other purposes than that for which it was provided has not been lost sight of either by the Board or the managers, and it will be again considered as soon as circumstances permit, but until the existing prevalence of fever has abated it is thought desirable that the accommodation afforded by this hospital should be held in reserve. I have promised to continue to give attention to the matter, but meanwhile I am glad to learn that the demands on the managers in respect of imbeciles and harmless senile lunatics are not such as to point to any great want of accommodation for this class at the present time.

### *The Belfast Health Commission.*

Mr. Sloan asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that no member of the Health Commission sitting at Belfast was a veterinary surgeon or other person equally qualified to examine meat and dairy inspectors, with the result that the Commission had been unable to enter fully into the diseases of animals transmissible to man; whether, seeing the interest the public were now taking in the necessity of pure food and milk, he could see his way to have a veterinary surgeon or some other person with equal qualifications appointed as Local Government Board inspector to advise local authorities on such matters; and if not would he consider the advisability of transferring this work to the veterinary branch of the Board of Agriculture —Mr. Birrell replied (by written answer): It is the fact that no veterinary surgeon has been appointed to the Commission referred to, but the two Local Government medical inspectors and the medical officer of health of Glasgow who are on the Commission appear to be eminently fitted to deal with questions of milk- and meat-supply. Local authorities have power to appoint as inspectors veterinary surgeons to advise them upon these questions. I am not aware of any reason for transferring public health duties to the Department of Agriculture.

### *Food and Meat Inspection in Ireland.*

Mr. Sloan asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to a meeting of the Royal Sanitary Institute held a few days ago at Douglas, where Sir Charles Cameron, medical officer of health of Dublin, stated that the central body should itself carry out, or insist on the local authorities carrying out, a more complete inspection of food and meat; and whether, in view of the resolution that was passed at a meeting of the Veterinary Medical Association in Belfast on July 26th to the effect that such inspection should be conducted only by trained veterinarians he could say what steps, if any, he proposed to take in the matter.—Mr. Birrell gave the following written reply: The honourable Member has sent to me a newspaper report of the proceedings referred to but the official report has not yet been issued. The Local Government Board has received a copy of the resolution passed by the Veterinary Surgeons' Association in Belfast. Under the law as it stands the appointment of inspectors of food and meat rests with the local authorities and they have full power to appoint veterinary surgeons in that capacity.

## FRIDAY, AUGUST 2ND.

### *Public Health (Regulations as to Food) Bill.*

On the motion for the second reading of the Public Health (Regulations as to Food) Bill, Mr. G. J. Cooper moved as an amendment that the Bill should be read a second time this day three months. He went on to say that it would make a drastic change in the law by transferring to the Local Government Board the whole control of the regulations dealing with food. It would place all food except drugs and all drinks except water under regulations to be made by the Local Government Board. There was no security that those regulations would be submitted to Parliament.

Mr. Watt, in seconding Mr. Cooper's amendment, regretted that the Local Government Board did not propose to give any notice as to any one of the regulations for the destruction of food, however drastic, which they should make under the Bill. They would deal with the importation, preparation, storage, and distribution of articles of food and drink without giving notice to the people affected. Such a principle he believed had been seldom assented to by the House of Commons. He was strongly of opinion that such regulations should be laid before both Houses of Parliament for 40 days before they came into effect.

Mr John Burns asked the House to give a second reading to this useful, necessary, and too long delayed measure. It would make up deficiencies in existing Acts of Parliament by giving the Local Government Board controlling powers over the condition, preparation, storage, and distribution of human food which was peculiarly liable to become unsound. At present the Public Health Acts empowered a medical officer of health or an inspector of nuisances to examine meat or other articles of food if exposed or deposited for purposes of sale or in preparation for sale, and a magistrate could condemn such food if it were diseased or unwholesome. Penalties might be imposed on the persons in whose premises it was found. That provision, however, was insufficient to protect public health. The defect in the existing law was that foods on their way to be sold or prepared could not be touched, because they were not, in the language of the Act, "exposed for sale" for human consumption. The position could be best illustrated by a concrete instance. At the conclusion of the South African war a large quantity of tinned foods sent out for the use of the army was sold. So bad was the reputation of this food in South Africa that no one would think of touching it. It was shipped back to England and although it was known to be in a shocking condition it could not be seized at the port of landing because it was not exposed for sale. It came to London, and to the credit of the firm who originally prepared it and sold it, and who, of course, were not responsible for the condition into which it had fallen by lapse of time, they informed the Local Government Board of the circumstance, because they feared that if the food were sold with their name on the packages their reputation would suffer enormously. The

Local Government Board, however, had no power to seize the food. All it could do was to try to persuade the person who bought it not to put such stuff on the market, and this it succeeded in doing, with the result that the stuff was destroyed. The authorities ought not to be in this helpless condition. He contended that if a cargo of unsound food arrived in this country it ought to be in the power of the medical officer at the port to say that it should not be put upon the market. If this power existed not only would the poor be protected from the consequences of eating such food but small shopkeepers would be saved from the risk of having their reputations ruined through being prosecuted for exposing it for sale. Under the present Bill the Local Government Board would be able to stop such food at the port of entry. Only two port sanitary authorities at present—those of London and Manchester—had the power to deal effectively with food on landing, but this Bill would place Liverpool, Glasgow, and all the other towns in the same position and enable the port sanitary authority to inspect articles of food at the port, to take samples, and to destroy unsound articles. The regulations would also require satisfactory evidence as to the antecedents of the food such as was demanded by Germany, Denmark, and many other countries. They would insist upon the authorities knowing the conditions under which food was prepared, especially articles like sausages, brawn, and other things mainly consumed by the poor. Food would have to be stored in a clean and decent place. For example, ice-cream in process of preparation should not be kept under a bed or near a lavatory. Further, with regard to the distribution of food the regulations would insist that the receptacles, waggons, and other means of transport should be kept cleaner than they now were. Under existing conditions a medical officer was unable to go where he could obtain the information as to what went on in the preparation of food for human consumption, though it was well known that there were places in which food was prepared under the most insanitary conditions. Mr. Burns then quoted passages from a number of reports submitted by medical officers of health in support of the case for the Bill. One report from Finsbury stated that meat actually diseased, chiefly offal and veal, was imported even from countries where inspection took place. If the whole of this unsound food had been placed in waggons and transported from Finsbury to Battersea medical officers could not have stopped it in process of transit because it was not exposed for sale for human consumption. Another report stated that there were two vanloads of tinned meat in a very bad condition. When analysed the meat was found to be not cattle or sheep but horseflesh from Hamburg. Honourable Members could now realise what happened to the poor horses often seen in the streets of London going to the docks to be shipped abroad, and coming back after an interval as canned goods. In December, 1906, there were, according to the report of another medical officer of health, 11,000 tins of mixed food, the contents of which were putrid and unwholesome. The food was saturated with tin. The medical officer of Marylebone described a consignment of unsound meat in which the liver was filled with parasites and abscesses. The Lancet, which deserved the greatest praise and credit for the way in which it had pressed the Government to do something in the direction proposed by the Bill, had said in an article in its issue of June 15th, 1907: "The trade in diseased meat and putrid milk, to say nothing of adulterated food-stuffs, will never be put an end to until the vendors are treated as the poisoners which they really are." He could give instance after instance to prove the truth of the comments of The Lancet. He could give instances of human food treated with boric acid and so on. Therefore, he asked the House to give the Local Government Board not only the power to stop the sale of unsound meat but to enable the medical authorities to do legally what they could only now do by permission and bluff, amounting almost to intimidation. Proceeding to deal with the way in which the food of the poor was stored in some districts, he quoted official reports from the East End of London. These reports, set out that the sausage and brawn factories, mostly owned by Germans, were dilapidated places, badly lit, and often infested with rats. In another instance beef was received in a filthy passage and hung on hooks against a filthy wall. Pickling tubs were placed in low-lying cellars; ice-cream was prepared in an open shed near a lavatory; and 70 cases of enteric had resulted from food which had been in a bedroom where children were suffering from that fever. Instances had been found where food was kept in the vicinity of a stable. He therefore appealed to the House to give his department power under the Bill to deal with this terrible evil. Whether tinned food came from Australia, Canada, the United States, Liverpool, or elsewhere, all dealers and manufacturers ought to be made to toe the line of one medical and sanitary standard. The right honourable gentleman went on to quote from a report made by Dr. G. S. Buchanan on tinned foods and that report showed that some of the food he examined contained bone and gristle, hog's bristles, and human hairs, and was dirty in addition. It might be said that since the recent exposures concerning tinned meat things had been put right and that there was no need for panic. Well, he could have got this Bill when the panic was at its height but he had thought it better to allow the panic period to pass before he brought it forward. He was satisfied that however perfect things might be now there was a strong probability that they would relapse to where they were. In proof of this he would read the following report which had been forwarded to him from a source which he would not now name. "I have the honour to inform you that I am told by the German Consul that the American meat packers have informed his Government that they are willing to agree to any inspection of meat required, on condition that what was rejected by the German officials is returned to them as it can be sold in the United Kingdom." He was not going to have that sort of thing. If we did not have the regulations provided for by the Bill there was the possibility that food rejected at German ports as unfit would be sent on by shippers to the United Kingdom. He was not going to allow diseased horseflesh to be sold in this country as "best Piccadilly brawn." This country ought not to take what other European countries would not take. He could give the House further instances to prove every statement he had made. All the local authorities were in favour of the Bill. He asked the House to give the Local Government Board power to make regulations and let the regulations be communicated to every sanitary authority. The regulations would not be enforced for 28 days after issue except in cases of emergency, so as to give all the interests affected time to make representations to the Local Government Board if they felt prejudiced by them. During those 28 days he would lose no opportunity of consulting with the trade. He hoped that in the interests of the consumers of the £40,000,000 worth of food that came annually into the country the Local Government Board would be given the powers embodied in the Bill. None but the dishonest trader in unsound food and the dirty manufacturer would have any reason to complain of the simple, necessary, and, he hoped, effective regulations that would be made.

Sir Francis Powell observed that the right honourable gentleman had made out a complete case for his Bill and he hoped that it would be placed on the statute book this session.

Sir Walter Foster doubted if the machinery proposed by the Bill was adequate to deal with the magnitude of the evil described by the President of the Local Government Board. Food inspection to be carried out thoroughly and efficiently would necessitate hundreds of inspectors being employed and paid out of the rates. Under the existing law local authorities could have inspectors to attend markets and prevent diseased cattle from being sold and killed for food. Unfortunately local authorities would not help in this way. He hoped that the department would take steps to see that the local authorities were kept up to their work.

Mr. Cave believed that the President of the Local Government Board had made out a very strong case for a Bill of this kind, but he urged that care should be taken that the regulations only applied to unsound food or the manufacture of food under insanitary conditions. He was afraid that the right honourable gentleman had effectually destroyed the appetite which any of them might have left for *pâté de foie gras* or for ice-creams.

Replying to other speakers, Mr. Burns said that he was quite willing to turn the 28 days into 40 days and was prepared to lay the regulations on the table of the House for that period.

Mr. Cooper on this assurance withdrew his amendment.

The Bill was then read a second time and committed to the whole House.

### Tuesday, August 6th.

*Belfast Health Commission.*

Mr. Devlin asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the probable date on which the report of the Belfast Health Commission would be issued; and whether it was proposed to issue any *ad interim* report.—Mr. Birrell replied (by a written answer): I understand from the chairman of the Commission that the report will probably not be ready before the end of September. It is not proposed to issue an interim report.

*Exemptions from Vaccination.*

In answer to Mr. Lupton, Mr. John Burns said: The number of certificates of conscientious objection to vaccination received by vaccination officers in 1906 was 52,391.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

Arnott, W., M.B., B.S. Lond., has been appointed House Surgeon at the General Infirmary, Leeds.

Benthall, Albert, F.R.C.P. Edin., M.R.C.S. Eng., has been appointed by the Secretary of State under the Workmen's Compensation Act, 1906, a Medical Referee for Circuits Nos. 40 and 42.

Burton, C. F., M.R.C.S. Eng., L.S.A., has been appointed by the Shipping Federation Examining Officer of Seamen at Whitby under the Compensation Act.

Davidson, Thomas, M.B. Edin., has been appointed House Surgeon at the Stockton and Thornaby Hospital.

De Souza, D. H., M.B., B.S., B.Sc. Lond., has been appointed Demonstrator in Physiology at the University of Sheffield.

Gough, A., M.B., Ch.B. Leeds, has been appointed House Surgeon at the General Infirmary, Leeds.

Greenwood, F. G., M.B. Cantab., has been appointed House Physician at the General Infirmary, Leeds.

Rodriques, N. Joseph, L.R.C.P. & S. Edin., has been appointed Assistant House and Visiting Surgeon to the Stockport Infirmary.

Tinley, W. E. F., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act in the Whitby District.

Walker, M. G. L., M.B., Ch.B. Leeds, has been appointed Junior Resident Ophthalmic Officer at the General Infirmary, Leeds.

Wrangham, W., M.D. Lond., has been appointed Honorary Assistant Physician to the Bradford Royal Infirmary.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

Barnsley, Beckett Hospital.—House Surgeon. Salary £100, with board and lodging.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £100 per annum, with board and lodging.

Bath, Bailbrook House.—Medical Superintendent. Salary £450 per annum, with extra payments, board for self and wife if married, quarters, laundry, and attendance.

Bedford County Hospital.—House Physician. Salary £60 per annum, with apartments, board, and laundry.

Birmingham General Hospital.—Three Receiving-room Officers. Salary £150 per annum.

Birmingham, Queen's Hospital.—House Physician. Also Obstetric and Ophthalmic House Surgeon for seven months. Salaries at the rate of £50 per annum, with board, lodging, and washing.

Bournemouth, Royal Victoria Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Bradford Sanatorium for Consumptives, Eastby, near Skipton.—Resident Medical Officer. Salary £100, with rations, apartments, and washing.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board and lodgings.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon; also Resident Casualty Officer. Salaries at rate of £50 per annum, with board, lodging, and washing.

BURY INFIRMARY.—Junior House Surgeon. Salary £80, with board, residence, and attendance.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CAIRO, SCHOOL OF MEDICINE (EGYPTIAN GOVERNMENT, MINISTRY OF EDUCATION).—Assistant to the Professor of Pathology. Salary £E. 320 per annum.

CANCER HOSPITAL, Fulham-road, S.W.—Two Assistant Anæsthetists. Honorarium of 25 guineas each.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

COLCHESTER, ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

DEVON COUNTY ASYLUM.—Assistant Medical Officer. Salary £140, with board, apartments, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

DOVER, ROYAL VICTORIA HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board, lodging, and washing.

EGYPTIAN GOVERNMENT, KASR-EL-AINY HOSPITAL.—Resident Medical Officer. Pay £250 a year, with quarters, servants, washing, coals, and light.

GLASGOW DISTRICT ASYLUM, Woodilee, Lenzie.—Assistant Medical Officer. Salary £135 per annum, with board, lodging, &c.

GLOUCESTER, GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HUDDERSFIELD INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Third House Surgeon. Salary £50 per annum, with board, attendance, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Assistant Medical Officer (non-resident).—Salary £100 per annum.

MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £100 per annum, with board, lodgings, and washing.

NORTHAMPTON, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum, rising to £500, with reasonable carriage expenses.

PRESTWICH, MANCHESTER, COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150, increasing to £250, with board, apartments, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROCHDALE INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Demonstrator of Comparative Pathology and Bacteriology.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £65 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Residents' Senior House Surgeon. Also Junior House and Visiting Surgeon, unmarried, for six months. Salary of Senior at rate of £90 per annum, and of Junior £70 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and residence. Also Junior Assistant House and Visiting Surgeon. Salary £40 per annum, with board, washing, and residence.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons, tenable for six months.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer, unmarried. Salary £140, rising to £160, all found.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Cheltenham, in the county of Gloucester.

# Births, Marriages, and Deaths.

## BIRTHS.

LISTER.—On August 4th, at Devonshire-place, W., the wife of W. T. Lister, F.R.C.S., of a son.

UNDERHILL.—On August 1st, at Castle View, Newport, I.W., the wife of S. V. H. Underhill, M.R.C.S., L.R.C.P., of a son.

WELLS.—On July 27th, at Ashworth Mansions, Elgin-avenue, W., the wife of John H. Wells, M.B., B.S., of a son.

## MARRIAGE.

MCCREA—WATSON.—On July 30th, at St. Mary's, Wargrave, John McCrea, B.A., M.B., B.Ch., to Alice Cradock, daughter of the late William Spencer Watson, M.B., F.R.C.S.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

### A LONDON JURYMAN AND THE SCOTCH FORM OF OATH.

AT an inquest recently held at Stepney in the east of London considerable amusement was caused by the remarks of a juryman, evidently bewildered by the novelty of the position in which he found himself. A medical man who had been called to give evidence was sworn in the Scotch fashion, holding up his hand, whereupon the following dialogue ensued:—The juror: What's that for? Why can't he kiss the book like others (laughter)?—The coroner (Mr. Godding): That is the Scotch oath.—The juror: But he ain't a Scotchman (laughter).—Coroner: Anyone who prefers it may be sworn in that manner. In your second remark you are not quite correct, for the witness is a Scotchman.—The juror: Is he? Well he doesn't look like one.—The witness: The coroner is quite right.—The juror: Why, you don't talk like one either. The juror evidently expected a Scotchman to wear a kilt and talk Gaelic.

### MICROSCOPICAL APPARATUS.

MICROSCOPISTS will find a variety of useful hints in a descriptive catalogue of accessory apparatus for the microscope just issued by Messrs. R. and J. Beck, of 68, Cornhill, London, E.C. In addition to a profusion of illustrations there are directions for using some of the apparatus, such as the observing prism, which enables an object to be viewed directly with the eye and focussed in a micrographic camera at the same time, a finder for use on the ordinary plain stage, the Ehrlich eyepiece for use in making blood counts, various micrometers, and Grayson's test rulings up to 120,000 lines to the inch, and photographic cameras adapted both for the horizontal and the vertical position. At the end hints are given on general microscopic illumination.

### AN INTERESTING ROYAL WARRANT.

Messrs. Alexander Robb and Co., the well-known manufacturers of Robb's Nursery Biscuits, have been appointed infant food manufacturers to the Royal Household of Spain under a special warrant from King Alfonso XIII., dated May 29th, 1907.

◆

*Constant Reader.*—The danger must be so small as to be negligible for practical purposes, but medical science does not assert that there is no conceivable risk.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Lecture:—Dr. Low. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**TUESDAY** (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Mr. Pardoe: Treatment of Urethral Stricture.

**WEDNESDAY** (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Scott: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Moullin: Pelvic Hæmorrhage.

**THURSDAY** (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**FRIDAY** (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.—Clinical Lecture:—Dr. Davis.

**SATURDAY** (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Scott: Diseases of the Eye. 2.30 P.M.: Operations.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, August 8th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 2 | 30·13 | W. | ... | 121 | 74 | 53 | 53 | 58 | Overcast |
| " 3 | 29 90 | S.W. | 0·34 | 120 | 72 | 56 | 59 | 60 | Raining |
| " 4 | 29 90 | S.W. | ... | 125 | 77 | 60 | 69 | 74 | Fine |
| " 5 | 29·84 | S.W. | ... | 110 | 76 | 57 | 63 | 66 | Overcast |
| " 6 | 29·80 | W. | ... | 126 | 71 | 57 | 58 | 62 | Cloudy |
| " 7 | 29·98 | W. | 0·10 | 115 | 71 | 53 | 54 | 59 | Fine |
| " 8 | 30 04 | S.W. | ... | 96 | 68 | 57 | 58 | 61 | Cloudy |

**During the week marked copies of the following newspapers have been received:**—*Liverpool Daily Post and Mercury, Surrey Advertiser, Yorkshire Post, Herefordshire Mercury, Newcastle Daily Chronicle, Manchester Guardian, Manchester Dispatch, Hull Mail, Manchester Chronicle, Daily Telegraph, Army and Navy Gazette, Westminster Gazette, Glasgow Evening Times, Glasgow Herald, Literary Digest, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Messrs. Aked and Aked, Lond.; Messrs. Armbrecht, Nelson, and Co., Lond.; Dr. John Hill Abram, Liverpool; Atkin's Filter Engineering Co., Lond; Ayr District Asylum, House Steward of; Messrs. Andrus and Andrus, Lond.; A. G. C.; A. E. G., Lond.; Mr. J. W. Arrowsmith, Bristol; Mr. Algernon Ashton, Lond.; The Earl of Arran, Lond.

**B.**—Mr. T. C. Bell, New York; British Medical Benevolent Fund, Lond., Hon. Secretary of; Dr. Fletcher Beach, Kingston Hill; Bedford County Hospital, Bedford, Secretary of; Messrs. T. B. Browne, Lond.; British Institute of Social Service, Lond., Secretary of; Mr. H. Jeaffreson Brewer, Lond.; Dr. F. Bagshawe, St. Leonards-on-Sea; Beckett Hospital, Barnsley, Hon. Secretary of; Sir T. Lauder Brunton, Lond.; Dr. J. S. Byrne, Cinderford; Messrs. Burroughs, Wellcome and Co., Lond.; Dr. B. M. Bernheim. Louisville, U.S.A.; Messrs. W. H. Bailey and Son, Lond.; Bristol Royal Infirmary, Secretary of; Messrs. C. Barker and Sons, Lond.; Dr. Reginald Broadbent, Huddersfield; Mr. Rupert Bucknall, Lond.

**C.**—Mr. Harrison Cripps, Lond.; County Asylum, Prestwich, Medical Superintendent of; Messrs. Cleaver and Co., Lond.; Chelsea Hospital for Women, Lond., Secretary of; Dr. C. Campbell-Horsfall, Cheltenham; Dr. Myer Coplans, Leeds; Dr. R. H. Cole, Lond.; Christian Science Publication Committee, Lond.; Mr. F. W. Clarke, Manchester; Charles Urban Trading Co., Lond.; Dr. G. H. Colt, Lond.; Earl Cawdor, Lond.

**D.**—"Doctor." Lond.; Devonshire Hospital, Buxton, Secretary of; Dr. Lovell Drage, Hatfield.

**E.**—Mr. A. R. Elliott, New York.

**G.**—Dr. A. R. Gunn, Edinburgh; Glasgow University, Clerk to the; Messrs. W. and A. Gilbey, Lond.; Mr. B. B. Gough, Compton Martin; Glasgow Royal Infirmary, Secretary of; Dr. W. Gordon, Exeter.

**H.**—Mr. W. Holder, Hull; Messrs. Hasserodt and Co., Lond.; Messrs. Harrison and Sons, Lond.; Messrs. Henderson and Son, St. Andrews; Dr. W. J. Howarth, Derby; Dr. Gustav Hamel, Homburg; Professor R. Tanner Hewlett, Lond.

**I.**—International Health Association, Lond., Manager of.

**J.**—Sir Alfred L. Jones, Liverpool; Professor Ernest Jendrassik, Budapest; Jeyes' Sanitary Compounds Co., Lond.

**K.**—Dr. Colin King, Newmarket; Dr. C. F. Knight, Edinburgh; Mr. M. P. Kerrawalla, Brighton; Dr. W. F. Kay, Bicester; Kalakankar, Rajah of, Fort Kalakankar, Oudh, India; Messrs. R. A. Knight and Co., Lond.; Mr. Samuel Knaggs, Huddersfield.

**L.**—Mr. H. K. Lewis, Lond.; Leeds University, Registrar of; Loughborough and District Hospital, Secretary of; Mr. Henry Lamond, Glasgow.

**M.**—Mr. John D. Marshall, Lond.; Medical Assurance Society, Lond.; Mr. R. Mosse, Berlin; Maltine Manufacturing Co., Lond.; Medico-Psychological Association, Epsom, Hon. General Secretary of; Dr. S. G. Moore, Huddersfield.

**N.**—Messrs. Nicolay and Co., Lond.; *North West Medicine*, Seattle, Editor of; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.

**O.**—Osborne-Peacock Co., Manchester; Octogenarian.

**P.**—Mr. Y. J. Pentland, Edinburgh; Messrs. Peacock and Hadley, Lond.; Messrs. J. and J. Paton, Lond.

**R.**—Dr. J. B. Ryley, Lond.; Messrs. E. J. Reid and Co., Lond.; Royal Victoria Hospital, Bournemouth, Secretary of; Royal Victoria Hospital, Dover, Hon. Secretary of; Royal Society of Medicine, Lond., Hon. Secretaries of; Miss E. M. Ruttledge, Bassaleg; Royal Albert Hospital, Devonport, Secretary of; Dr. W. Ford Robertson. St. Abb's; Mr. J. A. Radcliffe, Leeds; Dr. Arthur Robinson, Birmingham.

**S.**—Mr. H. B. Symons, Oxford; Dr. D. Soares, Cascaes, Portugal; *South Wilts Mirror*, Salisbury; Messrs. Salamon and Co., Rainham; Seamen's Hospital Society, Lond., Secretary of; Smith's Advertising Agency, Lond.; Star Manufacturing Co., Lond.; Sheffield University, Registrar of; Dr. Schulte. Dortmund; Sheffield Royal Infirmary, Secretary of; Messrs. A. Siebert and Co., Lond.; Scholastic, Clerical, &c., Association, Lond.; Messrs. G. Street and Co., Lond.; Dr. Lauriston Shaw, Patterdale; Second International Congress on School Hygiene, Lond., Hon. General Secretary of; Professor W. Stirling, Manchester.

**T.**—Dr. W. Pickett Turner, Lond.; Mr. Hugh Taylor, Llandovery; Mr. Alexander R. Tweedie, Nottingham; Mr. William Tibbles, Nottingham.

**U.**—University College, Bristol, Registrar of; University College, Dundee, Secretary of; Mr. T. Fisher Unwin Lond.

**W.**—Dr. J. W. Weir, Engcobo; Mr. W. A. Wharram, Leeds; Mr. R. Walker, Aberdeen; Worcester County, &c. Asylum, Powick, Medical Officer of; Inspector-General Thos. E. H. Williams. R.N., Lond.; Messrs. A. J. Wilson and Co., Lond.; Dr. Chalmers Watson. Edinburgh; Dr. C. Gordon Watson; Mr. Ainslie Walker, Lond.; Messrs. H. Wilson and Son, Lond.; Dr. A. Wilson, Wanganui, New Zealand.

**Y.**—York County Hospital, Secretary of.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. R. Aubrey, Brent Knoll; Apollinaris Co., Lond.; A. J. A.; Messrs. Allen and Hanburys, Lond.; A. E. M.; A. L

**B.**—Mr. E. Blatchley, Lond.; Bolton Infirmary, Secretary of; British Union for the Abolition of Vivisection, Lond., Secretary of; Birmingham General Hospital, House Governor of; Lieutenant F. E. Bissell, R.A.M.C. Portsmouth; B. O. R.; Messrs. Burton, Goldsmith and Co., Lond.; Colonel G. Burrard, Yarmouth, Isle of Wight; *Barrow News and Mail*, Manager of: Dr. T. C. Beeler, Checotah, U.S.A.; Bury Infirmary, Secretary of;

**C.**—Dr. S. G. Corner. Lond.; Mr. Augustus Caesar, Chilham; Cornwall County Asylum, Bodmin, Clerk of: C. B.; Dr. S. G. Champion, Bournemouth.

**D.**—Mrs. E. M. Davis, Newcastle-on-Tyne; Devon County Asylum, Exminster, Clerk of; D. F. S.; D. C.

**E.**—Mr. J. Evans, Maidstone; Mr. W. McA. Eccles, Lond.; Dr. C. Enfield, Jefferson, U.S.A.; Emerson Shoe Store, Lond.; E. A. F. W.

**F.**—Mr. W. J. Furnival, Stone; F. R.

**G.**—Mr. S. G. Gordon, Newry; Dr. J. A. K. Griffiths, Knighton; G. H. L.; Dr. G.; Gloucester General Infirmary, Secretary of; Great Eastern Railway Co., Lond., Manager of.

**H.**—Mr. S. G. Halls, Leytonstone; Mr. P. B. Hoeber, New York; H. N. T.; H. F. B.; Dr. Hurd-Wood, Tilford; Mr. G. Hughes, Chatham; Mr. J. J. Harding, Ballincollig.

**I.**—Ingham Infirmary, South Shields, Secretary of; Mr. C. B. Ingham, Eastbourne; Lieutenant-Colonel Irvine, R.A.M.C., Farnham.

**J.**—Dr. W. Jamieson, Abercynon; J. W.; J. M.; J. M. G.; J. C.

**K.**—Messrs. J. Keele and Co., Lond.; Messrs. S. Kutnow and Co., Lond.

**L.**—Dr. W. W. Lynch, Sherbrooke, Canada; Dr. J. H. Lightbody, Bexhill-on-Sea; Locum Surgeon, Coxhoe; Dr. R. Cranston Low, Edinburgh; Messrs. J. Lyon and Co., Lond.; Dr. J. Lambie, Leicester.

**M.**—Mr. T. McMurray, Mansfield; Mr. M. D. Makuna, Trealaw; M. K. L.; M. A. K.; M. B. J.; M., Nigg; Male and Female Nurses' Cooperation, Lond.; Mr. F. H. Mountstevens, Bristol; Middlesbro' Corporation, Town Clerk of; M. G.

**N.**—North Staffordshire Infirmary, Stoke-on-Trent, Secretary of; National Provident Institution, Lond.; Newcastle-on-Tyne Corporation, Treasurer of.

**O.**—Ockley Sanatorium, Medical Superintendent of.

**P.**—Dr. C. Pole, Edinburgh; Dr. F. W. Pavy, Lond.; Miss Pearce, Banff; Mr. F. J. Pearson, Owston Ferry; Dr. D. Wells Patterson, Newcastle-on-Tyne.

**R.**—Mr. H. M. Riley, Leicester; Royal Buckinghamshire Hospital, Aylesbury, House Surgeon of; R. A.; Reo Motors, Ltd., Lond.; Rousay Parish Council, Clerk of; Mr. C. A. Ryde, Brussels.

**S.**—Dr. E. C. Seaton, Lond.; Dr. T. C. Somerville, Portland; *South Wales Argus*, Newport; Mr. P. Singer, Lond.; S. N.; Dr. P. Smith, Tredegar; Dr. G. C. Simmons, Sacramento, U.S.A.

**T.**—Miss A. Taylor, Edinburgh; T. L. B.; Mr. J. Thin, Edinburgh; Dr. E. G. Trevithick, Cheltenham.

**V.**—Staff-Surgeon A. H. H. Vizard, R.N., Bermuda.

**W.**—Mr. J. Williams, Bradford; Rev. A. W. Watson, Churt: W. L.; W. E. S.; *Wilts and Gloucester Standard*, Cirencester, Secretary of; W. J. B.; Wand Manufacturing Co., Leicester; Dr. E. Walker, Huddersfield; Walsall and District Hospital, Secretary of.

**Y.**—Dr. R. A. Yeld, Lond.;

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s*. 6*d*.; per additional 8 words, 6*d*.

Quarter Page, £1 10*s*. Half a Page, £2 15*s*. An Entire Page, £5 5*s*.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.

# A Lecture

ON

# THE PRINCIPLES OF VACCINE-THERAPY.

*Delivered before the Harvey Society of New York*

By Sir A. E. WRIGHT, M.D. Dub., F.R.S.,

SOMETIME PROFESSOR OF PATHOLOGY, ARMY MEDICAL SCHOOL, NETLEY; DIRECTOR IN MEDICAL CHARGE OF THE DEPARTMENT FOR THERAPEUTIC INOCULATION, ST. MARY'S HOSPITAL, LONDON, W.

## INTRODUCTORY.

GENTLEMEN,—I have undertaken to outline to you to-night —so far as I can do so within the limits of a single lecture— the principles of vaccine-therapy—i.e., of the treatment of bacterial disease by the inoculation of the corresponding vaccines. Let me preface what I have to say to you on this subject by asking you briefly to review with me the methods —other than vaccine-therapy—which we have to-day at disposal for the treatment of bacterial disease. The following are, I think, the only methods which come here into consideration: (1) treatment by chemical antiseptics; (2) treatment by the extirpation of the obtrusive focus of infection; (3) treatment by the determination of lymph to the focus of infection; (4) serum-therapy; and (5) expectant treatment.

## 1. TREATMENT BY CHEMICAL ANTISEPTICS.

Antiseptics have found in medicine a threefold application. They have been locally applied with a view to holding in check and extinguishing localised bacterial infections. They have been used for the purpose of checking putrefaction in discharges and devitalised tissues. They have been administered internally with a view to checking microbial growth in the blood or in regions which can be reached only by the channel of the blood. Neither the second nor the third of these applications calls for any discussion. There has never been any doubt as to the possibility of suppressing putrefactive changes by antiseptic irrigations. And it is now all but universally recognised that it is futile to attempt to check bacterial growth in the interior of the organism by antiseptics which have—as our present antiseptics have—a greater affinity for the constituent elements of the body than they have for any bacteria.[1] Attention may therefore here be concentrated upon the issue as to whether the antiseptic applications are effective in holding in check and extinguishing localised bacterial infections.

It is, of course, currently believed that this method of treatment is effective. It is in this faith that the surgeon introduces antiseptics into septic wounds or, where he happens to be so minded, into abscess cavities. It is in this faith that the physician resorts in the case of pulmonary infections to antiseptic inhalations. And it is in this faith that the dermatologist, gynæcologist, laryngologist, aurist, and genito-urinary specialist are each strenuous—in the application of antiseptics to the particular province of the body which he takes under his care. It will be profitable for us to collate the facts and to consider whether there is in reality any trustworthy basis for the belief that inspires all this practice.

Significant in this connexion appears to me the fact that antiseptics are now by general consent abandoned in connexion with the treatment of ordinary surgical wounds. Significant also is it that the practice of introducing antiseptics into abscess cavities—erstwhile so common— is now less and less frequently resorted to. Significant, again, is it that treatment by antiseptics in case of bacterial invasions of mucous membranes is to-day more and more frequently followed up by curetting, scraping, and so-called 'radical' operations. Above all significant, is it that so distinguished a dermatologist as Sabouraud should sum up the results of antiseptic treatment of bacterial diseases of the skin as follows: "Curious, indeed, is the failure of antiseptics in connexion with the treatment of bacterial diseases of the skin. Quite colossal were the expectations which were entertained with regard to what would be effected. What has actually been accomplished by antiseptics amounts in point of fact to almost nothing." The results which have been obtained in connexion with pulmonary infections by antiseptic inhalations and in connexion with bacterial infections of the genito-urinary passages by 'urinary' and other antiseptics are, I am persuaded, neither better nor worse than those which have been obtained in connexion with diseases of the skin.

Now all this failure of antiseptics is, I submit, only what might *a priori* have been expected. Let me put the case to you as I see it. It is, of course, axiomatic that antiseptics can take effect only upon those bacteria with which they come into contact. It is obvious also in the case of bacterial infections of the skin and mucous membranes that the infecting bacteria will not all be lying on the surface, and that they will not, when lying on the surface, be limited with respect to their distribution to those regions which are accessible to antiseptics. It follows that it will be quite unreasonable to expect from any application of antiseptics a complete sterilisation. In every case a residue of bacteria will survive. These will inevitably multiply and reoccupy the disinfected surface.

And this is not all. The antiseptic will not, as the unthoughtful assume, add its antibacterial power to the antibacterial power of the living organism. On the contrary, the antiseptic will directly antagonise the protective forces which the living organism has at command. It will paralyse the phagocytes, and will abolish the antibacterial power of the blood fluids. The disinfected surface will thus, by the action of the antiseptic, be left 'swept and garnished,' to await reoccupation by the expropriated bacteria.

And, again, this is not all. The antiseptic application will also injure the histological elements and, in particular, the capillaries of the tissue to which it is applied. It will thus lead to an outpouring of lymph from the disinfected surface. That outpouring will not only wash away the antiseptic, but it will, where a skin surface is in question, convert the natural dry keratin armour of the normal epidermis into a sopping, lymph-sodden blanket in which bacteria will easily establish themselves.

## 2. TREATMENT BY THE EXTIRPATION OF THE OBTRUSIVE FOCUS OF INFECTION.

In the case where the invading bacteria have penetrated into the interior of the body their destruction by antiseptic applications will be obviously out of question and the policy of proceeding against the bacteria by surgical methods will come up for consideration.

I can understand that extirpation may be imperative where an organ has been completely disorganised by invading bacteria and where there is danger to life from the spread of the infection. I can understand, also, that a case can be made out for extirpation where there is prospect of removing all the infecting bacteria without danger or sensible mutilation. Lastly, I can understand that it will be an added advantage if an extirpation operation removes along with the infecting bacteria a useless organ which is specially subject to infection. But assuredly these are not the conditions under which the majority of scraping and extirpating operations are undertaken. And in particular these are not the conditions which confront us in those extirpation operations which are employed as a routine treatment in connexion with localised tuberculous infection. Here long before the surgeon has been called upon the scene many of the bacteria may, by the agency of the blood and lymph stream, have been carried beyond reach of his knife.

It will be clear that it cannot be claimed for extirpation operations undertaken in these circumstances that they are in any real sense of the term 'radical operations.' They are operations which aim only at the extirpation of one or more obtrusive foci of infection. In harmony with this conclusion is, I submit, the fact that tuberculous disease so often recurs after operation—exceptionally, in the form of general tuberculosis; commonly, as a localised process in the site of the operation, or elsewhere. Such results would at first sight appear to be adequately explained by the mechanical disturbance in the focus of infection, or by the incomplete character of the operation. But probably there is at work here also another factor. A reduction in the antibacterial power of the blood may, as we shall see, supervene upon operative interference.

## 3. TREATMENT BY THE DETERMINATION OF LYMPH TO THE FOCUS OF INFECTION.

The method of extirpation by the knife is only one of the methods which can be employed for the treatment of bacterial

---

[1] We have a general formula for such antiseptics when we say, in technical terms, which perhaps improve a little on those of Ehrlich, that they are more "histotropic" than "parasitotropic."

No. 4381.

infections when these have passed beyond the reach of antiseptic applications. Of the other methods the more important are the application of hot fomentations, the evacuation and drainage of abscess cavities, massage, the methods of Bier and Klapp, and the various forms of radiotherapy. In all of these methods—and it is this which has induced me to bring them together here under a single heading—we have, as a prime factor, a determination of lymph from the circulating blood to the focus of infection; and, as a secondary factor, a conveyance into the circulating blood of a lymph which has in passing through the focus of infection impregnated itself with bacterial products.

I shall, before I have done, explain to you, in connexion with the passage of blood fluids into the focus of infection, that these blood fluids will exert in every case some antibacterial effect upon the invading bacteria; and, in connexion with the passage of bacterial products from the focus of infection into the circulation, that these products will effect very important modifications in the blood both in the direction of reducing and in the direction of increasing its antibacterial power. There are thus *a priori* grounds for expecting useful therapeutic effects from each and all of these methods. It is in your knowledge that such useful therapeutic effects are every day achieved. There are, however, also, as you will already have appreciated, *a priori* grounds for expecting that there will occasionally result from the application of these methods not only failure but disaster. It is familiar matter to you that these methods are often ineffective. You know also that disaster has followed massage, the venous congestion of Bier, and radiotherapy. It will presently become clear that disaster may on *a priori* grounds be expected wherever, by the application of these methods, bacterial products are introduced into the blood in immoderate quantities.

### 4. SERUM-THERAPY.

All the therapeutic methods which have been in question above have application only to localised bacteria invasions. Serum-therapy has more ambitious aims. After a successful application in connexion with the treatment of diphtheria this method has—and this without intermediary trial in connexion with simple, localised, and correspondingly more tractable forms of infection—been applied to the treatment of the most desperate and complicated varieties of bacterial infection. Serum-therapy has, as you know, found application not only in connexion with septicæmic infections but also in those most complex mixed infections which we have to deal with in pulmonary phthisis. In these applications serum-therapy has, I submit, everywhere disappointed expectation.

It is not enough to realise the fact of failure. Wherever, in connexion with the application of any therapeutic method, we meet with repeated failure we are called upon to make a critical regress upon the facts and inquire into the rationale of our method. We are, in accordance with this principle, here required to consider whether there is any assured basis for the treatment of bacterial infections by serum-therapy.

Serum-therapy is, in point of fact, built upon the postulate that the animal organism possesses the capacity of responding to the incorporation of practically unlimited quanta of bacterial cultures by a practically unlimited output of antibacterial substances. Now this assumption, while it might be thought to win support from the analogy of the effective immunising response which occurs where diphtheria or tetanus toxin is incorporated into horses, is, as I hope presently to show you, entirely out of accord with the results which are ordinarily obtained by the inoculation of bacterial cultures. When you shall have considered how different are the ordinary everyday events which supervene upon bacterial inoculations from that miracle of immunisation which accomplishes itself when diphtheria toxin is administered to a horse, you will, I believe, be quite prepared to recognise that we have no justification for the assumption that there will result from the introduction of a moderate quantum of serum into a patient's blood anything in the nature of a marked increase of his antibacterial power.

### 5. EXPECTANT TREATMENT.

I now come to the expectant method of treating bacterial disease, the last of the five therapeutic methods which were enumerated at the outset of this paper. We have, as you appreciate, in the expectant treatment a therapeutic method which is based upon the adoption of a policy of non-intervention as between the invaded organism and the invading bacteria: a therapeutic method which commits the destiny of the patient—so far as that destiny is involved in the issue of his conflict with the invading microbes—entirely into the hands of chance.

We are all agreed that by this method, which consists essentially in feeding and nursing the patient and keeping him at rest in bed, far better results are achieved in generalised bacterial infections than any that could be obtained by active medication. We need only to call to mind here the fact that from 80 to 90 per cent. of recoveries are under the expectant treatment achieved in typhoid fever.

There is, however, also a reverse to the medal. We have in the case of typhoid fever from 10 to 20 per cent. of fatal cases. We have in streptococcal septicæmias and in plague—to mention only two out of the more formidable bacterial infections—a mortality in comparison with which the percentage of recoveries is quite insignificant. Further, we have in Malta fever a considerable percentage of cases in which the fever drags out almost indefinitely.

This indictment of failure—of failure in connexion with septicæmic diseases—is very far from being the only indictment which can be brought against the expectant treatment. Let me ask you to realise that generalised bacterial infections are, comparatively speaking, rare and transient incidents in life. The really serious ills of life are the various localised bacterial infections which sooner or later fasten upon every man, never afterwards releasing their hold. It follows from this that a graver allegation is brought against the general value of a method of treating bacterial disease when it is alleged that such method has no application in connexion with localised bacterial processes, than when it is pointed out, as it has been here in connexion with the expectant treatment, that it is a method which utterly disappoints in many varieties of generalised infection.

Now the graver charge of having no application in connexion with localised bacterial diseases may be brought against the expectant method of treatment. It is only, if I rightly apprehend the matter, in the case where life is threatened by the entrance of bacteria or bacterial products into the blood—and, as we shall see later, not even invariably in that case—that nature addresses herself in a serious manner to the task of immunisation. As long as a bacterial invasion is still strictly localised nature seems to oppose to it nothing more than a passive resistance. It follows that it is idle in connexion with localised infections to wait upon nature and to expect from her any work of immunisation. I am wont to insist that the statistics of the expectant method of treatment in the case of localised bacterial infections are hardly more favourable than those of the Pool of Bethesda. You will remember, in connexion with that Pool, that an angel was wont to come down and trouble the waters *once* in seven years, and that, after that event, the man who stepped down *first* into those waters was cured. You will, I believe, not fail to see how the facts are mirrored to us in this comparison if you will take any series of cases of endometritis, middle-ear disease, chronic bronchitis, lupus, or let it be any other localised bacterial disease, and will elicit in connexion with each case the term of years during which the infection has persisted. I myself can call to mind, from among the patients I have under treatment, no fewer than three who have suffered from lupus each for a period of over 40 years.

## PRINCIPLES OF THE METHOD OF VACCINE-THERAPY AND SKETCH OF THE MACHINERY OF IMMUNISATION.

Having now passed in review with you the therapeutic methods which are in use in the treatment of bacterial disease, I propose to turn to the main theme of my discourse and to deal with the treatment of bacterial disease by vaccine-therapy. The essential feature of this method is the scientific exploitation for therapeutic uses of the protective machinery with which the organism is equipped. We shall do well here to turn our attention for a moment to a study of that machinery.

There are two elements which come into consideration in connexion with the protection of the organism against invading micro-organisms—the leucocytes with their digestive ferments constitute one of these elements; the antibacterial substances in the blood fluids constitute the other. A word or two will be appropriate in connexion with each of these elements of our protective machinery.

(*a*) *Leucocytes.*—The leucocytes come into consideration in connexion with resistance to bacterial infection by virtue of the fact that they are capable of ingesting bacteria and of disintegrating these by intracellular digestion. We may usefully distinguish between '*spontaneous*' and '*induced*' phagocytosis. By the former of these terms we may denote that process of ingestion which comes under observation when bacteria which have not been subjected to the action of the blood fluids are brought in contact with washed leucocytes in an indifferent medium such as physiological salt solution.

*Spontaneous phagocytosis* as here defined is distinguished by the fact that it is a comparatively slow process; further, by the fact that the number of bacteria ingested by each leucocyte attains ordinarily only very modest proportions; again, by the fact that the ingestion is irregular in the sense that individual polynuclear leucocytes differ very strikingly from their congeners with respect to their intake of bacteria—the majority picking up from such a bacterial suspension as is ordinarily employed very few, if any, bacteria, while others ingest relatively considerable numbers; and lastly, by the fact that the ingestion of bacteria can be completely suppressed by employing in the phagocytic mixture certain concentrations, in the case of the tubercle bacillus a concentration of slightly over 1 per cent., of NaCl.

Strikingly different from such 'spontaneous phagocytosis' is the *induced phagocytosis* which comes under observation when leucocytes are brought in contact with bacteria which have been, or actually are at the moment, subjected to the action of serum. The 'induced phagocytosis' which occurs in these conditions is distinguished, first, by the fact that it is an exceedingly rapid process; secondly, by the fact that every adult leucocyte, with hardly an exception, is here phagocytic (instead of some few leucocytes taking part immoderately, while the others abstain); thirdly, by the fact that the leucocytes will, in the case where the supply of micro-organisms is unrestricted, ordinarily fill themselves to absolute repletion; and fourthly, by the fact that the leucocytes will continue to ingest bacteria in a concentration of salt which entirely suppresses 'spontaneous phagocytosis.'

Seeing that phagocytosis of bacteria without subsequent intracellular digestion would, from the point of view of the protection of the organism, be meaningless, it will be plain to you that the digestive powers of the leucocytes would logically here come up for consideration. Into such discussion I am, however, for the present debarred from entering, not having as yet qualified myself to speak at first hand on the matter. Permit me none the less to give here my tribute of admiration to the brilliant initiating work which has been done on this subject by your fellow member, Dr. Opie.[2]

(*b*) *Antibacterial elements of the blood fluids.*—The blood fluids differ essentially from the nutrient fluids which are ordinarily employed by the bacteriologist for the cultivation of micro-organisms in the respect that, while the latter are nutrient fluids pure and simple, the blood fluids contain in addition to nutrient constituents also antibacterial elements.

The antibacterial elements which are here in question are "bacteriotropic elements" in the sense that they turn towards and enter into combination with elements of the bacterial body. Our knowledge of the modifications which are effected in the bacterial body under the influence of the bacteriotropic substances in the blood fluids is, it cannot be doubted, extremely incomplete. So much, however, already stands fast that the effect of the blood fluids upon the bacterial body may manifest itself in different ways. The bacteria may be killed without being dissolved. The bacteria may not only be killed but dissolved. We may group these together as bactericidal and bacteriolytic effects. The bacteria may be so altered as to agglutinate in the presence of salt (agglutination effect). The bacteria may be so altered as to be readily ingested by phagocytes (opsonic[3] effect).

Inasmuch as the blood fluids produce in bacteria the different chemico-physical effects here enumerated, and inasmuch as agglutinating and opsonic effects can be obtained independently of each other, and independently of any bactericidal and bacteriolytic effects, we may assume that we have in the blood fluids in addition to bactericidal substances (or bactericidins) and bacteriolysins also agglutinins and opsonins. Of these four varieties of bacteriotropic substances the opsonins appear to be the most important. We may ascribe to them a predominating importance, first, because it can be shown that the opsonic effect is, by either the normal or immune blood, exerted upon every species of bacteria, whereas the agglutinating effect is exerted only upon special varieties of bacteria, and the bactericidal and bacteriolytic effect among pathogenic micro-organisms apparently only upon the typhoid bacillus and the cholera vibrio.

The opsonins derive further practical importance from the fact that they can be very accurately measured (the error of estimation in the case of normal bloods and in the hands of a good worker being rarely greater than plus or minus 5 per cent.) and that it is possible, seeing that the opsonic effect of the normal blood fluids is very marked, to register not only (as in the case of the agglutinating power) an increase but also a reduction in the opsonic power of the blood. Such increase and reduction in the opsonic power of the blood are, as you will of course understand, measured by comparing the amount of purely induced phagocytosis which is obtained with a normal blood with the amount of purely induced phagocytosis which is obtained with the blood of the patient under examination.

From the consideration of the protective machinery of the organism let me now turn to the consideration of certain preliminary points in connexion with the bacterial vaccines which operate upon that machinery. The first question which confronts us here is the question as to how far the success of an inoculation process is dependent upon the particular composition of the vaccine. I have in view here in speaking of the particular composition of the vaccine not the axiomatic requirement that it must be affiliated to, or connected by affinity with, the microbes which it is designed to combat, but rather the minute details with regard to its source and manufacture.

### THE QUESTION AS TO HOW FAR THE PARTICULAR COMPOSITION OF THE VACCINE IS A MATERIAL ELEMENT IN THE SUCCESS OF AN INOCULATION PROCESS.

Reflection will make clear that the success of an immunisation process must depend, in the first place, upon the power of immunising response which the organism may happen to possess with respect to the particular bacterial infection or intoxication process which is in question, and, in the second place, upon (*a*) the composition of the vaccine and (*b*) the dosage and method of administration. Up to the present the composition of the vaccine has been considered to the practical exclusion of the question of dosage. Whenever ill-success has attended a process of immunisation, or whenever it has appeared to any one that it "ought" to be possible to improve upon the result already obtained; straightway the suggestion has been put forward that some change "ought" to be made in the composition of the vaccine. In such cases living vaccines have been proposed as substitutes for sterilised vaccines; vaccines derived from virulent cultures as substitutes for vaccines derived from avirulent cultures; vaccines derived from cultures more closely affiliated to the microbes against which protection is sought as substitutes for vaccines obtained from cultures less closely affiliated; vaccines derived from agar cultures for vaccines obtained from broth cultures; and vaccines obtained by the trituration of bacteria, by autolysis, or treatment by caustic alkalies and subsequent precipitation with acids, as substitutes for vaccines which have been sterilised in the ordinary way by heat.

---

[2] Since the date of this lecture I have corroborated the results of Opie and have found a method of displaying his results by the aid of leucocytes obtained from blood drawn from the finger. It may perhaps be of interest to subjoin here the technique I have employed. It is modelled upon the inoscopic methods of Jousset. A capillary pipette which is fitted with a rubber teat is taken in hand. A puncture is now made in the finger, and one volume of blood—a quantity of from 10 to 20 cubic millimetres is quite adequate for our purposes—is aspirated into the stem of the pipette. We now, filling up each time to the same mark, aspirate into the pipette four equal volumes of distilled water, and mix these four volumes of water with the one volume of blood in the neck of the pipette. By this manœuvre we hæmolyse all the red corpuscles, leaving the white corpuscles intact. We now place the pipette in an incubator at blood heat and keep it there for some ten or more minutes. The diluted blood will now have coagulated in the neck of the pipette. Our next step is to fill in another pipette with physiological salt solution and to project this in the form of a stream upon the coagulated blood. We continue this process till the clot has contracted firmly upon the white corpuscles which are held in suspension in its meshes, and till every trace of serum has been washed away. We now remove the last traces of our wash water and fill into the pipette a quantum of liquefied 20 per cent. gelatin equivalent to twice the original volume of blood. Finally, we seal up the tube in an air-tight manner and place it in an incubator regulated so as to maintain a temperature of about 50° C. After an interval of from 24 to 48 hours we find that the clot has undergone autodigestion and that the gelatin surrounding the clot has lost its power of solidifying on cooling. We verify, in the case of a control-tube which has been treated in exactly the same manner except in the respect that it has received a small addition of serum. that these changes do not occur in the presence of serum. The whole procedure is of course carried out in an aseptic manner.

[3] Derived from the Greek οψωνεω, and the Latin opsōno,—*I convert into palatable pabulum.*

It has been claimed in connexion with each of the modifications here in question that its employment is dictated both by weighty *a priori* considerations and analogies and by the event of actual experiments. Of the *a priori* considerations and analogies which have been adduced I will consider only the contention that living vaccines ought to be preferred to vaccines which have been sterilised by heat on the ground that inoculations with the former furnish close analogies with actual infections which are known to confer immunity, whereas there are no such close analogies between these last and inoculations with vaccines which have been subjected to the action of heat. To this I could rejoin that even supposing the temperature of boiling water, which the objector has here in view, to produce in a bacterial culture chemical changes as fundamental as those produced by that temperature in egg-albumin, a temperature which just suffices for sterilisation might quite well leave the chemical constitution of a bacterial culture for all practical purposes unaltered, just as there is a temperature, short of the coagulating temperature, which will, when applied to a hen's egg, prevent germination, leaving the chemical characters of its albuminous substances substantially unaltered.

If I refrain from all attempt to meet with analogical reasonings of this kind the many other suggestions which have been put forward in connexion with the constitution of bacterial vaccines, it is because I hold that in scientific controversy the proper procedure is always either to bring proof of a contested proposition, or to make *tabula rasa* by demonstrating that such proof is not forthcoming.

Now analogical reasonings cannot supply proof; nor can they, seeing that no argument from analogy can ever be effectively discredited by the production of any conflicting analogy, restore to us that *tabula rasa* which is ever, next after assured knowledge, the most excellent intellectual possession.

Quite other are our 'returns of profit' where we proceed by the pathway of reasoning from experiment. By this path we arrive always at some intellectual good. Where we find a contested conclusion to rest upon a firm basis of experiment, we are entitled to incorporate it in a definitive manner into our corpus of knowledge. Where we find a flaw in the chain of reasoning we are entitled to reject and put far from us the conclusion as we do so—recovering for future exploitation unencumbered foundations.

Allow me, in view of these general considerations, to turn to the experimental evidence, and let me try to show you that the reasoning which has been held to establish that a vaccine of a particular composition is more effective than a vaccine of somewhat other composition has in every case been inconclusive.

Let us begin by realising that where an animal which has been inoculated with a particular vaccine succumbs to a test inoculation this result does not establish the conclusion that the vaccine which was employed is ineffective. It establishes only, either that the vaccine was ineffective; or, that the dosage was ill chosen; or that the test inoculation was ill-timed; or that the test inoculation was excessive; or that two or more of these factors were at fault. *A fortiori*, where comparative experiments are undertaken upon two animals or upon two different sets of animals with different vaccines, and where one of these survives while the other succumbs to the test inoculation all that has been established is that the one vaccine employed in a particular dose $x$ has at the date of the test inoculation conferred a greater measure of protection than another vaccine employed in another dose $y$. Now it is obvious that unless we have assurance that the doses $x$ and $y$ which have been employed in the comparative experiments represent the optimum doses of these vaccines (or doses which stand in each case in the same relation to those optimum doses) we can have no assurance that the survival or non-survival of our animals is determined by the difference in the vaccine and not by a difference in the dose. Now no serious attempt has ever been made to employ in comparative experiments exactly equivalent doses of competing vaccines.

There has thus, in the course of our study of the question as to how far the particular composition of the vaccine is material to the success of an inoculation process, come to light the fact that we are not yet in a position to affirm that one variety of vaccine possesses an advantage over another from the point of view of its power of conferring immunity. It has also become clear that no progress can be made in the resolution of this ulterior question until we have settled the preliminary questions as to how the equivalent doses of two vaccines can be arrived at, and as to how the immunising efficacy of a bacterial inoculation can be most effectively tested. So material are a comprehension and a resolution of these issues to the understanding of the principles of vaccine-therapy that I need not make any apology for embarking upon their consideration.

## What is the Best Method of Measuring the Immunising Effect produced by the Inoculation of a Bacterial Vaccine?

The method of test inoculation—i.e., the method of inoculating a living culture into an animal which has been previously treated with a vaccine and of comparing the result obtained in this animal with the result obtained on a control animal inoculated with a similar test dose of living culture—has hitherto been accepted as a perfectly satisfactory method of gauging the immunising effect of a vaccine. While it is undeniable that this method supplies in the case where the vaccinated animal survives and the control animal succumbs a satisfactory proof of the immunising power of the vaccine, it may in the case where the vaccinated animal succumbs deceive us in deepest consequence. Where the test inoculation has been undertaken with an excessive quantum of the living culture we may fail to register the acquirement of a quite considerable measure of protection. Again, when the test inoculation follows hard upon the inoculation of the vaccine the animal may, and we shall presently see the explanation of this, succumb as rapidly as, or even before, the control animal without any fault being attributable to the vaccine. In fact, the more rapid death of the vaccinated animal after a premature test inoculation may, paradoxical as this may at first sight appear, be in reality indicative of the potency, instead of the impotence, of the vaccine.

It is clear, if these things are so, that there may quite well be a more excellent method of gauging the immunising effect of a vaccine than that which is furnished by judging by the event of a test inoculation. Reflection will show that if we can take it as assured—and I submit that we can—that the machinery of immunisation is, at any rate in its broad features, understood, and if it is indubitable—as in point of fact it is—that the phagocytic reaction of the leucocytes and the content of the blood in antibacterial substances can be measured with a degree of accuracy which is sufficient for all practical purposes, and if by means of these quantitative methods it is feasible to construct curves showing the march of events and the changes which are associated with the inoculation of a bacterial vaccine, it must be possible by the aid of such curves to gauge in a more accurate manner than by any test inoculation the immunising effect of a vaccine, and to determine in the case of any two vaccines what are the doses which produce precisely equivalent effects. The method of vaccine-therapy which is here in question proceeds upon these assumptions. It postulates that we have in the curves which set forth changes in the bacteriotropic power of a patient's blood, and in particular in the curves which set forth changes in the opsonic index of his blood, a record of blood changes which exert in every case a dominating influence upon that patient's bacterial infection. I am, let me assure you, very sensible of the fact that justification for these generalisations can be afforded to you only by the gradual accumulation of evidence. Allow me, however, pending the time when such evidence shall have accumulated in your hands, to forestall events and to endeavour to call up before you by the aid of this immunisation chart a picture of the facts which were elicited by my fellow worker Captain S. R. Douglas, I.M.S., and myself in connexion with a case of localised staphylococcus infection which was successfully treated by the inoculation of staphylococcus vaccine.

## Increased Phagocytic Response is associated with Successful Immunisation, and this Increased Phagocytic Response is Dependent upon an Increase in the Opsonic Power of the Blood Fluids and not upon an Increased Capacity for Spontaneous Phagocytosis on the Part of the White Corpuscles.

The immunisation chart which I here display will furnish to you a typical illustration of the achievement of increased phagocytic response in association with successful immunisation. The phagocytic power of this patient's blood was when he came under treatment for an aggravated localised staphylococcus infection equivalent, as you see in the chart, to less than half that of a normal man. You here see that his power of phagocytic response was by the agency of successive inoculations of a staphylococcus vaccine augmented till it was equivalent to nearly three times that of a normal man.

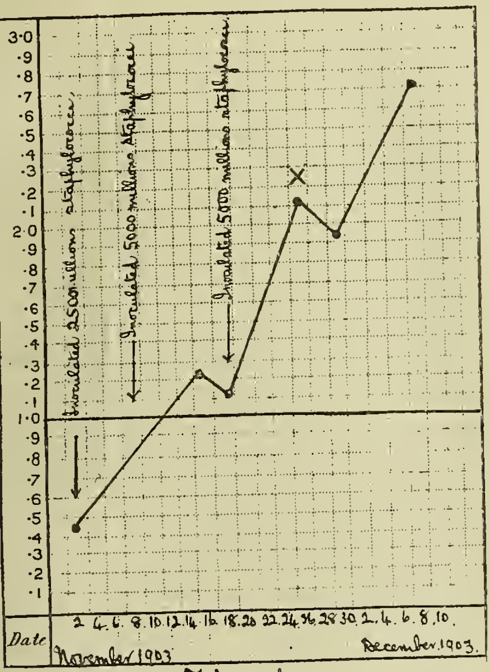


Fig. 1.

Immunisation-chart of a case of staphylococci sycosis treated by inoculations of a staphylococcus vaccine.

At the point which is indicated by an *x* upon the chart—and the clinical condition of the patient had by this time improved in a marvellous manner—an investigation was set on foot with a view to determine whether the increased phagocytic response which had been achieved was referable to an increased power of spontaneous phagocytosis on the part of the white corpuscles, or to an increased opsonic power in the blood fluids. In order to decide between these two alternatives a duplicate series of tests was instituted. In the experiments of Series I. washed corpuscles prepared from the patient were tested (*a*) in association with his own serum and (*b*) in association with the serum of the normal man who served a control. In the experiments of Series II. the washed blood corpuscles of the normal man who served as a control were tested (*a*) in association with the immunised patient's serum and (*b*) in association with his own serum. In each case the technique was that which I have elsewhere described, the same amount of the same staphylococcus suspension being in each case introduced into the mixture of corpuscles and serum. The phagocytic counts which were obtained under these circumstances were as follows:—

| | Phagocytic count (i.e., average number of microbes ingested by each P.W.B.C.). |
|---|---|
| *Series I.* | |
| (*a*) Washed *corpuscles* of the *immunised patient* employed in association with the *serum* of the *immunised patient* ... | 25·7 |
| (*b*) Washed *corpuscles* of the *immunised patient* employed in association with *serum* of the *normal man* who served as control ... ... ... ... ... ... ... ... | 13·0 |
| *Series II.* | |
| (*a*) Washed *corpuscles* of the *normal man* who served as control employed in association with the *serum* of the *immunised patient* ... ... ... ... ... ... | 28·2 |
| (*b*) Washed *corpuscles* of the *normal man* who served as control employed in association with the *serum* of the *normal man* ... ... ... ... ... ... ... ... ... | 13·0 |

What now do we learn from these phagocytic counts? We learn from a comparison of the phagocytic counts in experiments (*a*) and (*b*) in Series I. that the serum is a factor which profoundly influences phagocytosis. It does not emerge from a comparison of the two phagocytic counts, Series I. (*a*) and (*b*), inasmuch as here in each case the same variety of leucocytes was employed, whether or not the phagocytic count can be influenced by the variety of leucocytes. A comparison of the phagocytic counts (*a*) and (*b*) of Series II. once more shows that phagocytosis is influenced by the variety of serum. And, again, for the same reason as before, a comparison of these two phagocytic counts leaves it unresolved as to whether phagocytosis can be influenced by the variety of leucocytes which is employed.

From consideration of the all but complete identity of the phagocytic counts obtained in Series I. (*a*) with the count obtained in Series II. (*a*), and again from the identity of the phagocytic count obtained in Series I. (*b*) and Series II. (*b*), it clearly emerges that the phagocytic count is uninfluenced by the variety of corpuscles employed. In short, the whole experiment teaches us that the changes which are associated with the acquirement of immunity are changes in the blood fluids and not changes in the white corpuscles. This conclusion, in addition to its theoretical interest, has also, be it remarked, an absolutely fundamental practical importance. It will make it clear that we may take the opsonic index of any blood as an index of the patient's power of phagocytic response.

(*To be continued.*)

---

# An Address

ON

# MEDICAL SCIENCE AND SCHOOL HYGIENE.

*Delivered at the Opening of the Section of Physical Education and Training in Personal Hygiene at the International Congress on School Hygiene in the University of London on August 6th, 1907,*

BY SIR JOHN W. BYERS, M.A., M.D., M.CH., M.A.O. (HON. CAUSA) R.U.I.,
PRESIDENT OF THE SECTION.

LADIES AND GENTLEMEN,—My first duty is to thank the organising committee of this great International Congress on School Hygiene—the first to be held in the British Empire—for the honour it has conferred upon me in appointing me to preside over one of the sections, and that the important one "Physical Education and Training in Personal Hygiene."

In reference to the subjects to be discussed in this section it would, indeed, be difficult to calculate what the British nation owes to two men who lived about the same period, who were intimate friends, and who each in a very marked way influenced the other in regard to all that is involved in the promotion of health of body and soundness of mind. I refer to Thomas Sydenham, the "Prince of English Physicians," the man who first correctly taught that medicine as a practical science depended upon close and accurate observation, who always advocated as a fundamental principle in its study an appeal to experience, and who achieved such a reputation that the great Dutch physician, Boerhaave, was accustomed to take his hat off whenever he mentioned his name and to style him "Angliae lumen, artis Phoebum, veram Hippocratici viri speciem." I refer also to Sydenham's friend, John Locke, the philosopher, who, largely owing to his sound judgment, exercised enormous influence over Sydenham and taught him the supreme value to a physician of that priceless gift—common sense. It was in no small degree owing to the personal sway of these brilliant men that towards the end of the seventeenth century there gradually took place a change in English thought in the direction of scientific research and the philosophy of common sense.

### JOHN LOCKE, THE PIONEER OF SCHOOL HYGIENE.

In his very interesting treatise on "Some Thoughts concerning Education," published in 1693, Locke wrote: "A sound mind in a sound body is a short but full description of a happy state in this world. He that hath these two has little more to wish for, and he that wants either of them will be but little the better for anything else." More than two centuries have passed since this most suggestive essay of Locke appeared and yet nothing has ever been written which brings out more clearly what should be the aim of physical education in our schools than the words which I have just quoted, written by the man who may fairly be described as the founder of school hygiene in England. At the present time, while the greatest interest is being taken in every department of education, it is a noteworthy and remarkable fact that people are coming to see that there is a very close association between education and the health of the people, that the axiom that there cannot be a healthy state in this world without health of body and mind was never more true than in the existing condition of society; in other words, it is at last beginning to dawn upon the public that it is absolutely essential that medical science must be more and more associated with the machinery of teaching. This most important principle—that is, the close relationship between medical science and the instruction of the young—has a very direct bearing upon both teacher and taught.

### INFLUENCE OF MEDICAL SCIENCE ON TEACHER AND PUPIL.

At the present time in the world's history we are no longer content that a teacher of the youth of a nation should be one who simply hears lessons in a catechetical way and who guides his pupils in the ordinary routine of school studies; we *expect* that those who instruct children should have themselves passed through a training school or college where they have learned not merely the theory of education in all its branches but have acquired a knowledge of the common principles of bodily health and also of the methods of placing this information before children, and have been taught to observe and recognise those physical defects and mental weaknesses in their pupils which may require special care and attention. We also consider that our teachers should have a knowledge of the various systems of physical culture and be able to show some prowess in games, while from the point of view of the pupil modern opinion demands that the health of the children should in no way suffer while at school—nay, more, that the children should be instructed while there in the fundamental laws of elementary hygiene which, if acted upon, will help to make them useful and healthy citizens of the State. Indeed, one of the most remarkable tendencies of our modern education is the desire to make the school not only of use but a real pleasure in training boys and girls more and more in the practical side of life, in developing initiative, and in fostering self-reliance, and especially in instructing them in the direction of how to keep healthy.

Now, if we look at what has been taking place of late in the most advanced nations of the world we shall be struck with the fact that ideas as to the relationship of the public schools to medical science have gone through a most interesting process of evolution. The first step in this developmental movement was taken with the object of preventing schools becoming centres of infectious or contagious disease, then followed the effort to supply to the children while in school a hygienic environment, that is, school-rooms properly seated, lighted, heated, and ventilated, and with no overcrowding. This in turn was succeeded by a demand for medical inspection of children, both on their entrance to the schools and during their subsequent school career in order to ascertain whether they were fit to go to school—that is, in a word, whether their physical condition was compatible with their being benefited by the instruction which they will require, and, if so, whether their sojourn in school was causing or increasing certain diseases, such as curvature of the spine, rickets, tuberculosis, anæmia, &c., and whether their apparent dulness, short-sightedness, deafness, or headaches, might not depend on preventable causes (eye, ear, and throat). Another great advantage of medical examination of school children would be that it would afford opportunities to obtain accurate scientific records of the measurements of the physical development of the body, in regard to such points as height, weight, chest capacity, and the like. We would thus arrive at approximate anthropometric standards and be able to observe if children were normal for their age, and also to ascertain in the case of the undersized whether their undeveloped condition was, from the associated history, probably due to hereditary or prenatal causes or to faulty rearing, improper nourishing, bad housing, unhealthy environment, or malnutrition. In this way facts would soon be collected which would have an important bearing on the question of physical racial degeneration. The latest stage in this evolutionary process in school life is the effort that is now being made to promote the physical health and development of the child.

### PHYSICAL EDUCATION IN SCHOOLS.

Now this condition of vigour and good health, so far as the school is concerned (for the teacher can do little to settle that most serious coexisting public problem—the influence of the home environment), may be brought about, or rather an attempt may be made to solve the question, by various means.

1. The children while at school should be taught, both by example and by precept, the simplest rules of how to live, the necessity for fresh air and for pure water, and for healthy homes, and the relative nutritive value of the various kinds of food which are ordinarily used. They should be instructed in the simple and ordinary laws of health and temperance and in the importance of such matters of personal hygiene as cleanliness, the care of the skin, including the hair and nails and of the mouth and teeth (not more than 3 per cent. of all children of school age have sound teeth), how to deal with sudden emergencies, and how much can be done to prevent the onset and spread of infectious disease. There is no doubt that in schools with gymnasia personal hygiene can be best taught as it can be practically demonstrated there; that attention to the care of the body brings about that most desirable condition which is called "feeling fit." Girls should be taught the elements of cooking at school by practical lessons as well as the principles of housekeeping; and seeing that we now compel them to attend school, and in this way deprive them to a large extent of that home experience and personal contact with infants which was more the rule formerly, it is surely incumbent to see that they are taught those elementary truths as to the care of infants that all girls from ten to 13 years of age might know. I am fully convinced that the time has arrived when, if we are to put a stop to those conditions which bring about physical degeneration, especially in our large towns, and if we are to solve fully many pressing public health problems, such as the terrible wastage of infant life, as well as the survival of numbers of them with a poor physique and a weak constitution, and the preventable deaths caused by consumption, children in the primary schools should be instructed in hygiene and temperance. In order that this shall be carried out properly facilities should be afforded to the teachers for special training in these subjects, and finally, hygiene and temperance should be not only included in the curriculum of studies, but they should be reported upon by the inspectors of the schools. I trust that as a result of what will be brought before us at this great Congress by experts from all parts of the world England will, in the language of the Prince of Wales, "wake up" to her duty towards her school children.

2. The children should be made to do exercises both in the school and in the adjacent gymnasium, if there is one attached to the school. Nothing is more valuable for children who so often are kept for long periods in a cramped position than what are called the deep breathing exercises (which stimulate the circulation through the internal organs) combined with those movements which bring into play the muscles which move the spine backwards. When such exercises are engaged in by the pupils for a period varying from three to five minutes at the end of each hour, or even at the termination of every two hours in the schoolrooms (the windows of which should be open), they are of enormous value in quickening the circulation, in using up more oxygen, and in counteracting the deleterious effects of the school-desk and of a too long rest in one position or attitude.

3. Lastly, the children must be instructed in physical education and have time for games and athletic exercises. We want our children to be so trained physically that each faculty of the body may be fully developed, and this can be done (*a*) by those methods employed in Swedish schools, which consist mainly of movements without the use of any apparatus or musical accompaniment, which tend to develop groups of correlated muscles; (*b*) by gymnastic exercises and musical drill at the schools, and dancing in the case of girls; (*c*) by games in the open air, either in school playgrounds (and no school should be now constructed without them) or in athletic fields; and (*d*) by swimming when baths are available. In cities where there are public baths these might be utilised, and I am pleased to say that in my own

city, Belfast, the corporation (through its baths and lodging-house committee) recently made arrangements to admit schoolboys under 12 years of age, when accompanied by a teacher, free to the swimming ponds one day in each week, and it has requested the Commissioners of National Education in Ireland to empower the principals of the primary schools in Belfast to arrange that children attending these schools can avail themselves of these facilities during school hours.

### PHYSICAL EXERCISES AND GAMES.

It would be a useless waste of time to discuss which of these plans is the better system of physical culture for children. My own opinion is that a combination of all of them will give the best results, each plan being suited to particular types of pupils and climatic conditions, and it is well to make young people realise that the use of physical exercises will prepare them all the better for being proficient in games and athletics. There can be no doubt that games do not train enough all the muscles of the body and perhaps do not give the same amount of strength as exercises, yet, on the other hand, games (which on medical grounds must not be compulsory on every boy and girl and which should be varied, properly selected, and judiciously supervised) do something more than increase bone and muscle and produce strength. They tend—in addition to bringing about a state of good health—to lay the foundation of mental and moral qualities which were of the greatest importance alike to the individual and to the community, and young people who worked together in the athletic or playing fields learned to "play the game"—that was, to sink their own personal ends or ambitions for the sake of the cricket eleven, or football or hockey team, of which they constituted only a part. In the athletic field a boy was trained to submit to discipline or even self-sacrifice (and sacrifice for a good cause was one of the noblest laws of life), and to obey his captain who was more experienced and had greater skill. The game-playing boy soon saw by the decision of the umpire that there were two ways of looking at a question—the interested or personal, and the scientific or unbiassed. A prig (that is, "a fellow," as George Eliot defines him, "who is always making you a present of his opinions") could not exist in such an environment. He also observed that a player apparently doing little in a distant part of the field often illustrated the truth of the words, "They also serve who only stand and wait," while by and by, if he himself became proficient, he in turn was selected as leader and had to maintain the prestige and position of his school. In such circumstances a boy learned (what was so important for him in the future) not merely to govern himself for the sake of his fellows but also to govern them in turn with tact and without friction. Games, as Mr. Alfred Lyttelton has recently pointed out in his address at Dulwich College, enabled boys to gain a command over their temper, and when played in the true spirit tended to develop such desirable qualities as courtesy and generosity to opponents. It was in this way that those who engaged in games at school gradually became possessed of gifts which must be of countless value in after life in training them to comprehend what was the real meaning and what was the proper object of citizenship, for one of the highest functions of a school was to send out those who had studied within its walls equipped in every respect, so as to be able to render that social service which the State might demand of them—in other words, to be good citizens of the Empire.

While urging the importance of physical education, let me say it must not be overdone either in the case of boys or girls; rather it must be regarded simply as a necessary and useful adjunct to the cultivation of the mind. They heard at present a great outcry against athletics, but it was not the athletics which did the mischief but all the publicity and noise and professionalism (with its attendant evils) associated with them. That gifted parodist, Mr. Owen Seaman, the editor of *Punch*, has well brought out the objectionable features of present-day athletics:—

> "Yet in a hundred scenes, all much the same,
> I know that weekly half a million men
> (Who never actually played the game)
> Hustling like cattle herded in a pen,
> Look on and shout,
> While two and twenty hirelings hack a ball about."

What we want is our boys to play games as recreations, not as means of living, so as to make them better equipped for the struggle of life which is before them.

I believe that if the children of our public schools were instructed in hygiene and temperance and if they were trained by a judicious combination of exercises and games such deplorable exhibitions of athletics as we see in so many of our great cities every week would in time cease to exist. I am confident that our young people—like the boys and girls in the primary schools of Japan who are taught every day the important lesson of civic duties—would learn from being educated together in the principles of hygiene and temperance and in the various methods of physical culture—apart from, and in addition to, their intellectual and mental development—what in later years and in changed circumstances will be of the utmost value—namely, what is the true aim and the proper object of corporate life. They would come to realise that the best kind of education is that which develops all the faculties of mind and body, which cultivates individuality, brings about self-reliance, and forms character, and which makes them feel that the highest type of civilisation is reached by that community in which they can point out the greatest number of examples of men and women who try in every way in their power to better the condition of their less favourably placed fellow-beings. Such an education will make our young people realise the truth of those beautiful lines—

> "So build we up the being that we are,
> Thus drinking in the soul of things,
> We shall be wise perforce; and while inspired
> By choice, and conscious that the will is free,
> Unswerving shall we move, as if impelled
> By strict necessity along the path
> Of order and of good. Whate'er we see,
> Whate'er we feel by agency direct
> Or indirect, shall tend to feed and nurse
> Our faculties, shall fix in calmer seats
> Of moral strength, and raise to loftier heights
> Of love divine, our intellectual soul."

# CLEIDO-CRANIAL DYSOSTOSIS.

BY JOHN HILL ABRAM, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL INFIRMARY, LIVERPOOL; LECTURER ON CLINICAL MEDICINE AT THE UNIVERSITY OF LIVERPOOL.

I HAVE had the opportunity of showing at the Liverpool Medical Institution a case of absence of the clavicles. Though not so rare as at one time believed, yet the condition is sufficiently uncommon to justify a record of a fresh case. Villaret and Francoz,[1] reporting a fresh series of four cases in 1905, gave a list of 28 observations up to date, and a further case was reported by Voisin and de Lépinay[2] in February of this year.

Professor A. M. Paterson and Dr. W. H. Broad have been good enough to give me an expert anatomical report on the boy, from which I give the leading points.

*Clavicles.*—Are almost completely absent on both sides. There is, however, a cartilaginous rudiment on each side, the left being the larger, and articulating with the sterum above the first costo-sternal articulation. The rudiment on the right side is much smaller and immobile. These rudiments and the first ribs are connected with the well-developed coracoid processes by strong fascial bands representing the costo-coracoid membranes. Expansion of the shoulders is accompanied by a tightening of these bands which causes engorgement of the superficial veins of the neck and prevents any abnormal approximation of the vertebral borders of the scapulæ.

*Muscles.*—The subclavius muscles apparently are wanting, but the platysma, sterno-mastoid, trapezius, deltoid, pectoralis major and minor muscles are well developed. The clavicular fibres of the muscles in question appear to arise from the fibrous membrane described above. The sterno-mastoids possess well-marked tendinous origins which arise close together from the front of the upper end of the sternum, they have an additional origin from the costo-coracoid membrane, and possibly also from the rudimentary clavicles. The trapezius is inserted into the spine of the scapula and into the coracoid process or the fibrous membrane over it; the deltoid muscle has a similar origin. There is an obvious separation of the anterior fibres of the two muscles.

*Skull.*—Glabello-occipital length, 182 millimetres; transverse diameter, 157 millimetres; horizontal circumference, 555 millimetres; vertical transverse arc, 355 millimetres; naso-alveolar length, 55 millimetres; inter-zygomatic width, 142 millimetres. The skull therefore is markedly brachycephalic, the cephalic index being 86·2. The facial index is 38·7. The fontanelles are persistent; the anterior fontanelle extends along the adjacent sutures backwards and laterally for an inch and forwards along the metopic suture to the root of the nose, forming a crucial groove on the surface of the head. The nasal bones are deficient, sloping downwards and outwards from the middle line and exposing the cartilaginous septum between the lateral cartilages. The mastoid processes are rudimentary and higher than usual in position. The ears are normal. The jaws are small; the palate is narrow and has rather a high arch. The lower jaw is feeble and of an infantile type, the ramus forming an acute angle with the body.

---

[1] Nouvelle Iconographie de la Salpêtrière, 1905.

[2] Bulletin de la Société Médicale des Hôpitaux de Paris, 1905.

*Trunk.*—External occipital protruberance to tip of coccyx, 510 millimetres. Well-marked lordosis with slight dorsal scoliosis, convexity to the right. No obvious beading of ribs; seven costal cartilages articulate with the sternum on each side, the seventh pair at the junction of the mesosternum with the metasternum. The sternum is abnormal. The manubrio-sternal junction is opposite the articulation of the third pair of costal cartilages; there is no episternal notch. The three parts of the sternum measure 55, 64, and 19 millimetres respectively = 138 millimetres.

*Limbs.*—Arms and legs are well nourished and fairly muscular and not disproportionate in size. The humerus measures 213 millimetres, the ulna 201 millimetres, the femur 340 millimetres, and the tibia 295 millimetres. There is slight genu valgum on the left side. The terminal phalanges of the fingers and toes are rudimentary.

My colleague, Mr. E. J. M. Phillips, dental surgeon to the Royal Infirmary, reports on the teeth; the boy at the age of 16 years should have lost all the deciduous teeth and should possess 28 permanent teeth. Six temporary teeth are still present, and only 15 of the permanent set have erupted. The structure also of the teeth is poor; only three of the permanent teeth are sound.

FIG. 1. FIG. 2. FIG. 3.

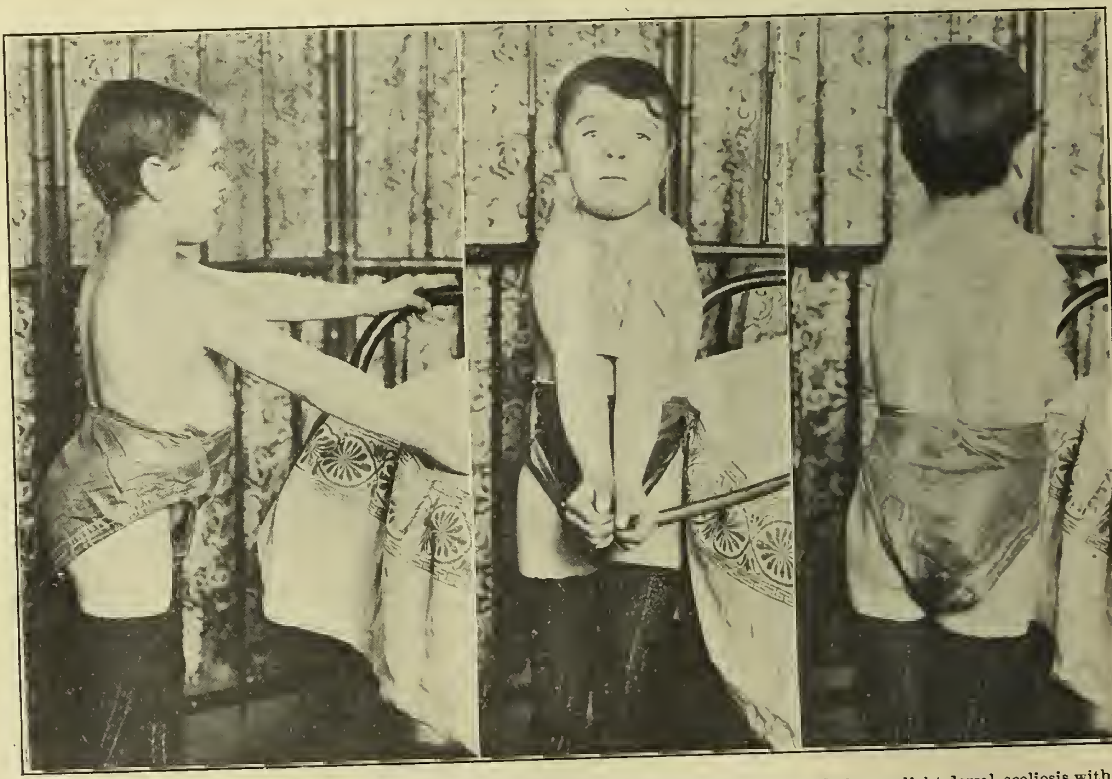


Fig. 1 shows the lordosis. In Fig. 2 the absence of the clavicles is well demonstrated. Fig. 3 shows slight dorsal scoliosis with convexity to the right. These figures all show abnormal mobility of the shoulder joints.

The lad is 16 years old. His height is four feet and half an inch, and his weight 4 stones 8 pounds (average height for age, five feet four and a half inches; weight, 8 stones 7 pounds). He has chubby, rosy cheeks. His gait is waddling (coxa vara). The genitals are puerile; there is some scanty hair on the pubes. On superficial examination one would not be struck by the absence of the clavicles—the shoulders are held well back and the chest is well rounded. I think Mr. J. Lewis Owen of Holyhead, who sent me the case, is to be congratulated on his acuteness in detecting the malformation. Finally, the boy is intelligent. He reached the fourth standard at school, and was a great favourite in the ward for his helpful ways. The reproductions of photographs illustrate well his appearance and the abnormal movements possible at the shoulder-joints. One shows the lad standing on his hands, and I might add that he can pull himself up chin high at the full stretch of his arms.

Dwarfs seem to fall into two marked groups, first those of perfectly proportionate but diminutive formation and, second, those due to mal development or disease. My case belongs to the second group; he is an example of the class of case isolated as a distinct type by Pierre Marie and Sainton[3] in May, 1897, under the title of cleido-cranial dysostosis. The leading features are (1) aplasia more or less marked of the clavicles; (2) exaggerated development of the transverse diameter of the cranium; (3) delay in the ossification of the fontanelles; and (4) hereditary transmission. 1. The aplasia of the clavicles is well marked in this boy and, as most commonly seen, is bilateral. (A radiograph by Mr. C. Thurstan Holland showed a complete absence of any bony tissue.) 2 and 3. The head is typical, except that the palatal arch is not very high. As regards the fourth point, the heredity in my case does not fall into line. The mother, though short, is well formed and has normal clavicles; the boy's younger brothers, aged 14, 12, and 7 years respectively, and a sister, aged 10 years, have all well-formed clavicles. The father is a tall, well-formed man.

It is interesting to note that in achondroplasic dwarfs the clavicles and the bones of the cranium are not affected, and this has led M. Apert[4] to associate achondroplasia and cleido-cranial dysostosis as two variations, opposed and complementary, the first characterised by an insufficiency of the cartilaginous ossification, the second by an insufficiency of the membranous ossification. The origin of the clavicle in membrane is not generally admitted, however suggestive M. Apert's hypothesis may be. Gegenbaur has shown that the clavicle is a membrane bone like the cranium and may be connected with it by supraclavicular bones (sturgeon), or even arise directly from it (teleostei), and that in the acrania the clavicles are wanting. Bruch asserts that the clavicle is a membrane bone in man, but Gegenbaur holds it to be a mixed and Kölliker a cartilaginous bone. However this may be, Apert considers both conditions to be hereditary dystrophies the result neither of an accident of uterine development nor of fœtal disease, but in reality "definite and hereditary variations of the human type, specific and sudden, well recognised by zootechnists, which the Neo-Darwinian school term, with de Vries, mutations." Couvelaire considers that the causal element, whatever it may be, does not really limit its action to certain parts of the bony skeleton. Cleido-cranial dysostosis is the expression of a general defect with predominance on a certain bone group. In my case, for example, the general growth is stunted, the sternum is abnormal, the terminal phalanges in both hands and feet are ill-formed, there are lordosis, coxa vara, and left genu valgum, and it affords support to Couvelaire's theory.

---

[3] Ibid., 1897, 1898.

[4] Maladies Familiales, 1907.

FIG. 4.

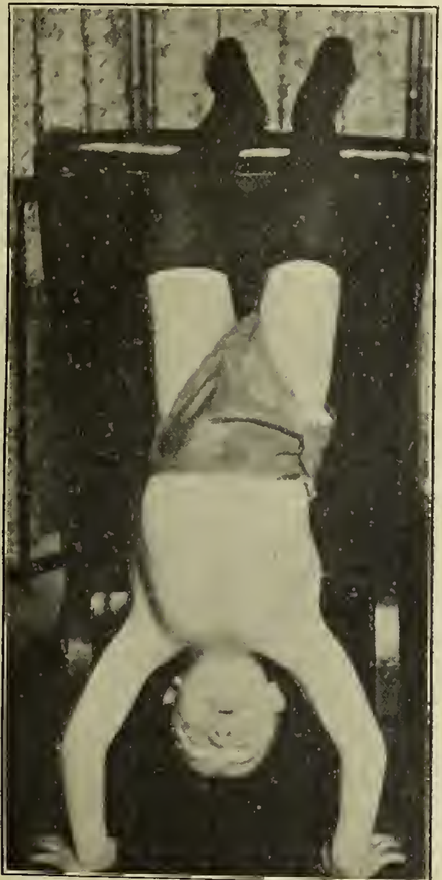


Fig. 4 shows the ability of the boy to stand on his hands.

As I have said, I have been unable to trace any hereditary element in my case. It is important to note, however, that the mother was married at 16 years of age, three months after a severe illness, the nature of which I do not know, which kept her six weeks in bed. She was 17 years of age at the boy's birth, ten months after marriage. The father is a temperate man and I think some weight may be attributed to the mother's illness in the causation of this boy's deformity, especially in view of the general defects and the early period of intra-uterine life at which the ossification of the clavicle begins.

Liverpool.

---

**RAMSEY AND DISTRICT COTTAGE HOSPITAL.**—A cottage hospital near Ramsey in the Isle of Man was opened on July 23rd. The portion of the building allotted to patients is of only one storey and consists of four wards, a nurse's room, a linen store, two bath-rooms, and two water-closets. Of the four wards two have one bed each and two have four beds and two cots each. A short corridor connects this portion with a two-storey block containing on the ground floor a surgery arranged and fitted as an operating-room, the matron's sitting-room, the kitchen, and various store-rooms. The mortuary is in a detached building not far from the laundry. The flooring of the wards is of polished teak, and elsewhere, except in the matron's sitting-room, the whole of the ground floor is of marble terrazzo. The requisite funds have been provided by the trustees of the Henry Bloom Noble estate.

---

# NOTES ON A CASE OF CARCINOMA OF BOTH OVARIES.

BY M. P. KERRAWALLA, M D. BRUX., L.M. & S. BOMBAY, L.R.C.P. & S. EDIN., L.M. IREL.,
RESIDENT MEDICAL OFFICER TO THE BRIGHTON AND HOVE HOSPITAL FOR WOMEN.

THE patient, a married woman, aged 47 years, was admitted into the Brighton and Hove Hospital for Women on June 20th, 1907, for an abdominal tumour. She had had three children, the last being 20 years ago, and there had been no miscarriages. Her periods had been regular up to three years ago, since when they came on irregularly about once in every six months or so with scanty loss. Her mother had died from cancer of both breasts when 52 years of age, as also had her mother's two sisters. Her own sister was healthy, as also was her own daughter. The present complaint started about 18 months ago with the patient experiencing "dreadful pains" on walking or exertion, arising in the left iliac region and shooting round the back and down the legs as far as the knees. The pains were treated as rheumatic but without giving relief. For several months before admission the patient had developed a slightly yellowish offensive vaginal discharge, which, however, began to assume a pink colour for the last four months before admission to the hospital. She had been several times examined by a well-known London gynæcologist who, however, failed to find anything abnormal prior to the last examination nine weeks before admission, when he noted a hard lump to the right and back of the uterus, though no abdominal swelling was observed. For some time before admission the patient had suffered from a dragging pain during micturition. She had lost weight slightly. Three weeks before being admitted she had for the first time noticed an abdominal swelling, which was then only up to the level of the symphysis pubis. In about ten days more the swelling rose up to about two inches from the umbilicus.

On admission the patient, an intelligent woman, appeared to be well nourished. She had a slight offensive vaginal discharge and suffered from pain in the back and dragging pain on micturition. The abdominal tumour was globular, giving to the touch an impression of irregularity and being quite hard in the left half and fluid in the right. No free fluid could be detected in the peritoneal cavity. Per vaginam the cervix looked and felt healthy. The uterus was fairly mobile and moved with the tumour. A hard irregular lump was felt to the right and back of the uterus. Nothing abnormal could be detected in any other organ of the body.

At the operation the abdomen was opened in the middle line. A large ovarian cyst was discovered and was tapped in the usual manner, letting out about 40 ounces of what looked like ordinary ovarian fluid, which, however, got blood-stained towards the end. The cyst wall was adherent to the posterior surface of the uterus and the left broad ligament and had to be separated, leaving a raw, oozing surface. The inner surface of the cyst wall, especially towards the bottom of it, showed large warty growths. The pedicle was soft and friable; it was torn through in separating the cyst and was secured with difficulty. The greater part of the left broad ligament was tied off and removed. There was a little blood-stained free fluid in the peritoneal cavity which was removed. The uterus felt normal. The right ovary was enlarged to the size of a Tangerine orange and was hard and irregular with papillomatous growths on its surface. It was duly removed; no secondary deposits were discovered. The wound, which was closed in layers, healed by first intention. After the operation the discharge diminished greatly, as also did the pain on micturition. A fortnight afterwards the cervix and the uterus felt normal and freely moveable per vaginam and the patient left the hospital greatly improved.

For the following pathological notes of the case I am indebted to Dr. F. G. Bushnell of the Sussex County Hospital, Brighton:—

> The cyst consists of a papillomatous portion and a softer portion of about the consistence of brain matter. The former consists of a dense fibrous stroma which is everywhere invaded by columns of irregularly-shaped carcinoma cells. The soft portion is of exactly similar structure, except that the fibrous tissue is of recent formation. The epithelium is atypical and sometimes multinucleated. Section of the oviduct shows similarly the growth of carcinoma within the lumen. The surface of the cyst shows warty growths. Sections of the ovary of the

opposite (right) side show infiltration with rapidly growing columns of carcinoma cells but the tube is free from growth. A papillomatous growth on the surface is malignant—no corpora lutea are seen.

I have to thank Dr. R. Sanderson, senior surgeon to the hospital, for kindly permitting me to make use of the case.

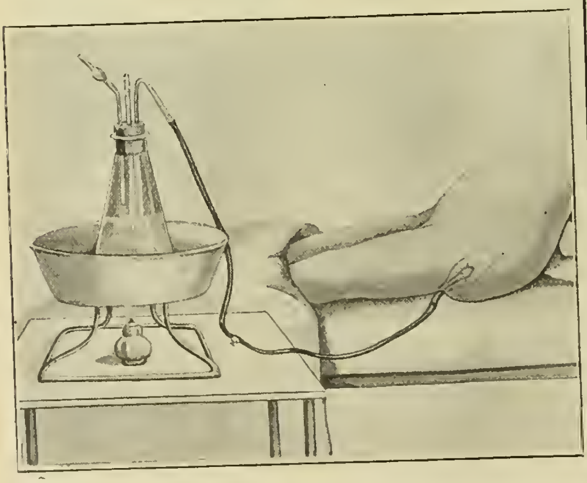
Brighton.

# ON THE CONTINUOUS ADMINISTRATION OF FLUIDS BY THE RECTUM IN THE TREATMENT OF ACUTE GENERAL PERITONITIS.

BY B. G. A. MOYNIHAN, M.B., M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE LEEDS INFIRMARY.

IN the *Annals of Surgery*, 1906, Vol. XLIII., p. 231, Dr. Le Conte of Philadelphia, in discussing the treatment of diffuse septic peritonitis, drew attention to the method of introducing large quantities of fluid into the rectum which he had witnessed in the clinic of Dr. J. B. Murphy at Chicago. The results which Dr. Murphy and Dr. Le Conte had attained in the treatment of acute peritonitis due to appendicitis were so remarkable that I hastened to put the principles enunciated in that paper into practice. Certainly the most novel and in my judgment the most important of the several points mentioned therein had reference to the continuous administration of fluid by the rectum after operation. I have come to the conclusion, after a fairly large experience of it, that there are few recent therapeutic measures which are in value equal to this. I have up to the present time treated 19 consecutive cases of acute general peritonitis due to appendicitis with two deaths, and the recovery of several of these patients is, I believe, largely, if not solely, due to the continuous administration by the rectum of saline solution over a period of two to four days after the operation. But it is not only in such cases that I have found this method of value. In two recent cases of partial gastrectomy and in one case of complete gastrectomy the recovery of the patients was undoubtedly helped by this abundant supply of liquid to them. I propose to describe briefly the method of administration which I have found the most useful and shortly to add the details of a few cases in which I have adopted it.

The first point is concerned with the selection of a proper rectal tube. To find a perfectly satisfactory one is no easy matter. The patient during the administration of the infusion is generally propped up in bed, and if a short solid tube is used the rubber tube attached to it is apt to kink. I have used in all my recent cases a tube one foot in length and half an inch in diameter, made of pewter, with a slightly bulbous extremity which is introduced into the rectum. The tubes are supplied to me by Messrs. Allen and Hanburys. At the end and on all sides of this bulb holes are pierced so that fluid can easily pass through them and flatus can escape and can be seen bubbling through the supply-tank or funnel. If a single aperture only is present in the tube it is apt to be blocked by fæces. When there are many openings the rectum is equally distended above the sphincter and the obstruction of the flow of fluid by fæces does not occur. The tube is introduced about from two to three inches into the rectum, and at the anus it is bent sharply so as to lie easily on the bed. To its outer end a long rubber tube is attached, which leads to the source of supply at the bedside. The most convenient vessel to hold the saline solution is an "infusion flask" (Sahli's pattern). This is of the type of a Florence flask, but instead of being globular it is triangular in shape, having a large base. The flask holds from three to four pints and is closed at its neck by a rubber stopper, through which there are three openings; the one admits a glass-tube, which at one end reaches to the bottom of the flask and at the other is attached to the rubber-tube leading to the rectum; a second admits a thermometer; and a third a tube which acts as an inlet for air. The whole glass flask is immersed in a bath of hot water, beneath which a spirit lamp burns. This secures an equable temperature of the saline solution. The best temperature is from 100° to 102° F. If the fluid is hotter than this it is not retained well; its temperature is probably three or four degrees lower than that shown by the thermometer when the rectum is reached. When the tube has been introduced into the rectum and the flask attached the latter should be elevated so that its base is about from three to six inches higher than the rectum. The saline begins to flow and continues to flow at the rate of about a pint an hour. It is not desirable to introduce more than one and a half pints, or at the most two pints, during the first hour; subsequently a rate of one pint in the hour should be maintained. The rapidity of the flow is altering by raising or lowering the flask. It should be regulated by the patient's comfort. If a feeling of tightness or distress is caused the flow is too rapid. As a rule no uneasiness is caused till about five pints have been introduced. It may then be necessary to retard the flow for half an hour or an hour, or even to stop it for a few minutes. In only one case has less than five pints caused distress. If the rate of flow be regulated properly and the temperature of the fluid not altered from seven to ten pints can be introduced without any interruption. If flatus reaches the rectum it can escape by the tube. If, as rarely happens, the fluid introduced acts as an enema the tube may be replaced as soon as the bowels have acted. Care and almost constant attention on the part of the nurse are necessary to make the administration a success; a marked difference in the capacity of nurses will probably be discovered by all who try the method. In place of the infusion flask a funnel may be used which the nurse must keep filling from a jug. This is tedious and a variation in the temperature of the fluid is inevitable.



Apparatus for the continuous administration of fluids by the rectum.

The largest quantity of fluid taken by any patient of mine during the first 24 hours was 16 pints; the largest quantity administered was 29 pints, extending over three days. These quantities were borne quite easily, without any distress whatever. The change in the appearance of a patient who is absorbing fluid so rapidly is very remarkable. If the case is one of acute general peritonitis the patient who looks livid, whose eyes are sunken, whose skin is moist and cold, whose mouth is so parched that his tongue can hardly move, begins in a few hours to look ruddy and "clean," his mouth is moist, his eyes are bright, and all his aspect is one of comfort and contentment. The pulse gains volume and improves steadily in character, urine is passed in large quantities, and the skin keeps moist. Not a few patients say that they feel very hot and some of them perspire freely. It is a question, perhaps, as to how far one is justified in carrying this treatment in patients whose kidneys are defective. In the case of partial gastrectomy to be mentioned presently I gave 16 pints of saline solution in 24 hours; this represents a large dose of sodium chloride. At the end of the 24 hours it was noticed that the patient's face looked fuller and rosier than it had ever done and a slight œdema of the lower eyelids developed. The injection was therefore discontinued for 12 hours to be again administered without any ill effect.

The chief use and the most remarkable achievements of this method are certainly in the treatment of acute general peritonitis, but I have found great help from it in the preparation and after-treatment of certain cases of gastric disease. Patients who suffer from pyloric obstruction in a marked degree are often wasted and shrivelled and parched. Such patients stand operation badly if the obstruction is malignant. It has been my custom for two or three years in all such cases to perform gastro-enterostomy as speedily as possible. As soon as the lines of suture are complete I ask the anæsthetist to pass a long stomach tube; when this reaches the stomach I direct it through the new opening into the distal limb of the jejunum and then while I am stitching up the abdominal wall 50 ounces of peptonised milk, with one ounce of brandy, are given. The effect is most satisfactory. In one recent case of partial gastrectomy the patient was so ill and emaciated that I was doubtful if she could bear the removal of the pyloric growth. I therefore performed gastro-enterostomy, using the cardiac half of the stomach for the anastomosis. When this was complete the stomach tube was passed through into the jejunum and while I was engaged in removing the stomach a substantial meal of 50 ounces of peptonised milk was allowed to trickle into the jejunum. When this patient returned to bed the continuous rectal administration of saline fluid was begun and 16 pints were given. The first two pints contained glucose also. Eight weeks ago in another case I removed the whole stomach, attaching the jejunum to the œsophagus. Contrary to my usual practice I gave the patient no fluid at all by the mouth for 24 hours. During that time he received nine pints of fluid by the rectum and was perfectly comfortable and free from thirst. During the second period of 24 hours he absorbed six pints introduced into the rectum. His recovery was undoubtedly made more certain and less distressing by his free absorption of the fluid given by the rectum.

Dr. Murphy is of the opinion that in cases of acute peritonitis the fluid causes a reverse current of the lymph in the peritoneal lymphatics, "so that instead of absorption taking place from the peritoneal surface the mouth of the lymphatics pour out fluid, bathing the peritoneum with this free discharge," which escapes then by the tubes; that in fact the peritoneal cavity is flushed out by the fluid. I am doubtful if this view is correct. If an innocuous colouring matter be introduced with the saline solution, the fluid discharge from the abdominal wounds is never stained therewith.

We are, I think, entitled to say of this method that the continuous administration of fluids by the rectum is safe, that it is easily borne by the patients, that it effects a very remarkable change in their appearances and in their prospects of recovery after serious abdominal operations, and that the quantities which can be retained by the patient without discomfort do not throw a strain upon the kidneys which they find difficult to bear.

Leeds.

---

# A NOTE ON HYPOPHARYNGOSCOPY.

By HAROLD S. BARWELL, M.B. LOND., F.R.C.S. ENG.,
SURGEON FOR DISEASES OF THE THROAT, ST. GEORGE'S HOSPITAL;
LARYNGOLOGIST, MOUNT VERNON HOSPITAL FOR CONSUMPTION; CONSULTING SURGEON FOR THROAT
AND EAR DISEASES, CRIPPLES' HOME
FOR GIRLS.

IN THE LANCET of May 25th, 1907, p. 1421, Dr. P. Tetens Hald of Copenhagen described under the above title a new method, devised by von Eicken[1] in Professor Killian's clinic, for the examination of the hypopharynx, or that part of the pharynx which lies below the aperture of the larynx. This region is especially difficult of examination, for the posterior surfaces of the arytenoids and cricoid plate lie in contact with the posterior pharyngeal wall and are not exposed to view in the laryngeal mirror. It is by no means easy to maintain Killian's tubes in position at this spot; they cause great discomfort unless a general anæsthetic be given, which would have been inadvisable in view of the exhausted condition of the patient whose case is related below, and their use is not without risk in cases of ulceration of this region. As this part of the pharynx is often the seat of important lesions and, especially in women, is frequently the site of an epithelioma, any promising method for its examination becomes of great importance. The following case in which von Eicken's method was successfully employed will, therefore, be of interest.

A woman, aged 39 years, was sent to me at Mount Vernon Hospital on June 6th, 1907, by Dr. F. T. Hebb. She complained of pain on swallowing, which began eight months before and grew steadily worse, so that she had eaten no solid food for three weeks and had hardly swallowed anything, even fluids, for the last four days. She appeared very weak and emaciated, the voice was slightly hoarse, and a gland was just palpable on the left side of the thyroid cartilage. On laryngoscopic examination the left arytenoid was seen to be fixed, greatly swollen, and œdematous, the cords were normal, and no ulceration was visible, but a minute red line could be detected on the pharyngeal wall behind the swollen arytenoid, which suggested the upper end of an ulcer in the hypopharynx (see Fig. 1). Nothing more definite could be seen and, for the reasons mentioned above, the use of Killian's tubes appeared inadvisable. I therefore decided to try von Eicken's method and after thorough cocainisation I passed a stout laryngeal probe, covered with moistened cotton-wool, below the cords and made forward traction on the cricoid. A large ulcer could now be seen to cover the back of the arytenoid and cricoid plate and to extend on to the pharynx; it had a greyish-white base and a red raised margin. Fig. 2 shows how the parts were exposed by pulling forwards the larynx. Although the patient was nervous the manipulation caused her no inconvenience. The most urgent indication being to relieve the dysphagia I clipped out a small piece from the swollen arytenoid and admitted her to St. George's Hospital on the following day; the arytenoid swelling diminished much in size and the dysphagia was greatly relieved, so that she could eat the ordinary fish diet after 48 hours. Although the probable diagnosis was epithelioma and no history suggestive of syphilis could be obtained she was given mercury and potassium iodide for a fortnight, at the end of which time the ulceration had slightly extended and the gland in the neck was larger, though the arytenoid remained small and the wound made on it had healed. A small piece was now removed from the edge of the ulcer and under the microscope showed definite epithelioma.

FIG. 1.

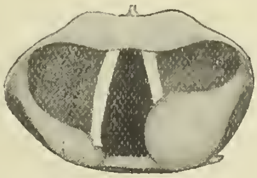
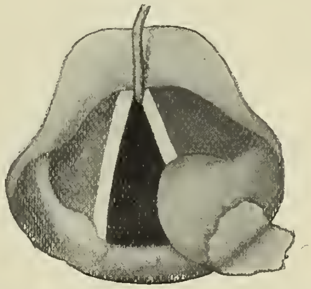


FIG. 2.



In this case the extensive involvement of the pharynx contra-indicates operation; von Eicken's method has been of great use in showing at once the extent of the pharyngeal involvement and therefore in proving the case to be inoperable. It is also interesting to note how greatly the dysphagia was improved by relieving the tension of the œdematous arytenoid, for the patient was still taking solid food when she left the hospital four weeks after the little operation.

Wimpole-street, W.

---

[1] Archiv für Laryngologie und Rhinologie, Band xix., Heft 2, 1907, p. 213.

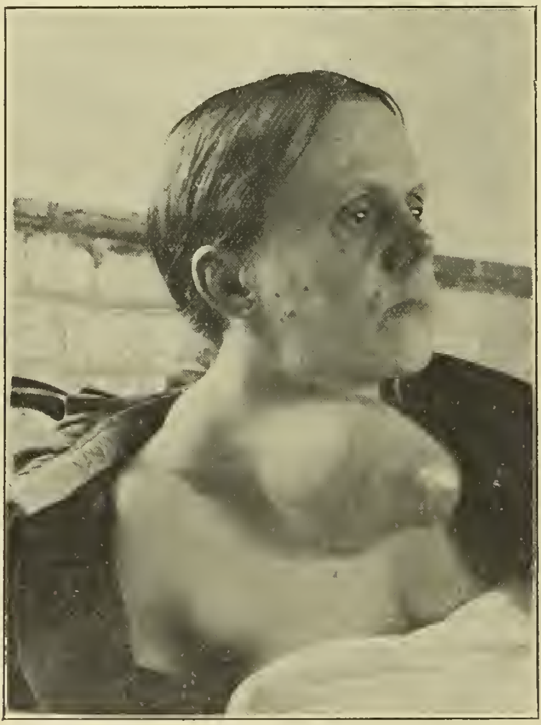
---

CARDIFF INFIRMARY.—£333 have been received by the treasurer of the Cardiff Infirmary from persons who let the windows of their houses on the occasion of the recent visit of the King to the town.

# NOTE ON A CASE OF THYROID TUMOUR.

BY W. GREENWOOD SUTCLIFFE, F.R.C.S. ENG.,
CONSULTING SURGEON TO THE THANET UNION INFIRMARY;
AND
A. F. M. POWELL, M.B., C.M. EDIN.,
MEDICAL OFFICER TO THE INFIRMARY.

THE patient, aged 42 years, was stone deaf, so that a history of the duration of the tumour was not obtainable; she had been in the infirmary a few weeks only and the tumour was giving rise to distinct pressure symptoms, there being frequent attacks of dyspnœa. Removal of the tumour was decided on and carried out on March 23rd, Dr. Powell administering the anæsthetic, chloroform, and Dr. Frank Nichol of Margate assisting Mr. Sutcliffe. The usual transverse incision was made over the most prominent part of the swelling and as more room would obviously be required a longitudinal incision was added in the line of the sternomastoid. The bulk of the cyst at once collapsed on incision and its connexions could then be made out; it extended well under the trapezius behind, under the maxilla above, and some considerable distance into the thorax below. It was densely adherent and its separation involved a difficult and tedious dissection. Starting from behind, the bulk of the collapsed cyst was dissected up and it was found that the carotid sheath was incorporated in its posterior wall. The jugular vein was tied low down and again high up, a large piece being removed bodily with the tumour; the carotid and the vagus were easily peeled off and the upper pole of the cyst tied with a strong silk ligature. The intrathoracic portion was cut off and left *in situ* as its removal would have been attended with risk. A gauze drain was passed into the cavity and the wound sewn up with provision for free drainage in all its area. After the first day, on which the temperature rose to 103° F., the patient did well, the only trouble in healing being the sloughing of some of the skin that had been stretched by the tumour. The cyst had evidently at one time been an ordinary multilocular thyroid tumour, but the partition between the walls had broken down, making one large irregular cavity. It was in part very closely adherent to the skin which was reddened and glazed over it, entirely negativing any idea of subcutaneous anæsthesia, but when collapsed was on the whole easily separable; the hardest part to remove was the rounded semi-solid upper angle, visible in the illustration as a prominence under the angle of the jaw and adherent internally to the pharyngeal muscles. At one stage of the operation there was some startling hæmorrhage from a large tributary vein low down in the neck, the arrest of which was momentarily delayed owing to temporary difficulties with respiration due no doubt to traction on the vagus, and the later stages of the operation were accompanied by a curious whistling sound from the thorax as if the pleura had been wounded, but it was probably only due to air flowing in and out of the thoracic portion of the collapsed cyst with the respiratory movements. The patient is now perfectly well and the scar is, as usual in thyroid cases, hardly visible.


Shows the appearance of the tumour before removal.

Margate.

# TUBERCULOSIS AMONG SCHOOL CHILDREN.[1]

BY T. N. KELYNACK, M.D. VICT., M.R.C.P. LOND.,
HONORARY PHYSICIAN AND MEDICAL ADVISER TO THE CHILDREN'S HOME AND ORPHANAGE; HONORARY PHYSICIAN TO THE MOUNT VERNON HOSPITAL FOR CONSUMPTION AND TO THE INFANTS' HOSPITAL, HAMPSTEAD.

IT is estimated that in this country more than one-third of all deaths between 15 and 35 years of age are due to pulmonary tuberculosis. This, at least in a large proportion of cases, is the death harvest of a tuberculous seed-sowing in infancy and childhood. It is well to remember that of the 1,200,000 new lives added annually to the population of the United Kingdom, one-fourth to one-third are born into homes where conditions exist strongly predisposing to tuberculosis. The valuable work of von Behring, Calmette, and others conclusively demonstrates that much of the tuberculosis met with in adult life is dependent on infection in infancy and childhood. Tuberculosis is a disease which commonly has a long latency. The development of active tuberculous lesions is often long deferred. Statistical evidence relating to the mortality of children from tuberculosis gives no reliable expression of the amount of the disease prevailing. Tuberculosis exacts heavy toll from child life, but the penalty of death is only exceptionally exacted. Pathological returns are of much directing value. Tuberculous lesions are rarely found in the bodies of infants dying under three months of age. After this, however, there is a progressive increase in frequency. D'Espine states that in children submitted to necropsy under one year tuberculosis occurs in from 7 to 8 per cent. Taking all cases on which post-mortem examinations are made under 15 years of age, Harbitz of Christiania finds tuberculous lesions in 42·5 per cent.; Hamburger and Sluka in Vienna, 40 per cent.; and Comby in Paris, 38·5 per cent.

At present the clinical evidence regarding the amount of tuberculosis among school-going children is miserably meagre. Medical examination, so-called, is manifestly oftentimes most hastily and imperfectly carried out. For the detection of tuberculosis, especially in its latent and incipient forms, time, patience, and skill are required. Many cases of pulmonary involvement offer exceptional difficulties in the detection. Every school should be equipped with a medical officer's consulting-room. It seems to be quite unusual at present to examine children in the recumbent position and careful investigation of the abdomen is rarely undertaken. Before placing any value on returns relating to "revealed" tuberculosis in children inquiry should be made as to the nature of the diagnostic methods relied on. According to statistics at present available for England and Scotland tuberculosis is said to be present in from less than 0·5 per cent. to over 6·0 per cent. of school-going children. We have no satisfactory information as to the prevalence of tuberculosis in rural schools. The amount of active tuberculous disease in children attending London schools appears to be small; but the case of the metropolis, in this as in many other matters, stands alone and must not be taken as any indication of the state of the country generally. What is really required is not merely a numerical statement as to the amount of recognised tubercle among scholars in elementary schools but a reliable estimation of the amount of tuberculosis in all its forms and stages among the children of school-going ages in each district under an education authority. There is need also for careful inquiry into the amount of tuberculosis in those attending our higher and secondary schools.

---

[1] Abstract of a paper presented to the Second International Congress on School Hygiene, London, 1907.

Tuberculosis, more particularly of the lungs, exists among many teachers. During recent years I have examined a considerable number of such cases. In many involvement of the larynx occurs. Dr. J. Tatham has shown that the mortality from consumption among teachers is high in England and Wales. The same seems to be the case for Scotland and Ireland. The experience of Canada and the United States affirms the same. Many teachers certainly continue their work after they have become "open" cases. The presence of a consumptive teacher, placed, it may be, in an insanitary school, and in charge day after day for long periods at a time of debilitated and tuberculously disposed children, is so grave a risk that no education authority should be permitted to accept it. In Denmark every teacher on appointment to a public school is obliged to present a medical certificate not more than three months old, stating that he or she is not affected with any contagious form of tuberculosis of the lungs or larynx. If a teacher is found to be suffering from either of these forms of tuberculosis he or she may be dismissed with a pension of not less than two-thirds of the salary. Medical inspection is necessary for both teachers and scholars not merely to detect disease when well established but so that those predisposed may be recognised and suitably dealt with. Among upwards of 1800 children belonging to the various branches of the Children's Home and Orphanage, of which I am physician and medical adviser, we find that something like 25 per cent. are of consumptive parentage or are to be considered as specially predisposed to tuberculosis. The medical officer of schools will be able to render invaluable service by examining the upper air passages, tonsils, and other channels by which tuberculous infection occurs.

In considering the subject of tuberculosis among children of school age it is very necessary to break loose from all restricting conceptions and to view the school and its scholars from the broadest hygienic standpoint. It should be the duty of both medical officer and teacher to coöperate in defending the child as far as possible from all influences making for tuberculosis. I believe that most of the tuberculosis occurring among children of all ages is home-born and home-grown. Bearing upon this point the remarkable facts recently furnished me by Professor Emmett Holt deserve very serious study. Professor Holt states:—

> During the 19 months ending May 1st, 1907, 67 cases of pulmonary tuberculosis have been treated in our New York Babies' Hospital, 62 of these being children under two years and 15 under six months of age. The diagnosis rested upon finding bacilli in the sputum in 54 of the living cases; upon post-mortem examination in ten; and of the remaining three, one had tuberculous meningitis (tubercle bacilli were found in the fluid drawn by lumbar puncture), one reacted to tuberculin, and the third presented typical clinical symptoms of pulmonary tuberculosis. In only half of these cases was any consolidation of the lungs noted at the time the diagnosis was made, and in nine cases there were no pulmonary signs whatever, the infants having been admitted for other conditions than tuberculosis.

By adopting a special method for the collection of the sputum from these cases Professor Holt was able to demonstrate the presence of tubercle bacilli in no less than 80 per cent. of the cases, and "the possibility of infection at home was known to have existed in at least 40 per cent. of the children." It is very necessary, however, to insist that large numbers of our schools both in rural and urban districts are highly insanitary and rich in conditions predisposing to tuberculosis.

School sanatoriums are badly needed. Tuberculous and tuberculously disposed children should not be sent to a sanatorium dealing with consumptive adults. Consumptive children have special needs. Those in charge should be capable of carrying out the duties both of nurse and teacher. Many a woman as nurse-teacher should find an ideal vocation. When a school child is living in close association with consumptive parents or in an environment definitely tuberculous it might be well if some such method could be adopted as that advocated and so successfully carried out by the late Professor Grancher for Parisian children, whereby tuberculous little ones are removed from their infected and infecting homes and boarded out with healthy foster parents in the country at a comparatively low cost. The forest schools of Germany are accomplishing much and the interesting experiment of the London County Council in this direction will be watched with interest. In many crowded homes in both town and country large numbers of children are slowly dying from consumption and other forms of "open" tuberculosis, thereby perpetuating and multiplying the disease. For advanced and hopeless cases havens of refuge are urgently required. The subject is far-reaching and peculiarly perplexing, and surrounded by what seem to be almost insoluble difficulties. Only by coördination of knowledge and coöperation of effort can we hope to obtain directing principles and secure effective practice.

I believe progress might be considerably expedited if we could form an International Association for the Study, Prevention, and Treatment of Tuberculosis among Children.

Harley-street.

# Reviews and Notices of Books.

*Chemical Pathology.* By H. GIDEON WELLS, Ph.D., M.D., Assistant Professor of Pathology, University of Chicago. London and Philadelphia: W. B. Saunders Company. 1907. Pp. 549. Price 15*s.* net.

ALTHOUGH pathology has long been regarded as one of the sure foundations of medicine, up to comparatively recent times by this term has been understood pathological anatomy, which represents the results of disease, not the successive steps—chemical, physical, and structural—which ultimately bring about those phenomena which are laid bare in the post-mortem room. Relatively seldom has the pathologist attacked his problem from the chemical point of view and by chemical methods. Biological chemistry has made great progress during the last 20 years and many fragments of information concerning the chemical changes that determine pathological phenomena have accumulated, but they are for the most part scattered through medical, chemical, physiological, and physical literature. The aim of Dr. Wells has been to collect these scattered fragments and to use them for a consideration of general pathology from the standpoint of chemical processes that occur in pathological conditions. The reader must not look for a description of chemical methods. For the benefit of those whose studies in organic and physiological chemistry date back some years an epitome is included of the more modern views concerning the chemistry of the proteid molecule, the composition of the animal cell, and the principles of physical chemistry, in so far as they apply to biological problems. The general consideration of enzymes is written with a similar object (pp. 61–103). The scope of treatment will be best grasped by stating the aspects from which the author sets forth his subject—viz., nature of enzymes and their actions, toxicity, intracellular enzymes, oxidising enzymes, lipase, intracellular proteases, and autolysis. Perhaps the fact is hardly realised that every cell is constantly accomplishing an enormous number of chemical reactions of varied nature at one and the same time—in the liver cell there may be going on a score or more of which we know something. The forces that bring about these chemical reactions reside, we say, in the enzymes, and possess attributes that were formerly conceded to the cell itself. The modern view but shifts the problem to certain constituents of the cell whose nature and manner of action are equally unknown. There are, however, certain essential differences between cells and enzymes, such as the susceptibility to poisons of enzymes and cells. Much new and suggestive work has recently been done on anti-enzymes; thus enzymes injected into animals lead to the appearance of substances in the serum of these animals that antagonise the action of enzymes. The principles involved are quite the same as in immunisation of animals against bacterial toxins or against foreign proteids. A fascinating chapter is that on intracellular enzymes, which gives a glimpse into the inner working of cell activity by such agents as oxidases, catalase, alochydrase, tyrosinase, and proteases. This leads to a study of the defence of cells against their autolytic enzymes and the relation of autolysis to metabolism, normal and pathological. In the resolution stage of lobar pneumonia we have a striking example of autolysis. The dissolution and removal of the dense contents of the alveoli are due chiefly to the leucocytic enzymes, while the lung tissue itself is protected by the immunity of living cells to digestive enzymes.

To the chemistry of bacteria and their products about 25 pages are devoted, including their enzymes, ptomaines, toxins, Ehrlich's conception of the nature of toxins, endotoxins, poisonous proteids, and pigments. Very full consideration (pp. 136–56) is given to immunity against bacteria and their products and the relations of agglutination and precipitation. The chemical nature of antitoxins is discussed and so are immunity against bacterial cells, bactericidal serum, opsonins, anti-enzymes, agglutinins, and precipitins. But the production of substances possessing the essential features of true toxins is not limited to the bacterial cell, for we have both *phyto-toxins* and *zootoxins*, to which Chapter VIII. is devoted. This naturally leads to the consideration of *cytotoxins*, hæmolysis, or more correctly "*erythrocytolysis*," since through usage the term hæmolysis has been limited to solution of the red corpuscles. The remaining 300 pages deal with the following subjects: Inflammation—a condition in which it seems most of the features of the inflammatory reaction are brought about by chemical substances produced by alterations in the tissue constituents at the point of injury. This chapter includes a discussion on chemiotaxis and phagocytosis. Then follow the chemistry of diseases of the blood and such allied phenomena as hæmorrhage, hæmophilia, anæmias and specific anæmias, leukæmia, thrombosis, embolism, and infarction (pp. 238–75), and a full discussion of the important subject of "œdema" (pp. 276–306). The retrogressive changes, including necrosis, gangrene, rigor mortis, parenchymatous degeneration, fatty amyloid, hyaline colloid, and mucoid degenerations—and also glycogen in pathological processes—are then dealt with (pp. 307–63). The classical division of fatty changes in tissues—as "infiltration" and "degeneration," introduced by Virchow in 1847—must, it appears, be given up. An enormous amount of literature has accumulated on this subject. It seems, however, that the fat accumulated in the liver during fatty degeneration is not derived, as Virchow thought, through a transformation of cell proteids into fat, but rather is an infiltrated fat brought in the blood from the fat deposits of the body to the disintegrating organ. This applies more especially to the liver, myocardium, and pancreas, the degeneration having been caused in the cells so infiltrated by the action of poisons or other injurious influences. "In the kidney, spleen, and muscles an increase of fat seldom occurs from these causes, but the cells may show a marked fatty metamorphosis through the setting free of invisible intracellular fat by autolytic changes" (p. 339). As to amyloid, it is never deposited in the cells themselves; it is infiltrated in the form of a soluble precursor and is not manufactured in the organ where it is found. In so-called "hyaline degeneration" there is no chemical compound "*hyalin*." The subjects of calcification, concretions, and incrustations occupy about 30 pages, while about 20 pages are devoted to pathological pigmentation.

The chemistry of tumours has been but little investigated, though the indications point to the chemical processes in them as differing but little from those in normal cells of similar origin. No substance, the author holds, has yet been isolated from, or detected in, malignant growths that is peculiar to them and not found in normal cells, and still less has any substance been detected that accounts in any way either for the occurrence of tumours or for the effects that they produce. The cachexia of cancer is in no way different from the cachexia of other conditions The most favourable results of experiments on immunity against cancer "have been entirely unconvincing." The later chapters deal with abnormalities in metabolism, including auto-intoxication, and perhaps from the point of view of the general practitioner these are amongst the most important in the book. As to uræmia, we are told that "the experiments of Bouchard and his school present such serious errors of technique and interpretation that they are now largely disregarded," a view with which most observers will agree. This condition is due probably to the more toxic antecedents of the nitrogenous constituents of the urine and not to the substances themselves that are eliminated in the urine.

We have not space to refer to an excellent review of the leading facts and theories of such subjects as eclampsia, acute yellow atrophy of the liver, acid intoxication, chemical diseases of ductless glands, uric acid metabolism, gout, and diabetes. Enough has been said to show the wide scope of the work, the vast range of subjects, as well as the masterly mustering of the "scattered fragments." The author deserves the best thanks of the profession, not only for his labours—his successful labours of compilation—but for the conspicuous fairness with which he sets forth in terse, concise language the views of the various authorities. We feel sure that this work will not only provide a great storehouse of garnered knowledge on a difficult yet fascinating subject, but will serve to stimulate research as well as to guide treatment. We wish it the success which it assuredly deserves.

---

*Practical Sanitation: A Handbook for Sanitary Inspectors and Others Interested in Sanitation.* By GEORGE REID, M.A., M.D. Aberd., D.P.H. Thirteenth edition. London: C. Griffin and Co., Limited. 1906. Pp. 352. Price 6*s.*

THE introduction glances at the progress of sanitary work since 1844, giving some interesting tables showing the effect of the altered conditions on the death-rate. The facts are marshalled and the best practice relating to health questions is brought up to date. There is a chapter on water-supply and distribution, with a welcome one on warming and ventilation, which last subject is much neglected and often but little understood; others deal with sewerage, drainage, and sewage disposal, sanitary and insanitary work and appliances, house construction, infection and disinfection. The last chapter relates to food and the causes and detection of diseased conditions in the same. There is also a voluminous and most useful appendix of the principal statutes affecting the inspector of nuisances summarised by Dr. J. Herbert H. Manley, barrister-at-law. As will be seen, a very wide range of subjects is covered, all more or less associated with the work of sanitary inspectors, and details are given with which they are supposed to be familiar. When it is remembered that these men are paid some 50*s.* per week it seems doubtful if the salary is enough to command efficiency. Dr. Reid has fallen into a few of the pitfalls associated with plumbers' work; in Fig. 51 the water line in the trap is too far from the connexion of the closet. The same defect is shown in an exaggerated degree in Fig. 52. The slop water-closets (Figs. 62 to 65) would seem most unsavoury arrangements.

In discussing the difficulty of connecting lead pipes with iron or stone-ware ones Dr. Reid seems to have overlooked the brass sleeve piece in common use, while the treadle system recommended for urinals in private houses has generally proved unsatisfactory. Recent practice has improved upon the suggested trapping for lavatory basins when fixed in series. As these are usually found in rooms with impervious floors short wastes without traps can be used, delivering into a white glazed channel, which passes into a trap before going through the wall; the waste from this discharges over an external gully. Slop sinks, again, are almost obsolete and generally unnecessary when wash-down closets are used. It is a pity in the chapter on Sewage Disposal that some allusion has not been made to the late Dr. G. V. Poore's dry earth system or to the Liernur system which has lately been coming much to the front for low-level districts. Some of the examples given of insanitary work we hoped were now matters of ancient history. Throughout the author uses the poor plumber as a target for gentle sarcasm, though we venture to suggest that many of the faults here attributed to him were committed by his predecessors. Dr. Reid, however, evidently thinks well of the registered man.

The book contains a vast amount of conscientious work and the subject is ably and comprehensively dealt with. It has a good index and a number of illustrations.

## LIBRARY TABLE.

*The Book of the League of Mercy.* Edited by the Rev. P. H. DITCHFIELD, M.A., F.S.A. London: Bemrose and Sons, Limited. 1907. Pp. 82. Price 5*s.* net.—The publication of an attractively printed *pot-pourri* of stories, verses, and pictures has recently become a recognised method of obtaining funds for various deserving charities; the League of Mercy's album (for that name alone describes it) lies before us and it should find a ready sale amongst the supporters of that excellent organisation over which the Prince and Princess of Wales preside. There are some 50 contributions in the volume and although the excellence of its intention should perhaps free it from the voice of criticism we venture to pick out Canon Beeching's strong little poem, "Fatherhood," and Mr. Herbert Railton's graceful sketch of the Lady Chapel in York Minster as the best out of several good contributions. Mr. Granville Fell has boldly challenged comparison with Blake's wonderful conception in rendering, "When the Morning Stars sang together," but has managed to escape plagiarism in his version. Mr. Austin Dobson contributes a dainty copy of introductory verses and there is considerable variety in the remainder of the book, which we commend to all friends of the League. It has the refreshing grace of a complete absence of advertisements and is admirably produced.

*A Manual of Normal Histology and Organography.* By CHARLES HILL, M.D., Assistant Professor of Histology and Embryology at the North-Western University Medical School, Chicago, &c. Illustrated. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 463. Price 10*s.* net.—This book is intended for the instruction of elementary students and includes a description of the general anatomy of the various organs along with their histological features. "The fundamental facts in histology have therefore been presented in as clear and concise a manner as possible," while "the figures have been selected with considerable care and ...... are to be studied as critically as the text." We quote from the preface. We do not feel sure that the author really expects his elementary students to be critical of his text and illustrations but at least the reviewer may be excused for being so. Frankly, we do not think that the descriptions in the text are well adapted to the needs of beginners. Clearness and conciseness do not necessarily go together and here compression has in places been carried to a point where it renders the meaning obscure, in order to allow of the inclusion of matter which is quite unnecessary in a book of this kind, such as allusions to pathological conditions and to functions of organs quite apart from their structure. The illustrations are better than the text. Many of them are taken from other works and the selection has been wisely made on the whole. Allusions here and there to comparative anatomy are stimulating and we feel that the author might have written a good book if he had confined himself to histology and embryology, omitting details of gross anatomy and the extraneous matter above mentioned and allowing himself rather more space for adequate description of the remainder of his subject. A useful feature of the book is the attention devoted to the teeth, rendering it valuable to dental students. Some coloured diagrams of the development of the uro-genital system are also commendable. The printing and get-up of the book are good and the price is moderate in view of its profusion of figures.

*The American Text-book of Prosthetic Dentistry.* By Various Authors. Edited by C. R. TURNER. Third edition, revised and enlarged. With 916 illustrations. London: H. Kimpton. 1907. Pp. 896. Price 26*s.* net.—This volume illustrates in a striking manner the great advances that have been made during recent years in the teaching of prosthetic dentistry. Although the greater portion of the subject-matter is of such a technical character as to interest only those well acquainted with the mechanical side of the practice of dentistry there are, nevertheless, portions of the book well worthy of the attention of the medical practitioner. The first of these is the excellent chapter on the Human Dental Mechanism, its Structure, Functions, and Relations. The author of this section of the book is Mr. C. R. Turner, and he has succeeded in giving the reader a most lucid account of the variations in the shape of and the movements of the temporo-mandibular articulation, and an admirably illustrated description of the changes which take place in the jaws following on the loss of the teeth. Another section of the book of interest to the medical man is that dealing with the mechanical treatment of palatal defects. The book throughout is well illustrated and we have no hesitation in stating that it is far and away the most thorough work on prosthetic dentistry that has been published.

*First Lines in Midwifery.* By G. ERNEST HERMAN, M.B. Lond., F.R.C.P. Lond., Consulting Obstetric Physician to the London Hospital. With 83 illustrations. New edition. London, Paris, New York, and Melbourne: Cassell and Co. 1907. Pp. 222. Price 5*s.*—The number of times this little work has been reprinted since it first appeared in the year 1891 shows how great has been the demand for it and how well it has fulfilled the purpose for which it was written. In this new edition the most interesting change is a supplementary chapter containing the rules of the Central Midwives Board, with explanatory notes by the author interpolated. Midwives should find these of the greatest assistance and their introduction considerably increases the value of the book. Dr. Herman's clear and methodical style of writing is well known and this is one of the best books of its kind, if not the best. It forms a very useful introduction to the study of midwifery for students and a most excellent manual for midwives.

## JOURNALS AND MAGAZINES.

*The Liverpool Medico-Chirurgical Journal.*—The July issue of this journal contains, as usual, many papers of interest. Only a few can be mentioned. A series of observations on cases of Pulmonary Syphilis are recorded in the papers of Dr. John Hay, Dr. R. J. M. Buchanan, and Dr. John Elliott; the diagnosis appears, however, somewhat doubtful in the two instances reported by the last writer. Dr. W. B. Warrington writes on Common Nervous Diseases, pointing out the frequency of disseminated sclerosis (contrary to the usual view as to its rarity), the comparatively favourable outlook in some cases of tabes dorsalis owing to the disease becoming stationary, the use of lumbar puncture and of trephining, and many other useful observations. Dr. William Alexander continues his valuable study of Epilepsy and Dr. Leslie Roberts his articles on Seborrhœa. Dr. Ernest E. Glynn discusses the subject of Pulmonary Embolism and Thrombosis, holding that the latter is often the actual occurrence in cases of sudden death.

*The Birmingham Medical Review.*—The July number of this review contains the second Ingleby lecture by Dr. Thomas Wilson, dealing with Pelvic Inflammations in the Female, the present lecture being devoted to puerperal infections and their treatment and to gonococcal and chronic pelvic inflammations. This lecture was published in THE LANCET of July 6th. Dr. Smallwood Savage contributes a valuable paper on Vaginal Cæsarean Section as treatment for conditions in which there is undilatable or imperfectly dilated cervix. He gives notes of two cases in which he made use of this method, first suggested by Dührssen—viz., one of epithelioma of the cervix and one of placenta prævia. The paper deserves careful perusal.

*The Medical Chronicle.*—The principal article in the July number of this magazine is an abstract of a thesis by Dr. George G. Packe on Cancer of the Stomach, founded on a study of statistics derived from the post-mortem records of St. George's Hospital. The author concludes that primary cancer arises more frequently in the stomach than in any other internal organ, and that there has been a greater increase in the incidence of the malady on this organ than on any other part of the body. Syphilis and tuberculosis seem to be antagonistic to the development of this form of cancer or, at all events, rare concomitants or antecedents. Mr. E. D. Telford records a case of Acute Dilatation of the Stomach but throws no light upon the causation of the condition.

*The Middlesex Hospital Journal.*—A very entertaining article on Some Experiences in China, written by Mr. Dansey Smith of the Wesleyan Mission Hospital, Wuchow, appears in the July number of this journal. Anecdotes are given of the superstitions, medical and otherwise, prevalent among the Chinese, of their wonderful powers of recovery from injuries, and of the experiences of a European medical man among them. Mr. Somerville Hastings relates two cases in which trial was made of thiosinamin—one of keloid after burns in which no good effects were produced and one of chronic indurative ulceration of the leg in which the treatment was apparently beneficial.

## MEDICINE AND THE LAW.

### *Three Criminal Cases: Richard Brinkley, Marie Leslie, and Charles Smith and May Churchill.*

THREE criminal trials, taking place during the same week, have recently attracted a considerable measure of public attention and have all presented medical features. Richard Brinkley, who was executed on Tuesday last, attempted to poison a man for whose removal he had a well-proved motive, by putting before him a bottle of stout into which he (the prisoner) introduced prussic acid after he had himself drunk from the bottle. Two persons against whom Brinkley had no design drank the stout instead of the man for whom it was intended, so that the latter remained alive to give evidence against his would-be murderer. A feature of note in this case was the ease with which the prisoner had obtained a considerable quantity of prussic acid. It was suggested that he had stolen it, or some of it, from a man described as a "specialist in the diseases of birds, who also treated dogs and cats." This "specialist" stated that he had on two occasions given Brinkley about 60 drops of prussic acid in response to a story that he wanted to poison a neighbour's dog, and that he had also left him alone in the room where the drug was kept in such circumstances that he might have helped himself to it. This points to a dangerous state of affairs capable of existing in spite of the precautions prescribed by the law with a view to control the trade in poisons. A similar point in connexion with Brinkley has been mentioned since his trial. It has been stated that 14 years ago an inquest was held upon a girl with the result that the jury found that she had committed suicide, the evidence showing that if she did so it was with arsenic taken by her from a box in Brinkley's room. In this box were found prussic acid, arsenic, strychnine, and chloroform, for which he accounted by a story that he was engaged upon chemical research in connexion with photography and electrical engineering. The acquisition of such a deadly armamentarium by a murderously minded individual affords a striking commentary upon the working of the laws regulating the sale of poisons. He also stated that he had given the girl shelter, after which she had cohabited with him. Without being uncharitable we may surmise that Brinkley was at that time an object of considerable suspicion to the police, but there seems to have been corroboration of his story that the deceased girl broke into the box which contained the poisons mentioned. He was evidently a man who had obtained some knowledge of poisons and it seems probable that he had studied them with a deliberate intention of using them criminally, for after he had denied this in cross-examination a piece of paper which had been found in his possession was put into his hand by counsel. It contained the following note: "Nitrate of silver with ordinary water will turn the water milky, but if it is put into distilled water the water undergoes no change." It was suggested by the prosecution that this information was intended to be used in order to administer poison to an unsuspecting victim. Brinkley's explanation was that the "specialist" already mentioned had supplied him with it as a test for distilled water as he (Brinkley) always drank distilled water at home, and he wished to be able to ascertain whether the druggist was really providing him with this somewhat unusual beverage for a working carpenter.

The second case referred to above, that of the woman Leslie, who was convicted of obtaining large sums of money by false pretences from exceedingly foolish dupes, is to be noted on account of the course adopted by Mr. Justice Darling, who expressed himself in accord with the suggestion of her counsel that her crime was that of a person not responsible for her actions. His lordship allowed a verdict of guilty to be returned in the ordinary way, and indeed there was no evidence before him to justify any other, and he then passed a sentence of five years' penal servitude, but in doing so he dwelt upon the character of her crime which was one absolutely certain to be discovered almost immediately. To this he added that he thought she needed to be kept under control for a considerable time but that he should leave the question of how long she was to be detained and of how she was to be treated to the Home Secretary. It seems certain that this woman was lacking in the normal powers of restraint which prevent the individual from doing an action immediately advantageous to himself on account of future greater disadvantages, and such a marked instance of this lack of inhibition comes very near insanity. We can understand, however, that the judge's expressions in regard to Marie Leslie may be considerably quoted, and strained in the process, in defence of other persons.

The third of the cases mentioned, that of Charles Smith and of the woman notorious as "Chicago May," was remarkable for the fact that the accused and their intended victim, Guerin, were all professional criminals, good examples of their class. The actual crime could hardly have been committed by persons in their "right mind," even though that mind was naturally prone to crime. The motive claimed by the prisoners themselves was the protection of the woman against an attack which they declared was intended against her by Guerin. Whether they really feared this, or whether Churchill planned Guerin's death in order to revenge herself upon him for leaving her in favour of another woman, to pursue a man and to shoot him in the open street with a revolver in circumstances which rendered their immediate capture almost a matter of certainty was an extraordinary course for experienced criminals to adopt, even when to some extent under the influence of alcohol. It has been stated that Churchill was a victim of the opium habit and, in any case, she and Smith, as well as Leslie and Brinkley, offer interesting subjects of study for the criminologist.

### *Water Used for Washing Motor-car of Medical Man.*

In view of the fact that motor-cars are nowadays so much used by medical men the case of Harrogate Corporation *v.*

Mackay, decided recently, is one of considerable interest. A complaint was preferred by the corporation of Harrogate under the Waterworks Acts against the respondent, a medical man, to recover the sum of 10*s.*, being rent for water supplied by the appellants to and used by the respondent for a motor-car used by him for other than a domestic purpose—namely, for the purposes of his profession or business of a physician and surgeon—during the half-year ending Dec. 25th, 1906. The justices dismissed the complaint but stated a case. Upon the hearing of the said complaint the following facts were admitted or proved in evidence: 1. During the half-year ending Dec. 25th, 1906, the respondent kept a motor-car which he used in and for the purpose of his business or profession as a medical man, although he used it from time to time for purposes of pleasure. 2. The respondent during the said period regularly used water from the appellants' pipes for the purpose of washing his motor-car and for other purposes in connexion therewith. 3. The respondent kept his said motor-car in an outbuilding or premises adjoining his dwelling-house, the rateable value of the whole premises, according to the Poor-law valuation list, being £39, and the appellants had charged the respondent and the respondent had paid the appellants the water rate for water supplied for domestic purposes to the said premises the sum of £1 7*s.* 4*d.* for the half year ending Dec. 25th, 1906. 4. The appellants, purporting to act under Section 34 of the Harrogate Corporation (Waterworks Transfer) Act, 1897, had charged the respondent, in addition to the said rate of £1 7*s.* 4*d.* for water supplied for domestic purposes for the half year ending Dec. 25th, 1906, a sum of 10*s.* for water supplied and used during the same half year for other than domestic purposes, that is to say, for business purposes—namely, for washing his motor-car and for other purposes in connexion therewith. 5. The appellants had charged the respondent and the respondent had paid the appellants without complaint the like rate and rent for the half-years ending Dec. 25th, 1905, and June 24th, 1906. 6. The demand note delivered by the appellants to the respondent for the half-year ending Dec. 25th, 1906, was worded like the previous demand notes delivered to the respondent for the half-years ending Dec. 25th, 1905, and June 24th, 1906, and which he had paid without complaint. 7. The respondent did not give any notice that he objected to the charge or to pay such charge for water supplied to him in the way of his business or profession for the purpose of washing his motor-car and using water in connexion therewith until Dec. 11th, 1906, when he informed the appellants' rate collector that he objected to pay the charge. The appellants, in pursuance of Section 34 of the Harrogate Corporation (Waterworks Transfer) Act, 1897, where water is used for other than domestic purposes, make a charge in the case of a motor-car of £1 per annum, in the case of horses 5*s.* each per annum, and in the case of the washing of four-wheeled carriages 7*s.* 6*d.* each per annum, and of two-wheeled carriages 5*s.* each per annum. Under Section 30 of the same Act "the corporation shall not be bound to supply with water otherwise than by measure any building used by an occupier as a dwelling house whereof any part is used by the same occupier for any trade or manufacturing purposes for which water is required"; and Section 34 of the same Act enacts: "The corporation may supply water for other than domestic purposes on such terms and conditions as the corporation think fit, and may supply water by measure either for domestic or other purposes." Section 12 of the Waterworks Clauses Act, 1863, enacts: "A supply of water for domestic purposes shall not include a supply of water for cattle or for horses or for washing carriages where such horses or carriages are kept for sale or hire, or by a common carrier, or a supply for any trade, manufacture, or business, or for watering gardens, or for fountains, or for any ornamental purposes." For the appellants it was contended the water used by the respondent for the purpose of washing, &c., his motor-car was not used for domestic purposes; that as the motor-car was mainly used by the respondent in the practice of his profession it was used in a business and that water supplied for use on such motor-car was supplied for a business purpose within Section 12 of the Waterworks Clauses Act, 1863, and that the appellants were empowered by virtue of the Harrogate Corporation (Waterworks Transfer) Act, 1897, Section 34, to supply water for other than domestic purposes on such terms and conditions as they thought fit; and, further, that the appellants, having supplied water to the respondent and charged him a rent therefor, which rent the respondent had paid without complaint for two half years, there was an implied contract between the appellants and the respondent that if the appellants supplied water to the respondent and he used the water for washing, &c., his motor-car for the half year immediately following the half year ending June 24th, 1906, the respondent would pay the appellants the same rent that had been charged to, and paid by, him for the two previous half years. For the respondent it was contended that the supply of water for domestic purposes included the supply of water for a motor-car used by the respondent in the practice of his profession of a physician and surgeon; that the Waterworks Clauses Act, 1863, Section 12, applied only to a supply of water for horses or for washing carriages when such horses or carriages are kept for sale or hire or by a common carrier; that the respondent did not keep his motor-car for sale or hire, and that he was not a common carrier, that all the respondent wanted water for was for washing his motor-car, and did not want water for a business, and that the water-rate charged by the appellants to the respondent for water supplied to him for domestic purposes included the water supplied to, and used by, him for his motor-car. The justices were of opinion that the water used by the respondent for the said motor-car was not water used by him for a business. The Divisional Court held that the justices came to a right decision and dismissed the corporation's appeal.

### *The Duty of Post-mortem Delivery.*

Dr. Wynn Westcott recently held an inquest upon the body of a woman who while in labour had died suddenly from rupture of the uterus before the child had been expelled. The deceased had previously borne 11 children and in none of these cases had she experienced a difficult labour. The post-mortem examination showed that the muscles of the uterus and of the heart had undergone extensive fatty degeneration; the uterus had ruptured from the cervix upwards. Her parturition was being assisted by a certified midwife who, in conformity with the regulations issued by the Central Midwives Board, sent for a medical practitioner as soon as the labour proved itself to be irregular. Upon the arrival of the medical man the woman was already dead. The evidence showed that there was a difference of opinion as to whether the unborn child was living when the medical man first saw the deceased woman: he believing that it also was dead did not proceed to deliver the child from the body of the dead mother. Such a case raises the question whether it is the duty of a medical practitioner to deliver a child whom he finds to be still alive within the uterus of a deceased woman. He may alternatively perform the true Cæsarean section and rapidly allow the infant's respiration to commence, or apply forceps and extract the child in the hope that it may still be living when its mouth and nose reach the open air. The advice usually given is that the decision as to what should be done, if anything, to rescue the child should be left to the husband, or, if he is not available, to his next friend. The husband of the deceased woman, having had all the circumstances of the case put before him, may desire that everything possible should be done and that with all speed in order that he may be granted living issue. Certain legal technicalities arise in this connexion. Thus, there are occasions when a child in order to benefit must be born during the continuance of the wedlock of the parents, that is, for example, during the lifetime of the mother; further, it has been disputed whether a child extracted by the Cæsarean section is really "born" at all; it might, indeed, be said that a living child within a dead woman must already have commenced its separate existence and hence was a person for legal purposes. The question of the necessity of Christian baptism in certain of these contingencies must not be overlooked if the parents are known to hold theological views on this matter.

---

VACCINATION FEES IN CARDIFF UNION.—The board of guardians of the Cardiff Union has decided to reduce the vaccination fees in Barry and Penarth, both urban districts, to 3*s.* 6*d.*, the minimum sum allowable. In the more rural districts the fees are reduced to 4*s.* and in the town of Cardiff the minimum fee of 2*s.* 6*d* is to be paid. The sub-committee, which first considered the question, suggested a fee of 3*s.* for Cardiff but the full board out-voted the proposal by a large majority.

### THE
# BRITISH MEDICAL ASSOCIATION.
### MEETING AT EXETER.

## THE SECTIONS.
### MEDICINE.
### Friday, August 2nd.

*Discussion on Rheumatoid Arthritis and the Morbid Conditions which Simulate it, with Special Reference to Pathology and Treatment.*

Dr. **Arthur P. Luff** (London), in opening the discussion, pointed out that the term "rheumatoid arthritis" was objectionable, as suggesting a causal connexion with rheumatism. If, however, it was employed to mean an arthritis somewhat resembling some forms of rheumatism, the term might be retained, although the name "arthritis deformans" was less open to objection, but he suggested that in that discussion the term "rheumatoid arthritis" should be retained owing to its long usage. In opposition to those who regarded rheumatoid arthritis as a very complex disorder with many factors concerned in its etiology he held that although there were several infective diseases of the joints which somewhat resembled it, yet that rheumatoid arthritis was a distinct clinical entity. It was a constitutional disease, not a local one, the affection of the joints being only a part of the morbid process. He regarded it as a disease due to micro-organisms gaining access to the blood in the majority of cases probably through some chronic catarrh of the alimentary tract, although the invasion might occur from the nose, pharynx, or air tubes. They found their way to the joints where they produced inflammatory changes resulting in ulceration, erosion, destruction, and, coincidently as a rule, in hypertrophy also. During their growth toxins were produced and discharged into the circulation, giving rise to the nervous symptoms of the disease and producing the local sweatings and pigmentation associated with it. That it was an infective disease was shown by the febrile disturbance which always accompanied the early stages of the disease, by the rapidity of the pulse, the local sweatings, and by the progressive involvement of many joints. In its early stages it might very closely simulate subacute rheumatic fever but it might be distinguished from it by not reacting to treatment with salicylates. It usually commenced in one joint and then rapidly spread to others. Shortly after its commencement it was always polyarticular. He was of opinion that the so-called forms of monarticular rheumatoid arthritis were always traumatic in origin. It would be better to restrict to these forms the name "osteo-arthritis." Rheumatoid arthritis occurred in two forms—acute and chronic—both being due to the same infective cause. It was commoner in females than males. In the acute form it was generally met with in earlier adult life. The chronic form might be a later stage of the acute disease, or, as was more frequently the case, it might be chronic from the first. It occurred in middle life and in females, especially about the climacteric period. Comparatively slight injuries of a joint, especially of a small joint, might lead to rheumatoid arthritis. The injuries were frequently the outcome of excessive work and strain, especially in elderly and enfeebled persons with a diminished power of resistance. In the acute form the synovial membranes were primarily and mainly affected, while the ligaments were softened and infiltrated, presenting the well-known spindle-shaped enlargements of the joints. The cartilages were damaged secondarily, and it was not until the disease had assumed the chronic form that the signs indicative of destruction of cartilage became evident, accompanied with cartilaginous and osteophytic outgrowths. Cases of Heberden's nodes represented the mildest degree of the disease. They were due to a very chronic form of rheumatoid arthritis. This type was more commonly met with in women than in men, and usually at or after the middle period of life. The nodules were due to enlargement of the ends of the bones, which were frequently covered by a pouch of the projecting synovial membrane, acting somewhat as a bursa. In the great majority of cases rheumatoid arthritis was a primary disease, but it was probable that in a small number of cases an antecedent attack of rheumatic fever, or of some form of septic arthritis, such as gonorrhœal arthritis, or even an acute attack of gout, might have left the joints in such a vulnerable condition that they might subsequently become the seat of true rheumatoid arthritis. Dr. Luff protested against the tendency to invoke uric acid as a cause of the joint condition in this disease. Any debilitating condition might predispose to this disease, and especially of late years he had seen many cases of rheumatoid arthritis which had followed repeated attacks of influenza. Rheumatoid arthritis, if left untreated, tended to spread from joint to joint and produced progressive destruction of the joint tissues. For the successful treatment of this disease it was essential that the treatment should be commenced while the disease was in its early stages; hence the importance of an early recognition of the malady and of its distinction from gout and rheumatism. The treatment must be persevered in for a long period of time, generally a year or two, and during the treatment everything possible must be done to improve the general condition of the patient. If rheumatoid arthritis was seen and recognised early in the acute stage it was curable. In the later chronic stages it was possible to arrest the disease, to remove the pain, and to secure greater movement of the joints, but not to restore them to their normal state. The not infrequent mistake of diagnosing rheumatoid arthritis as gout and the consequent placing of the patient on a restricted and spare diet had undoubtedly led to the development of severe and incurable forms of the disease. It was essentially a disease that required good and nutritious feeding. The diet should be as liberal and as good as the patient could digest and animal food should be partaken of freely, though not to the exclusion of vegetables. A moderate quantity of wine or stout should be taken with lunch and dinner. The drugs recommended by Dr. Luff were guaiacol and potassium iodide. He had employed guaiacol in over 3000 cases and as the result of his experience he did not hesitate to say that, if administered in sufficient quantities and for a sufficiently long period, it was capable in the great majority of cases of arresting the disease, of diminishing the size of the joints, of permitting increased movements, and of relieving pain. It was useful in both the subacute and chronic forms of rheumatoid arthritis. He believed that the guaiacol exercised an inhibiting effect upon the micro-organisms responsible for the production of rheumatoid arthritis. Guaiacol should be given in cachets in the form of the carbonate. At first from five to ten grains of the carbonate of guaiacol should be given three times a day and the dose should be increased by one to two grains each week until from 15 to 20 grains were being taken in each dose. It was essential that this treatment should be continued for at least 12 months. The beneficial effects of the guaiacol were very much increased by administering at the same time a mixture containing potassium iodide, the depressing effect of the iodide being counteracted by its combination with tonics. This treatment yielded much better results than prolonged treatment with arsenic and iron. If the treatment was commenced in the comparatively early stages of the disease then recovery with very little deformity might result; but even if after arrest of the disease much deformity resulted, very considerable mobility of the joints might be promoted by baths, superheated air, massage, and passive movements. Douche massage was the most effective form of treatment with hot water, and perhaps next to that ranked peat baths and brine baths. Electric light baths, in which the affected joints were bathed in the heat and light rays reflected from a number of incandescent electric lamps, were also beneficial in many cases. Regulated movements and massage were of great use in overcoming the stiffening and fixation of the joints and the muscular wasting in their vicinity. In regard to climate, dry heat benefited cases of rheumatoid arthritis whereas damp cold increased the disease. Seaside resorts were not suitable for most cases. As a winter resort there was no better climate than that of Egypt.

Dr. T. S. P. **Strangeways** (Cambridge) stated that he was engaged at Cambridge on a research into the pathology and etiology of the disease, which he did not regard as a clinical entity but as a type. He regarded rheumatoid arthritis as a heap to which any joint disease was thrown which was not understood. He expressed himself as emphatically disagreeing with most of Dr. Luff's statements. A study of the literature and of the clinical notes of cases was practically valueless owing to the various different diseases of joints recorded under this heading.

True advance could only be achieved by a systematic study of the morbid anatomy and histology of cases of this type. He indicated the general outlines of the research upon which he was engaged, and briefly referred to some of his results. He differed from Dr. Luff in regard to the relationship of gout to rheumatoid arthritis since in some cases examined microscopically he had found urates in the tissues, and a study of the metabolism of a number of cases had shown that the output of urates was altered. In regard to the first joint attacked, in the female the hands were first involved in 27 per cent. of the cases, in the male in only 7 per cent. In his opinion examination by the x rays afforded the most valuable information and he differentiated three forms of the joint condition found in these cases: first, an infective form in which no changes were observed by the x rays; secondly, an atrophic form which was probably a chronic infective variety; and thirdly, a hypertrophic form in which there was often a deposit of urates.

The President of the Association (Dr. Henry Davy) said that there was a misconception about the climate of Devonshire in regard to this disease, which, so far as his experience was concerned, was rare in that county. He attributed the bad reputation which it enjoyed in this respect to the slight gout which was formerly common as a result of the lead poisoning which arose from the manner in which the cider so largely used there was prepared before the present improvement in the methods of preparation. In his opinion, early gout was frequently diagnosed as rheumatoid arthritis. He strongly supported Dr. Strangeways's view that various joint conditions clinically different were included under the general term of rheumatoid arthritis. In illustration, he alluded to the condition of tuberculous rheumatism described by French observers in association with tuberculous disease and maintained that the existing confusion would continue until all these conditions were separated. In regard to the infective origin of the condition he advised that they should not too hurriedly assume such an origin for all cases.

Professor T. McCrae (Baltimore) agreed with Dr. Luff in regarding rheumatoid arthritis as a more or less distinct clinical entity and was of opinion that the different types described by Dr. Strangeways were different forms or stages of the same disease, and stated that careful examination of the joints in some cases would reveal different forms of the condition in the same patient. He pointed out the similarity to be observed in the anatomical features with those produced by other infective processes of joints, such as gonococcal arthritis and the typhoid spine in spite of their clinical differences. He agreed with Dr. Luff that rheumatic fever and rheumatoid arthritis were entirely different diseases and emphasised the importance of diagnosis, since he regarded it as a reproach to medicine if cases of rheumatoid arthritis were treated for a long time as rheumatism. He maintained that rheumatoid arthritis involving the spine was much more common than was generally recognised, especially a local form involving three or four lumbar vertebræ, which was responsible for many cases of pain in the back and sciatica. He insisted on the importance of the x rays in diagnosis and in regard to treatment advised that the case should be as carefully dieted and treated as one of pulmonary tuberculosis and on similar lines. A scheme should be prepared for the patient to follow, the diet being liberal and nourishment being given between meals if necessary. Energetic local treatment was important and he emphasised the value of the application of the Bier methods for relief of pain both in acute and chronic forms. It was important to make the patients take a personal interest in the treatment of their joints, and by this means considerable improvement had been obtained in some of the poorer patients at Baltimore. He differed from Dr. Strangeways regarding the value of the study of the morbid anatomy and histology of the disease after death, since the necropsy was usually so very remote from the origin of the disease. More useful results were likely to be obtained from the investigation of cases operated upon early in the course of the disease, which was now sometimes done in America. In regard to the mon-articular cases careful examination would usually reveal slight lesions in other joints.

Dr. W. R. Gore (Llandrindod Wells) regarded the origin of the condition as undoubtedly bacterial, probably due to an infection from the gastro-intestinal canal. There was almost always some gastro-intestinal disorder in these cases, and it would seem as if such a condition might lead to gout in one person and to rheumatoid arthritis in another. In regard to diagnosis, the greatest difficulty arose in distinguishing between early gout and rheumatoid arthritis. In his opinion the uric acid craze had done much harm in connexion with this disease. In regard to treatment, this should be systematic and carried out for a long time. It was important to improve digestion and to give nutritious foods; fats and proteids should be given abundantly but fermentable foods should be avoided. The value of treatment at Llandrindod was chiefly due to its beneficial effect upon the digestive processes. In regard to local treatment, electric-light baths and massage were useful. It was also of great assistance to promote sweating, since it was probable that arthritic toxins were excreted by the sweat. He confirmed the views expressed as to the usefulness of Bier's method.

Mr. W. J. Midelton (Bournemouth) called attention to the value of the method recommended by Dr. P. W. Latham of counter-irritation to the spine. Mr. Midelton did not believe that the disease was due to a specific micro-organism but thought that pyogenic organisms were at work in all cases and that the condition was very largely a chronic septicæmia. He was surprised that no speaker in that discussion had referred to the effects of the disease upon the central nervous system. He would prefer to call it chronic cerebro-spinal toxæmia. He agreed with Professor McCrae in regard to the value of treatment on the lines adopted in cases of tuberculous disease.

Dr. W. J. Tyson (Folkestone) was of opinion that a great deal might be effected in regard to the prevention of this disease by the regular and systematic daily exercise of all the joints and by careful attention to the ventilation of rooms. He had seen the disease stamped out from a row of cottages where it was previously rife by the cementing of the floors. He was convinced that much might be done in early cases by simple measures.

Dr. Preston King (Bath) had no doubt that there was a real connexion between rheumatoid arthritis and gout, and thought that there were many cases which could justly be called by the old name of "rheumatic gout." It was difficult in some cases to see any clinical differences between cases following gonorrhœal infections and those from other causes such as from suppuration about the teeth or from abscesses elsewhere. He referred to the confusion resulting from the personal factor in observing and recording cases of the disease and looked forward with hopefulness to the results of Dr. Strangeways's work, from the elimination of that factor.

Dr. J. O. Symes (Bristol) said that rheumatoid arthritis included two distinct varieties of joint condition, one in which the fibrous tissues were alone involved, to which the name of fibro-arthritis was applied, and the other in which the bony structures suffered, called osteo-arthritis, and in his opinion the condition of fibro-arthritis did not pass on into that of osteo-arthritis. In both kinds there were two chief exciting causes—viz., bacterial infection and some metabolic change possibly leading to an auto-intoxication. In regard to the bacteriology, although he had repeatedly looked for it he had never found Bannatyne's bacillus but had found various cocci. He agreed with Dr. King that rheumatoid arthritis might arise from gout. In distinguishing between subacute rheumatism and rheumatoid arthritis he pointed out that in the latter condition there were often a rapid pulse, cold sweats, a low temperature, some pigmentation, and an exaggeration of the reflexes, while the joint affection was often symmetrical in its distribution, and on cytological examination of the fluid withdrawn from the joint the cells were found to be chiefly of the mononuclear type, whereas in rheumatism the polymorphonuclear forms were in excess.

Dr. Michael G. Foster (London and San Remo) discussed the influence of climate on the treatment of this disease. He regarded it as of value in the relief of pain and in the improvement of general nutrition. It was impossible to forecast the effects of climate, but within limits the warmer the place the better. In his experience the effect of the Riviera on these cases was by virtue of its sunshine. He agreed with Professor McCrae in regard to treatment of these patients like those with tuberculosis. He recommended a full diet with stout to drink. Drugs were useless except for the relief of pain. Electric baths, passive movements, and massage were useful.

Dr. D. B. Lees (London) was of opinion that there was great need of further analysis or definition, but he thought that after separating all cases definitely due to gout and rheumatism and cases in which both had a share, all cases due to syphilis or tuberculosis, all those of gonorrhœal origin, and the condition of tabetic arthropathy, there was still a residuum of cases left which might be called rheumatoid arthritis. He alluded to the cases in children described by Dr. G. F. Still in which, in addition to the joint changes, there was also enlargement of the spleen and of the lymphatic glands—a condition which, he thought, must be microbic in origin. Another class of case was that occurring in young adults, chiefly women, with an onset like that of true rheumatism, and some of these cases he believed to be distinctly rheumatic. He recommended doses of salicylates in these cases of what might be regarded as of heroic magnitude—viz., up to as much as 300 to 400 grains a day given in ten doses. He began with small doses, increasing until toxic symptoms developed, then withholding the drug for three or four doses and beginning again with half the doses and again increasing rapidly. With each dose twice as much bicarbonate of sodium was given as salicylate. In regard to the chronic type with enlargement of many joints, he was of opinion that one cause in women was the limitation of the water taken into too small an amount daily.

Dr. F. J. Poynton (London) stated that, working with Dr. A. Payne, he had isolated a micrococcus from a joint and by it produced a rheumatoid arthritis in rabbits. Working with the rheumatococcus he had also found that it could produce a periarthritis and an osteo-arthritis, as well as a synovitis. He differed from Professor McCrae and thought that rheumatoid arthritis could be of rheumatic origin. He also believed in the old view as to some cases being of gouty origin and thought that the gouty inheritance afforded a good soil for the exciting agent of rheumatoid arthritis.

Dr. A. W. Sikes (London) agreed with Dr. Poynton as regards the relationship which might exist between these cases and rheumatism and gout. He referred to the four groups of causes usually admitted—viz., metabolic disturbances, gastro-intestinal derangements, nerve conditions, and bacteria. He thought physical exercises were of value and had seen cases of slight rheumatoid arthritis of the knees improved by bicycling.

Dr. E. L. Fox (Plymouth) disagreed with Dr. Davy in regard to the rarity of the disease in Devonshire, for he had seen most severe cases of it in Plymouth. He regarded drugs as practically useless.

Mr. J. W. Draper (Huddersfield) agreed with Dr. Tyson as to the bad effect of damp in houses and the value of concreting the floor.

Mr. V. T. Greenyer (Hove) called attention to the value of opening the joints and washing them out.

Dr. W. Odell (Torquay) had seen good results from the salicylates in certain stages. He believed in the use of guaiacol and hypophosphites and had seen good results from the administration of tablets of ichthyol.

Mr. T. Morrell Thomas (Newport, Mon.) recommended the breaking down of adhesions under ether.

The President of the section, Dr. W. Gordon (Exeter), expressed his gratification at the valuable nature of the discussion. He confirmed the value of guaiacol carbonate in the treatment of the disease.

Dr. Luff, in reply, confirmed the remarks of Dr. Davy in regard to the importance of early diagnosis. He differed from Dr. Lees in regarding the reaction of any case to salicylates as definitely establishing it as rheumatism, since in his opinion true rheumatoid arthritis was not benefited by them. The use of Bier's method was of value only when a few joints were affected. He had found Dr. Latham's method of value only in cases of spinal arthropathies.

---

## SURGERY.

### Thursday, August 1st.

Mr. J. Bland-Sutton (London) opened a discussion on

*The Indications for Cholecystectomy*

by saying that it was now fully decided that bile was purely excrementitious. The liver was an organic filter for the blood of the portal vein, removing from it not only toxins but also microbes which had been absorbed from the gastro-intestinal tract. Observation failed to show that in a healthy gall-bladder any chemical change took place in the bile, except an alteration of colour and a slight admixture of mucus. Observation and experiment taught them that gall-stones were the result of pathological changes of the walls of the bile-ducts and gall-bladder. It was formerly thought that these changes were due to direct infection from the duodenum through the common bile-duct, but it was now known that the worst forms of cholelithiasis, cholangitis, and cholecystitis were due to toxins and germs which had been excreted by the liver with the bile. It must also be recognised that anything that caused stasis of the bile favoured the formation of gall-stones and also it was important to note that in 75 per cent. of all cases of gall-stones they had originated in the gall-bladder. The functions of the gall-bladder were of very little importance. Anatomy, human and comparative, taught them that absence of the gall-bladder entailed no disadvantage. Observations on the dead showed that disease destroyed it very often without causing any inconvenience to the individual. Pathological observations and the experience of surgeons were equally eloquent in proclaiming the dangers and catastrophes accompanying many diseased conditions of the gall-bladder which might be obviated by a timely operation, and the accumulated experience of many surgeons showed that the most satisfactory consequences were obtained by treating the gall-bladder, when it required surgical intervention, in the summary fashion in which they now dealt with the vermiform appendix. The morbid conditions of the gall-bladder which were best suited for cholecystectomy were: (1) Injury to the gall-bladder; (2) calculous cholecystitis; (3) acute (non-calculous) cholecystitis; (4) perforating ulcers of the gall-bladder; (5) mucocele (hydrops vesicæ fellcæ); (6) chronic cholecystitis (empyema); (7) biliary fistula; and (8) primary cancer, sarcoma, and endothelioma of the gall-bladder. In a case of injury removal was much the best operation; the organ was damaged and removal was easy. When calculi were present in the gall-bladder it was certain that the mucous membrane of the gall-bladder was diseased; and as most calculi came from mucous catarrh of the bladder, if the gall-bladder was left there was a chance of recurrence of the disease, while if it be removed recurrence could not occur. Again, in some cases of gall-stones in the gall-bladder the cystic duct became obliterated and in such a case it was obvious that removal must be the correct treatment. In all cases of removal of the gall-bladder it was necessary to be absolutely certain that the common bile-duct was pervious. In acute non-calculous cholecystitis it was equally advisable to remove the gall-bladder, for the damage to the mucous membrane could not be completely recovered from, just as in an acute appendicitis the appendix must be removed. Perforating ulcers of the gall-bladder could be divided into those occurring (1) in calculous cholecystitis, (2) in the process of the formation of a fistula, and (3) in cholecystitis without calculi; these were the simple forms, but it might also occur from typhoid ulceration and in the final stage of malignant disease of the gall-bladder or bile-ducts. The signs of perforation were those usually met with in perforation of hollow abdominal viscera and in most cases it was diagnosed as due to a perforating appendicitis in an unusual situation. When perforation had occurred it was better to remove at once the gall-bladder and not to make any attempt at closing the perforation. A mucocele of the gall-bladder was often called hydrops; in this condition the cystic duct was blocked and the bladder might be distended to almost any size. The mucus might be thin or it might be thick; in the latter case if gall-stones were present they might be described as "in aspic." Sometimes a rod-like stone occupied the centre of the gall-bladder and around it was the mucus. Excision gave good results in mucoceles. Sometimes the patient might be perfectly well in a fortnight. When cholecystitis became chronic pus collected and an "empyema" was formed, or a mucocele might become infected. In these cases of abscess of the gall-bladder complete immediate removal was far better than drainage. When suppuration occurred in other similar viscera removal was now the recognised treatment, as in pyonephrosis, pyosalpinx, and suppurating ovarian cysts. Fistulæ might arise in two ways: they might be spontaneous or they might be the result of an operation. If bile was discharged from the fistula, then it was certain that the common bile-duct was blocked; if only mucus was discharged then the cystic duct was blocked. The surgeon must be sure that the common bile-duct was clear before he attempted to remove the gall-bladder. For primary malignant disease of the gall-bladder removal was the best treatment if the case was seen early, but clinically recurrence was extremely common. In fact, usually by the time the disease was recognised the opportunity of complete removal had passed. Mr. Bland-Sutton had only once in 15 years felt justified in removing a malignant gall-bladder. It was found to involve the colon and a portion of that was removed: then it was discovered that the duodenum was also affected and part of that was also taken away, but there was some of the disease unavoidably left and the patient died 14 weeks after the operation. In discussing the comparative mortality of cholecystotomy and cholecystectomy it was important to put the cases into three classes: in one class those performed for acute cholecystitis, especially the perforative cases; then in another class those for chronic cholelithiasis; and, lastly, operations for primary malignant disease of the gall-bladder should form a class by themselves. The idea of Mr. Bland-Sutton's paper may be summed up as follows: "The routine treatment of affections of the gall-bladder should be excision."

Mr. A. E. MAYLARD (Glasgow) commenced by denying that the gall-bladder had no function. It had a very definite function, for it stored bile and therefore it was well not to remove it unless there was definite need for doing so. Drainage of the gall-bladder was really very effective in many cases and it was all that was needed. Patients might do well immediately after an operation but the question was, How were they a long time, say some years, after the operation?

Mr. CHARTERS J. SYMONDS (London) gave a *résumé* of his work on the gall-bladder from November, 1901, to the present time. During this period he had performed 23 cholecystectomies; in five cases he had removed the gall-bladder and also drained the bile-ducts and in 16 cases he had done choledochotomy. In one case there was a biliary fistula for two months but after that it closed; in one other case there was a biliary fistula for nine months with jaundice but this fistula also finally closed and the jaundice disappeared. Four of the patients died, three as the direct effect of the operation; in the other case pneumonia appeared and death occurred three weeks after the operation, but it was not unreasonable to think that death was not due to the operation. The operation of cholecystectomy might be simple as a rule, but sometimes the difficulties were great, and apparently cardiac reflexes might be excited which might lead to a fatal result. In the cases in which the gall-bladder was not excised seven were treated by simple drainage, and in five others by drainage combined with choledochotomy; in two cases cholecyst-duodenostomy was done. Amongst these cases there were two deaths, and in one of these fatal cases malignant growth and calculi were present, and in the other the death was due in part to the length of the operation and in part to the anæsthetic. It was important not to lay down any hard and fast rule that cholecystectomy should always be performed; not only the character of the disease present must be considered but also the condition of the patient. The conditions for which these operations were done were: in 17 cases there were calculi, in three cases calculi and cholecystitis, and in one case there was deep jaundice with calculi; in this latter case he removed the calculi and drained. There were three cases of stricture of the cystic duct; in one case there were adhesions between the gall-bladder and the duodenum; in two cases there was chronic suppuration with calculi; and in one case hydatids were present. In two cases pancreatic growths were present and in three there was acute cholecystitis; in these two sets of cases drainage was performed. One objection to cholecystotomy was said to be the tendency to the recurrence of gall-stones, but it was very doubtful if this often occurred. If the wall of the gall-bladder was thick and white then excision was certainly best, as it was also if no bile but only mucus was present in the gall-bladder. If distension of the gall-bladder was due to the presence of gall-stones in the common duct, when these had been removed then it was well to remove the gall-bladder also, for it would be damaged. If the cystic duct was stenosed then undoubtedly it was better to remove the gall-bladder. In acute cholecystitis it was better to remove the gall-bladder. In one instance, however, though the gall-bladder was soft and black, Mr. Symonds removed a stone but only drained the bladder and packed a tampon round it and recovery followed. The analogy between the appendix and the gall-bladder was only slight, for in the case of the appendix the colon bacillus was very virulent and it was not a frequent cause of cholecystitis. In his opinion, the operation was far more difficult in men than in women and the incision needed was much greater.

Mr. E. STANMORE BISHOP (Manchester) thought that in considering the treatment it was necessary to differentiate clearly between three classes of cases: (1) malignant disease; (2) perforation; and (3) gall-stones. He protested against the routine performance of cholecystectomy in every case. Just as it was possible that the appendix might be useful, as in the performance of appendicostomy, so might the gall-bladder be useful, as in draining cases of cholecystitis and cholangitis, or when the common bile-duct was absolutely blocked.

Mr. J. D. MALCOLM (London) agreed that in many cases removal of the gall-bladder was best but if gall-stones were found in a fairly healthy gall-bladder it was well to be satisfied with drainage. It was important to remember that gall-stones rarely recurred. He had only seen two cases. In one it was possible that a stone had been overlooked at the first operation; in the other case another surgeon had removed biliary calculi five years before Mr. Malcolm saw it, and then a stone had formed around a stitch. With regard to the question of recurrence, it must not be forgotten that symptoms of calculi might be present though there was no stone. A good rule was that if the gall-bladder was not inflamed it was better to leave it. Sometimes it was a good thing to open and drain and then two or three weeks later cholecystectomy might be done. Of the greatest value were early diagnosis and treatment.

Dr. J. WARD COUSINS (Southsea) said that the diagnosis was very difficult. He mentioned a case in which a little child had been ill three days and had been sent into the hospital with a diagnosis of intestinal obstruction. She was moribund and died without an operation. At the necropsy the gall-bladder was found to be full of pus, a recent perforation was present, and general peritonitis had occurred. Dr. Ward Cousins considered that simple drainage was, in many cases, of the greatest benefit, but if recurrence of symptoms occurred cholecystectomy was desirable. In one case he had done a partial excision of the gall-bladder and the patient did very well. As to the function of the gall-bladder, it was no argument to say that we could do without it; that applied to many organs. It probably had a function, though we might not know it.

Mr. SINCLAIR WHITE (Sheffield) showed a specimen of a biliary calculus which had formed around a suture one and a half years after the first operation. He exhibited a convenient form of glass drainage-tube which he had devised for the thorough drainage of the gall-bladder; one end was enlarged so that a purse-string suture could easily retain it in position and the other was attached to a rubber tube leading to a bottle. Excision of the gall-bladder was decidedly a more serious operation than drainage, and it was often unnecessary. He had collected 158 cases of drainage, and in two there was recurrence, apparently due to stones left behind.

Professor IRVING CAMERON (Toronto) considered that in gall-bladder surgery there was room for conservatism. He reminded the meeting that 20 or 25 years ago Lawson Tait had advocated removal of the gall-bladder in all diseases of that organ, but it had been recognised that this was not really an advance, and he thought that 20 years hence Mr. Bland-Sutton's suggestions would have met with the same fate. Cholecystectomy was sometimes necessary, but drainage was the better operation in many cases as in cholangitis with pancreatitis. As to fistulæ, they did not occur if the cases were properly treated. The opening should be kept open until the discharge was found to be free from germs, and then the opening was allowed to close. As to the question of function, he thought that the gall-bladder was useful during sleep for storing bile and that removal of it might interfere with it. In one case of cholecystotomy the patient had intense vomiting, so that mouth feeding had to be given up; then rectal feeding was started, but the rectum soon became irritable and that had to be relinquished. Then he fed the patient through the opening into the gall-bladder and the patient recovered.

Professor W. L. RODMAN (Philadelphia) wished to add to the indications for cholecystectomy gangrenous cholecystitis and small shrunken gall-bladders when drainage was quite impossible. The most important point in the operation of cholecystectomy was to make sure that the common bile-duct was pervious and that there was no obstruction for the head of the pancreas. There was no doubt that the operation was becoming more frequent; probably it was three times as frequent now as it was five years ago. It should not be the routine treatment, for drainage was simpler; but cholecystectomy should be done in all suppurative cases and in primary malignant disease of the gall-bladder, which was certainly commoner than used to be thought. Recurrence after incision for biliary calculi is rare.

Mr. G. P. **NEWBOLT** (Liverpool) thought that for ordinary case of cholecystitis drainage was the best treatment, but the operation to be chosen in any particular case depended partly on what assistance could be obtained for the operation; with comparatively unskilled assistance drainage was the preferable operation.

Mr. **BLAND-SUTTON**, in reply, pointed out that nearly every speaker had mentioned one or two cases of recurrence of calculi when only drainage had been done, or calculi had been left behind, or had formed on sutures. Sometimes, of course, it might be impossible to remove the gall-bladder, but he felt sure that in all diseases of the gall-bladder, when possible, it should always be removed.

Mr. W. **TAYLOR** (Dublin) read a paper on

### *Intestinal Obstruction Based on 30 Cases.*

He described the different morbid conditions which caused the obstruction in the 30 cases on which he had operated. He urged the necessity of immediate operation in all cases of intussusception. Injection could reduce only a small percentage of cases of intussussception, and even when the reduction was apparently complete it might still be partly unreduced. If done early the operation was simple and very successful. In all cases of intestinal obstruction it was desirable to wash out the stomach both before and after the laparotomy.

Mr. J. P. L. **MUMMERY** (London) read a paper on

### *Lesions of the Sigmoid Flexure as a Cause of Chronic Colitis.*

He pointed out that the recent great advances in their knowledge of the diseases of this portion of the bowel depended mainly on the sigmoidoscope. It was important to remember that chronic colitis might be confined to the sigmoid flexure. There were four methods of investigating the condition of the sigmoid flexure; they were: 1. By the sigmoidoscope; for this the lower bowel must be thoroughly emptied; no anæsthetic was required and in skilled hands no pain and even little discomfort were felt; and no damage should be done. 2. Palpation of the abdomen with the patient under an anæsthetic. 3. Examination of the discharges; this method was too little employed at the present time. Two ounces of the fluid stools were sufficient, and a small quantity of formalin should be added. Deutero-albumose might be found in the urine in some cases of ulceration. 4. By laparotomy. Simple inflammation of the sigmoid flexure might be granular, hypertrophic, or ulcerated, but no hard and fast lines could be drawn between these conditions. In some cases ulceration might be present but no pain, the only symptoms being diarrhœa. Of 36 cases in which Mr. Mummery had found definite lesions seven were cases of cancer. The presence or absence of bleeding was of no diagnostic value; mucous casts might sometimes be found. The length of history was of little importance; in one case there had been symptoms for five years. It must not be forgotten that peritoneal adhesions might cause symptoms of chronic colitis. In the treatment of non-malignant colitis rest in bed was of the greatest importance. It was a mistake to give a milk diet; a full generous diet was advisable and especially fat in the form of butter to make the stools soft should be present. Local treatment was important. The fluid was injected when the patient was in the semi-prone position and then he kept the genu-pectoral position as long as possible. A good lotion to start with was a weak solution of sodium bicarbonate and later a 0·5 per cent. solution of argyrol might be employed. At least a pint should be used at each injection, and from time to time it was advisable to examine with the sigmoidoscope to see the progress that was being made. If adhesions were present it was necessary to remove them at once by operation. Sometimes appendicostomy was useful for irrigation. A left inguinal colotomy might be done, but only for acute cases with severe diarrhœa.

Dr. M. G. **FOSTER** (London) asked whether some morbid condition was always visible when the sigmoid flexure was examined with the sigmoidoscope.

Mr. **MAYLARD** asked why the condition should be called sigmoiditis if the whole colon might be affected. He believed in washing out the whole colon through an appendicostomy opening after implanting the lower end of the colon in the abdominal wall.

Mr. **MUMMERY**, in reply, said that in 25 per cent. of the cases nothing abnormal could be seen by the sigmoidoscope. He explained that the sigmoid flexure might be the only part of the colon affected and therefore it might well be called sigmoiditis. In reply to a further question, he said that with the sigmoidoscope it was possible to see as high as a little above the middle of the sigmoid flexure.

Miss L. **GARRETT ANDERSON** (London) read a paper on

### *A Case of Sarcoma of the Small Intestine.*

The patient was a woman, 48 years of age, and she complained of pain in the lower part of the abdomen, but it had no relation to food. There was occasional vomiting, the bowels were loose, and the patient was losing flesh. The abdominal wall was thin and on one occasion peristalsis had been visible. On palpation a swelling was felt to the left of the middle line immediately above the pubes; it was dull on percussion, but the abdomen elsewhere was resonant. The tumour was in front of the uterus and a probable diagnosis was made of subperitoneal fibroid of the uterus. The patient said that she had felt a lump there for nine years. On Jan. 3rd, 1906, the operation was performed. The abdomen was opened and the tumour was found to lie over the pelvic brim; no adhesions were present and the tumour was found to be in the wall of the small intestine, its lower end being ten inches from the ileo-cæcal valve. The tumour measured five inches in length and three and a half inches in breadth and involved the whole circumference of the bowel. Several enlarged glands were visible in the mesentery. The piece of bowel involved by the tumour was excised, the ends of the bowel were closed, and lateral anastomosis was performed. Some of the enlarged mesenteric glands were excised, but it was not found possible to remove them all. Recovery had been complete and she had gained more than a stone in weight; there was no evidence of recurrence. When the tumour was examined after removal it was seen that no ulceration was present and no constriction. Microscopically, it was found to be a small round-celled sarcoma and probably the glands were affected with the same condition, but it is often impossible to distinguish between inflammatory changes in lymphatic glands and a small round-celled sarcoma. The condition found in this case was rare. Among 21,000 necropsies in Vienna sarcoma of the small intestine was found three times; and three cases were also described in the Transactions of the Pathological Society. Obstruction was rare but there was deterioration of the general health. Prognosis was said to be bad, and only one case was recorded where the patient lived for a year after operation. This patient had now survived 18 months, and still seemed to be in good health.

Mr. G. H. **EDINGTON** (Glasgow) read a paper on

### *Cervical Cysts.*

In one case—that of a boy, aged 13 years—the cyst had very wide relations: it extended upwards to the styloid process and projections from it passed between portions of the submaxillary gland. It was lined by vascular granulation tissue and after it was excised it was followed by the formation of a ranula under the tongue on the same side. Two cases of branchial cyst were also described; in one, a boy, eight months old, the fistula opened near the lower end of the sterno-mastoid, and the cyst was lined partly with ciliated and partly with stratified epithelium; in the other the condition was bilateral and the fistula opened nearly on a level with the upper end of the thyroid cartilage; the cyst was lined with squamous epithelium. In all these cases the internal attachments of the cyst were a much better guide to the origin of the cyst than was the external opening. Most of these cysts arose in connexion with the second branchial cleft; some might result from the persistence of the sinus precervica[illegible] The best treatment always was to excise, though this w[illegible] in opposition to the teaching of most of the text-books. [illegible] paper was illustrated with some excellent photographs an[illegible] diagrams.

## FRIDAY, AUGUST 2ND.

Mr. **MAYLARD** read a paper on

### *The Relative Merits of Transverse, Oblique, and Vertical Incisions in Opening the Abdominal Cavity through the Antero-lateral Region.*

Eight years ago Mr. Maylard published in THE LANCET an account of a case of dilatation of the stomach in which he had operated. The abdominal incision was partly vertical and partly transverse. Later a hernial protrusion appeared in the vertical portion of the incision but not in the transverse. In discussing the relative merits of the various incisions for opening the abdominal cavity through the antero-lateral region, they must in the first place consider the anatomical disposition of the muscles, aponeuroses, blood-vessels, and lymphatics. The muscles of the lateral portion of the abdominal wall—namely, the two obliques and the transversalis—ended about two or three inches from the middle line in an aponeurosis which split to inclose the rectus muscle. These aponeuroses met in the linea alba. When, therefore, these lateral muscles contracted the lines of greatest force were nearly transverse. Therefore so far as the division of any part of the sheath of the rectus was concerned a cut made transversely was less likely to lead to a gaping wound than one made vertically. With regard to the blood-supply the vessels which coursed in the anterior abdominal parietes were the deep epigastric, the circumflex, iliac, and the superior epigastric. Therefore the margins of a wound made transversely would be more abundantly supplied with arterial blood than those of a median vertical incision. Again, the lymphatics were more abundant in all the other parts of the abdominal wall than in the median line; hence absorption of effused products was better. The conclusion from these anatomical and physiological facts was that transverse and oblique incisions gave firmer and less yielding cicatrices. Clinical experience showed that these theoretical conclusions were correct. To quote one case illustrating the division of both recti sheaths and recti muscles. The patient, who was a woman, 49 years of age, was suffering from a large uterine fibroid. A ten-inch curvilinear incision was made about one and a half inches above the pubes; in order to obtain the requisite amount of room both recti sheaths and muscles were completely divided. The operation was performed on May 6th, 1904. When the patient was seen by Mr. Maylard a few days ago—that was, after an interval of three years and three months—there was not the slightest indication of any giving of the scar. Not only was the likelihood of a sound, non-yielding scar very great with these transverse or curvilinear incisions below the umbilicus, but they gave much readier access to the pelvic organs and also they reduced considerably the time required for the performance of severe operations on the pelvic contents. In cases where a wound became septic (and every practical surgeon knew by experience that, take what precautions he might, his efforts in this direction would sometimes be defeated) the cicatrix might be as sound as that after the healing of a purely aseptic wound. It was quite the exception for a septic median incision to form a sound cicatrix; the result sooner or later was almost invariably a ventral hernia. The reason of this firmness after a septic transverse incision was simply the good arterial blood-supply and the removal by the numerous lymphatics of the exuded material. In favour of the median vertical incision was the rapidity with which the abdomen could be opened; this rapidity was due to the fewness or complete absence of blood-vessels which required tying. If, therefore, time was a serious consideration in the treatment of any abdominal case a median incision should be made; but in all other cases it would be found that a more secure cicatrix, one which would not ultimately lead to ventral hernia, would result from the employment of a transverse, oblique, or curvilinear incision.

Mr. STANMORE BISHOP read a paper on

### *Anterior Nephropexy.*

The present results of the various operations for nephropexy could not be described as satisfactory and a conclusive evidence of this was to be found in the increasing complication of the operations which had been devised. The requirements of a satisfactory operation were that the kidney should be fixed and at the right height so as to prevent any possibility of a kinking of the ureter and blood-vessels. It must not be forgotten that in most cases of the mobile kidney a certain degree of neurasthenia was present. Mr. Bishop discussed the etiology of moveable kidney but did not come to any definite conclusion, though he agreed that the condition was commoner in women than in men and on the right side than on the left, 80 per cent. occurring on the right side. He attributed this greater frequency on the right side to the fact that the suspensory ligament of the colon which was attached to the kidney on the right side tended to pull the kidney down, as it pulled in the opposite direction to the peristalsis, while on the left side, as the peristalsis was in the downward direction, no such action would occur. An anterior incision for suture of the kidney enabled the operator to see exactly the position in which the kidney was placed. After the abdomen was opened the posterior peritoneum over the kidney was divided transversely and then a transverse incision was made through the kidney capsule about one-third of the way from the lower end, a flap of capsule was turned downwards, and the incision in the peritoneum was sewn up. The left forefinger defined the entrance of the ureter into the kidney and immediately below this a handled needle carrying some stout catgut was passed directly backwards, emerging in the loin; this stitch traversed the flap of capsule; the same piece of catgut was again carried backwards with the needle about 1 centimetre or $1\frac{1}{2}$ centimetres below the first. The two ends were later tied in the loin, the knot lying in a small skin incision. A series of such stitches was inserted around the lower end of the kidney. No important structures were liable to be damaged by these stitches. Mr. Bishop had done the operation on ten cases and all were now doing well. The first two relapsed because then he had not recognised the importance of including the capsule in the stitches. In one case there was some suppuration in the loin around some sutures.[1]

Mr. R. W. MURRAY (Liverpool) contributed a paper on

### *The Saccular Theory of Hernia.*

Owing to the limited time at his disposal he confined his remarks to inguinal and femoral herniæ, though he believed that the saccular theory, as it had been called by Mr. R. Hamilton Russell of Melbourne, offered the only satisfactory explanation of non-traumatic abdominal herniæ. There were two distinct theories of the origin of oblique inguinal hernia. The orthodox theory was that when the hernia appeared during infancy or childhood the sac was pre-formed, but if the hernia occurred during adult life the cause was weakness of the abdominal wall and the sac was acquired. The supporters of the saccular theory believed that in all cases of oblique inguinal hernia the sac was pre-formed. In infancy oblique inguinal hernia was very common, and all agreed that it was due to a want of obliteration of the processus vaginalis. Sometimes—i.e., in 18 per cent. of the cases—the cavity of the sac communicated with the cavity of the tunica vaginalis, but in the remainder of the cases the connexion with the tunica vaginalis had been closed. In the adult the common form of sac was exactly similar to that found most commonly in infants. In adults a hernia might become strangulated the first time it appeared, and in some of these cases it communicated with the tunica vaginalis, and then all would agree that the sac was congenital. In other cases, however, the hernia might become strangulated at its first appearance and the sac might be distinct from the tunica vaginalis. Most surgeons would say that in such a case the sac was acquired, but when such a case was submitted to operation a long narrow neck might be found and no extravasation of blood outside the sac or other evidence of sudden formation was seen, so that it was probable that the bowel had descended into a peritoneal diverticulum which had existed at birth. Mr. Murray described a case where he operated on a hernia in a man, aged 28 years, and the sac was indistinguishable from an ordinary hernia, yet the mother subsequently told him that the patient had had a rupture on that side when a baby, and in all probability the bowel had again descended into a sac which it had occupied 28 years before. It was at least probable that many, if not all, of the herniæ which were usually called acquired were really herniæ in congenital sacs. In children simple ligature of the sac was generally sufficient to effect a radical cure of an inguinal hernia, and even in adults a radical cure was often brought about by little more than obliteration of the sac. Mr. Murray now operated on inguinal hernia both in children and in adults in the following way. He laid open the inguinal canal, tied the sac at its neck, and then he united the aponeurosis of the external oblique by overlapping; and the results were very satisfactory. Inguinal hernia was so common that they ought to be able to find in the post-mortem room evidence of the existence of potential herniæ. Dr. Nathan Raw examined 200 consecutive bodies and found potential herniæ in 47 bodies and in these there were 68 diverticula, of which 13 were inguinal, 52 were femoral, and three were umbilical. The size of the opening at the internal ring varied greatly. Mr. Murray considered that when a patent funicular process existed the occurrence of a hernia depended largely on two factors: the size of the opening and the strength of the muscles guarding it. It was Mr. Murray's opinion that in a person born with a completely obliterated processus vaginalis it was impossible for an oblique inguinal hernia to occur. As to femoral hernia, in the 200 bodies examined 58 femoral diverticula were found, 14 of them being bilateral. They occupied exactly the site of a femoral hernia and the diverticula were long and narrow and therefore much more likely to have been the result of traction than of a pushing force from within. As in many cases more than one diverticulum was present there was much probability in favour of a developmental origin. Especially was this the case where the pouches were bilateral. It was impossible that in all these cases herniæ once existed and yet no history of any such lesion was obtainable. The lateral expansion of the pelvis at puberty and the increased pelvic pressure during pregnancy might account for the greater frequency of femoral hernia in women. The results obtained after operating for the cure of femoral hernia supported the view that the presence of the sac was the primary cause of the hernia, for recurrence was rare after operation, even when no attempt had been made to strengthen the abdominal wall at this point. It was difficult to account for the presence of peritoneal diverticula in the femoral region. Mr. Hamilton Russell's explanation was that early in fœtal life, when the bud-like processes appeared from which the lower limbs were developed, a little pouch from the pleuro-peritoneal cavity was produced by the traction of the femoral vessels. In support of this was the fact that in femoral, sciatic, and obturator hernia the sac was close to blood-vessels leaving the abdominal cavity. There was a great practical importance attaching to the saccular theory of hernia, for if the chief factor in the production of the hernia was the presence of the pouch then the mere removal of the pouch would be the chief point in the operation for radical cure.

---

[1] Vide THE LANCET, August 3rd, 1907, p. 283.

Mr. A. Heygate Vernon (Bournemouth) read a paper on

### *A New Operation for Hæmorrhoids.*

He had employed the new method for five years and so far as he had been able to learn it was different from any other yet invented. One object in devising the method was to lessen the amount of blood lost. The patient was anæsthetised and placed in the lithotomy position. The anus was gently dilated and then a special conical metal plug was inserted; this was 2½ inches long and 1 inch in diameter. It had four holes near its lower margin and a large-headed pin was passed through the skin about three-quarters of an inch outside the anus; it passed deep to the external sphincter, into the bowel, then into one hole of the plug and out at the opposite hole, then deep to the sphincter on the opposite side, and so out through the skin. Another pin was passed in a similar manner at right angles to the first. A piece of medium-size rubber-tubing was fixed on the point of one of the pins and then wound round two or three times deep to the pins, and finally was fixed over the point of the pin from which it started. The piles now stood out and with a pair of scissors the piles were cut away. There was practically no hæmorrhage owing to the rubber tubing. This was then taken off and if any bleeding points were present they were tied or crushed. The skin and mucous membrane were then sutured together with a continuous catgut suture, the pins were withdrawn, and the plug was removed. Healing was soon complete. Mr. Vernon had never seen any tendency to contraction. The chief merits claimed for the operation were, the absence of hæmorrhage, the complete removal of all the piles, and the rapid healing of the wound. Mr. Vernon had employed the method with success during an acute attack of hæmorrhoids.

## STATE MEDICINE.

### Friday, August 2nd.

Professor T. A. Starkey (McGill University, Montreal) read a short paper on the

### *Economical Disposal of Sewage in Small Rural Communities.*

He commenced by saying that in this matter it was wise to begin by finding out what that was which the law required from them and the requirements were three in number: (1) that no nuisance should be created; (2) that where sewers did not exist the means for disposal should be such as met with the sanction of the local authority; and (3) that the water-supply should be fully safeguarded. Further, there were three cases which required treatment—the isolated dwelling, small communities of less than about 300 population, and rural communities which more nearly approached to urban conditions. The two common conditions which prevailed originally were the privy pit, which could never be kept clean, which produced a sewage-sodden soil and which could not possibly be disinfected, and the bricked cesspool which required to be emptied at frequent intervals and which was open to many objections in its ordinary form. The method which he recommended and which he had put into force for many years and in many places of such varying climates as Canada and India was a modification of the septic tank with intermittent downward filtration worked on the subsoil irrigation plan. He wished to point out that the separation of excreta from household slops was quite immaterial in the character of the sewage requiring treatment, as had been shown by the analyses which he quoted, and further, that however successful mere tank treatment might be from a chemical point of view, it was only by treatment upon land that a good effluent could be obtained when judged from the standpoint of the bacteriologist. He constructed a covered tank, made watertight with cement or concrete, and capable of holding the sewage produced in 36 hours of the dwellings it supplied; he declined to bind himself as to the quantity of sewage produced per diem, as the consumption of water per head varied so widely in relation to the ease or difficulty of procuring it. After passing through this tank the sewage was passed off in given quantities and at stated intervals by an automatic flushing arrangement into a series of agricultural drains about six inches below the level of the ground. He divided his quantities according to the case and made his automatic flush about every three hours. He saw no objection to the admission of rain-water nor had it given any trouble in the cases within his knowledge. As to the character of the land, of course he admitted some was better than others and no doubt clay was the worst, but he had never found any soil so bad but that it could be worked and utilised. He had in this method followed so far as possible a recent dictum of Professor Bostock Hill which he considered worthy of quotation, in which he said: "Some form of resolution in a tank, followed by oxidation in a filter-bed, is the method which has most claims for adoption at the present time;" and he had the satisfaction by its means of obtaining in practice a really good effluent which would satisfy not only the chemist but the bacteriologist.

Dr. J. Scott Tew (West Kent Combined Districts) regretted that his experience of similar conditions had not been so satisfactory as the experiences related by Professor Starkey. He thought, so far as his experience went, that with such a system as had been described a detritus tank would be necessary, and if that were the case the admission of storm water would be fatal to its good working.

Professor H. R. Kenwood (London) felt grave doubts as to the period of 36 hours for the collection of sewage; it had been found that from 12 to 15 hours was as much as could be safely treated. Where the sewage remained in the tank for so long a period there was a danger that it would become over-septicised and a consequent deposition of colloid matter would take place which would render the working of the tank very ineffective.

Mr. S. N. Scott (Plymstock) said that the whole crux of the treatment of sewage in his district was the difficulty of acquiring land, especially in such parts of the rural district as were suburban and might be expected hereafter to become residential; in such places directly land was inquired for for this purpose the price became prohibitive. Houses were unfortunately allowed by the by-laws to be erected without any land attached to them and he could quite understand that if every house stood on half an acre, each individual house could make use of Professor Starkey's system.

Mr. H. H. Tidswell (Torquay) related his experiences in Persia where the inhabitants adopted a dry earth system, subsequently drying the mixture in the desert and using it as manure; he found it quite free from nuisance.

Professor Starkey briefly replied and pointed out that he allowed for a 36 hours' maximum which he found necessary for a 24 hours' flow as it was not wise to estimate too closely to a maximum requirement.

Mr. Tidswell then read a paper

### *On the Influence of the Tobacco Habit on the Health of the Individual and the Nation.*

Tobacco, he said, as all were aware, was a poisonous herb containing a virulent poison called nicotine, which was especially injurious to the young. The only use he could conceive for tobacco was to keep off mosquitoes and that was an unimportant matter in this country. Habit was quite as strong a factor in smoking as sentiment; he was once a moderate smoker and he well remembered the pangs he endured in breaking himself of the habit. If he had not done so he would have become a hypochondriac. Personally he had no faith in legislation and believed that boys instinctively hated tobacco and that if the foolish sentiment were once killed they would have no desire to smoke. He viewed with horror the cigarette habit which had much to his regret reached even the ladies, and which was killing boys by hundreds and thousands. Boys and girls should be induced to take a pledge not to smoke until they were 50 years of age. Medical men had a duty to perform even if it involved some self-sacrifice on their part—a duty to their nation and to the principles of their profession. So much for the danger to the public, but from the point of view of the individual there were diseases innumerable produced by the use of tobacco. Frontal headache, neuralgias, bronchitis, pharyngitis, and palpitation of the heart were matters of common occurrence, while epithelial cancer of the tongue was often due to smoking; angina pectoris and general paralysis of the insane had also been traced to its use. Having regard to the objects of the Association as set forth in memorandum he felt strongly that it was its duty as a body to enter upon a crusade against this deadly evil which was sapping the health of the individual and undermining the vitality of the nation.

Dr. A. Drury (Halifax) had always understood that tobacco was introduced into England by Sir Walter Raleigh, a native of that fair county in which they were assembled, but it would appear from the leaflets circulated by Mr. Tidswell that it was the direct invention of Satan. So far no case had been made out against the moderate use of tobacco by adults, but he was quite willing to assent to the dangers of juvenile smoking and to assist in its prevention. He regarded tobacco as a disinfectant and a brain sedative and believed that it was a preventive to tuberculosis. There were, of course, many things which were not fit for boys but which men might do with impunity.

Dr. J. C. McWalter (Dublin) understood that tobacco had a preventive if not a curative effect on tubercle. He was himself a non-smoker but he began to think what a lot of innocent pleasure he had missed. Among out-patients he had found few suffering from tuberculosis who were smokers. He deprecated the use of cigarettes by the young and especially by young women.

Dr. F. E. Wynne (Leigh) pointed out that to deny the use of any article because some people made it an abuse was quite irrational. As to the poisonous nature of tobacco, he had known men poisoned by excess in many things, even the eating of beef could be poisonous. He had no belief in an instinctive dislike to tobacco smoke; horses certainly liked it and donkeys also. He had smoked during the whole of his adult life and although no doubt Mr. Tidswell would tell him that by so doing he had shortened it, he was still alive and not yet in a position to argue the point.

Dr. A. Newsholme (Brighton) hoped it would not go forth as a scientific dictum that tobacco was a preventive to tubercle. It was true that the bacillus of tuberculosis could be killed by nicotine, but in such doses that the human being would also be killed. Bars and smoke-rooms were among the chief places in which the tubercle bacilli were harboured and barmen were notoriously prone to pulmonary tuberculosis; that probably arose from the filthy habit of spitting in such places and from the dust arising from the dried sputa.

Dr. E. J. Slade-King (Ilfracombe) gave a short address on the Difficulties attending the Isolation of Infectious Cases in Scattered Rural Communities and pointed out that the chief difficulty was to exclude the neighbours. The best way was to isolate the sick child in the house and endeavour to get the other children boarded out at a short distance for a small charge which could be entered in the costs of the rural authority as part of the expenses of disinfection. He related a story of how in a Devon village a young Sunday scholar died from diphtheria and how the whole of the class-mates were permitted to see the body and to kiss the dead child. The horrible epidemic of diphtheria which ensued produced no less than six deaths in that village and had left an impression on the minds of the people which would never be erased. He emphasised the need for small isolation hospitals for the villages.

Dr. McWalter spoke briefly on a method of Injecting Dead Bodies with Formalin before Burial as a method of preventing the rapid pollution of the soil by cemeteries which was not open to the same objections as were urged against cremation.

## OPHTHALMOLOGY.

### Wednesday, July 31st.

The President (Dr. L. H. Tosswill of Exeter), in opening the section, extended a warm welcome to all those interested in ophthalmology who had gathered to the meeting of the Association. Some were familiar friends and others, no less welcome, had come very many miles to their meeting. In the West of England Eye Infirmary at Exeter they had, he said, a centre of ophthalmic work of the greatest interest; it was established in the earliest days of the science and counted only four years less in age and antiquity than Moorfields.

Dr. E. Landolt (Paris) opened a discussion on

*The Form and Manipulation of Instruments used in Ophthalmic Surgery.*

He said that their branch of surgery had formerly been but a part of general surgery and many of the instruments retained the form and design of their origin. In eye work the field of the operation was strictly limited and the globe on which the work was done was one of the most mobile of the parts of the body. They might therefore well assert their independence in the design of their instruments. Precision was everything to them. The linear cataract knife was an instrument which in its design and manufacture was a triumph of art. The keen narrow blade and the well-balanced handle made it perfect in a trained hand. In its use the fingers should alone supply the driving and directing force; the wrist, and still more the arm, should be excluded from participating in the movement. Dr. Landolt contrasted the correct mode of handling the knife, the curette, the scalpel, and the keratome. In the use of cutting instruments on either eyeball or eyelids it was essential that the operator should have a secure point of support for the hand. This was properly obtained by balancing the hand on the little finger upon some part of the orbital margin. Most of the cutting instruments were so arranged that this could not be done; the blades were either too long or they were separated from the handle by a lengthy shaft. He showed drawings of instruments in which this defect of design had been overcome. Iridectomy knives, he felt, left much room for improvement; usually the shafts were so long that one was obliged to grip that instead of the handle. He showed a designfor an improved keratome, in which not only was the shaft of reasonable length, but the blade was so shaped as to permit of the readiest penetration of the cornea and also of the widest corneal section. This he obtained by shaping the arrow-headed blade so that the point was of an acute angle and the edges of the broader part formed a gradually increasing angle of divergence. The balance of many eye instruments depended on the material of the handle. Ivory was still the ideal material. It was not too heavy or too light; it was a poor conductor of heat; it was not slippery but gave a delicate hold. It was regrettable that ivory handles did not stand the high temperatures of sterilisation; the defect was rather in the cement than in the ivory. Perhaps this fault could be overcome. Most forceps had defects in that the springs were too strong and the blades too weak; the fingers were fatigued by overcoming the resistance of the former and when some tissue such as the lacrymal sac had to be held firmly the blades buckled inwards and the tissue slipped from the teeth. Further, the teeth of fixation forceps were placed perpendicularly to the blade; it was rarely that they applied the forceps perpendicularly. Usually the forceps made an angle of 45° with the surface upon which they were to act. He had a forceps made with the row of teeth set at an angle of 45° to the blade; the teeth were long and sharp and interlocked when closed. The effect was excellent. Dr. Landolt discussed the manner of holding the various forms of eye scissors and also their pattern and make. Generally he found that they were too long, both in the blades and in the handles, and further that the handles were too slight for some of the usage required of them.

The President of the Section, Lieutenant-Colonel H. Herbert, I.M.S., and Dr. R. A. Reeve (Toronto) expressed their agreement with the lines of Dr. Landolt's criticisms.

Mr. W. H. H. Jessop (London) said that the curvilinear keratome was a most useful instrument, particularly in insuring the wide incision necessary in operations for glaucoma. He found the "cross-bill" forceps exceedingly handy in "advancement" cases, when it was particularly necessary to secure a button-hole of the tissues down to the sclera.

Dr. Karl A. Grossmann (Liverpool) thought that some of Dr. Landolt's suggestions on the dimensions of instruments must of necessity be modified according to the size of the hand and fingers of the operator; one size would not do for all.

Mr. Simeon Snell (Sheffield) read a paper entitled

*An Inquiry into the Causes of Blindness in 333 Inmates of the Sheffield School for the Blind,*

in which he said that the school housed 70 children. Formerly it took fewer children, and only those who were quite blind, and kept them for a longer period. Since the passing of the Education Act of 1893 the scope of the school had been widened; the partly blind were now admitted—i.e., those who were "too blind to read the ordinary school-books used by children." These cases were, however, few in number and did not affect the scope of that inquiry. The beds were equal in number for males and females, so no information was afforded as to the sexual distribution of blindness. Mr. Snell had always depended on his own examination for a diagnosis and supplemented it by inquiries from parents. In most cases these two lines of inquiry were ample to determine the cause of blindness. In a few, where the clinical signs were indeterminate and where no previous history could be obtained, the cases had been marked unclassified and left out of account. Ophthalmia of the newly born provided the largest number of inmates. Out of a total of 321 cases no fewer than 136 could, with fair accuracy, be traced to the result of this disease. Thus more than a third, or 42·36 per cent., were due to one cause and that a preventable disease. A careful consideration of the records for each year did not point to a diminution of the proportion in recent years. He thought that the medical profession was fully alive to these facts, but that much was needed to be done before midwives could be impressed with the dangers of the disease and the urgent necessity for cleanliness and simple preventive measures. He was pleased to note that recently the Central Midwives Board had censured a midwife for failing to call in medical aid to attend an affected child and that for a like neglect another had been struck off the rolls. Ulceration of the cornea in later years of life accounted for blindness in three boys and four girls. Trachoma accounted for only one case. Interstitial keratitis blinded three boys and seven girls. Sympathetic ophthalmia caused 22 cases, or 6·85 per cent.; of these 14 were boys and eight were girls. The injuries causing these disastrous results were very various: knitting needles, sticks, broken pottery, wire, nails, stones, forks, sparks from fire, the thorn of a tree, scraps of iron, quicklime, caustic potash, and glass were held accountable in one or more cases. And the age at which the accidents occurred were as various, some occurring as early as two years of age and others as late as 14 years. Congenital defects accounted for 47 cases. In three no eyes could be discovered even after careful examination under a general anæsthetic. Large eyes (hydrophthalmia) accounted for five cases. Six cases of microphthalmia with many anomalous conditions of the uvea and lids were almost or quite blind. There was a single case of albinism partially blind and one of nystagmus for which no particular cause could be found. Congenital cataract accounted for 30 cases, or 9·34 per cent.; of these eight were girls and 22 were boys. Several of the cases had been operated upon. In some the operation had been effective so far as the lens was concerned but vision was not improved by reason of a defective optic nerve. Some were likely to have improved vision by further operation and seven had not been operated upon at all, yet from the appearances of ordinary lamellar cataract favourable results might have been anticipated. Amongst these were three brothess; inquiry elicited that the father was similarly affected but five other children of the family were healthy. Retinal, choroidal, and optic nerve disease of congenital nature accounted for 20 cases, or 6·23 per cent.; in some of these a family relationship was ascertained and the children were intellectually dull. A considerable number of the children were blinded by inflammations coincident or subsequent to an attack of one of the exanthemata. Small-pox caused four cases. All were completely blinded; three had not been vaccinated and the fourth had been vaccinated in infancy but suffered from small-pox at the age of 16 years when she was blinded. Scarlet fever accounted for nine cases. In one case there was atrophy of the optic nerve and in the others the actual cause of the blindness was a purulent inflammation of the eye and ulceration of the cornea. Measles caused 11 cases and German measles two cases; in one of these last meningitis succeeded the attack and blindness followed from optic atrophy. Enteric fever was held responsible for two cases of optic atrophy and whooping-cough for another two. Meningitis and brain tumours with optic atrophy accounted for 35 cases, or 10·9 per cent. Injury to the head caused optic atrophy in no less than seven cases. Glioma necessitated the removal of the eyes of two children. There was one case each of compound hypermetropic astigmatism and of high myopia. In one child the eyes were destroyed by burns resulting from a fall into a lime-pit. Malingering accounted for one case—that of a girl, aged 18 years, who was taken from the workhouse infirmary; one eye was amblyopic from squint but the other had excellent vision.

Mr. Sydney Stephenson (London) commented on the high proportion (42·36 per cent.) of the inmates blinded as the result of that preventable disease—ophthalmia neonatorum. He moved for the acceptance of the meeting the following motion:—

> That in the opinion of the Section of Ophthalmology the time had come when action should be taken by the British Medical Association towards the prevention of ophthalmia neonatorum.

The motion was seconded by Dr. Grossmann, who said that at the Birmingham meeting of the Association and at the International Congress at Berlin he had moved similar resolutions, and was carried unanimously.

Dr. Alexander Trotter (Perth) said that ophthalmia neonatorum was diminishing in his district. He had only seen one case in the general hospital in four years and not one in his private practice. He believed that this was due to the use of silver nitrate as a prophylactic.

Mr. F. Richardson Cross (Bristol) urged the necessity of the State dealing with ophthalmia neonatorum. In many infants blind from cataract the condition was complicated by abnormal development of the brain or retina. As regards sympathetic ophthalmia, he felt that a wounded eye should be saved where possible; but all should be carefully watched, for it was easy for a child with a wounded eye gradually to acquire sympathetic ophthalmia without observation and thus become blind. There were cases of optic neuritis in young children which suggested tumour; some recovered and others became blind from optic atrophy. He raised the question whether trephining should not be attempted at an early period of the neuritis.

Dr. John Hern (Darlington) said that he had collected statistics of blindness similar to those of Mr. Snell, though not for so large a number of children. In his experience most of the cases of ophthalmia neonatorum occurred in the practice of midwives, and with the increasing numbers of midwives special endeavours should be made to control this disease.

Dr. Cecil E. Shaw (Belfast) supported Mr. Stephenson's proposition. He felt sure that the Science Committee of the Association would gladly take up the matter. He thought that Mr. Stephenson should indicate the form which the proposed action should take. He had noted recently in Belfast some cases of ophthalmia neonatorum caused by the use of too vigorous prophylactic measures employed by midwives.

Dr. W. E. F. Thomson (Glasgow) said that he had himself examined the statistics of the Glasgow Eye Infirmary and found during the last 15 years no appreciable decline in the number of cases of ophthalmia neonatorum.

Dr. E. Dykes Bower (Gloucester) considered the number of rare congenital deformities in Mr. Snell's list to be unusually large. He expressed his surprise at the proportion in which cases of certain other disorders occurred in the list.

Dr. Henry Manning Fish (Chicago) read a paper

*On the Relation of Diseases of the Nasal Accessory Sinuses to Optic Neuritis*

He said that optic neuritis in connexion with nasal sinus disease had aroused a good deal of attention of late. Many cases had been reported showing how important was the recognition of the seriousness of this chain of cause and effect. Some few observers appeared still to look upon the two lesions as merely coincident. A search of the literature of the subject elicited records of over 100 cases of both primary and secondary optic neuritis with all degrees of visual disturbance, from papillitis with no reduction in vision, to total loss of perception of light. The cases showed that affections of each one of the nasal sinuses—the frontal and maxillary, as well as the ethmoidal and sphenoidal—could cause optic neuritis, and this because direct extension of the inflammation was not always necessary to produce an affection of the optic nerve. Dr. Fish quoted cases recorded by Richet, Fliess, Hajek, and others in support of this view. Acute sinusitis, he said, was most commonly seen in a cold in the head; there were congestion and a feeling of fulness or heaviness, sometimes accompanied with a greenish nasal discharge. It tended to heal spontaneously. Chronic sinusitis might exist for months or years without causing inconvenience, until some exacerbation was produced by an exposure to cold or damp. Dr. Fish gave some details of 36 cases which he had collected and a general summary of the clinical conditions. Pain was not found to be a marked feature of the disease; it could only be considered to be severe in one or two cases. Purulent discharge, usually held to be a classical symptom, was frequently wanting. Nasal congestion or engorgement of the turbinates, both middle and lower, was found to be a regular and most suggestive symptom. Paresis of the external ocular muscles occurred nine times, or in 25 per cent. The three cardinal symptoms of closed sinusitis were dizziness, dull pain, and nasal congestion. He considered that there was evidence to show that many cases of optic neuritis which had hitherto been credited to some unexplained influence of measles, scarlet fever, influenza, and facial erysipelas were really due to sinusitis or empyema of one or other of the sinuses set up by the infective fever. Hajek, Pearce, Wolff, and Weichselbaum had all found these conditions post mortem and so frequently and regularly that the sequence could scarcely be doubted. In a very few cases the symptoms had been mistaken for glaucoma, but the causal relation of sinusitis with the eye symptoms was proved by a complete recovery on draining the cavities. These cases showed how important was the thorough examination of the nose in all cases of optic neuritis and the importance of securing efficient drainage of sinuses in suspected cases. They should not rely on natural drainage, though it had been shown to be sufficient in some cases.

Dr. R. Pickard (Exeter) stated that he had recently seen a case of double optic neuritis, not retrobulbar, associated with purulent discharge from above the middle turbinals; the vision improved with relief of the nasal symptoms.

Dr. Reber (Philadelphia) felt that the diagnosis of latent accessory sinus disease was extremely difficult and required great skill. He was hardly prepared to admit that it could be the cause of bilateral optic neuritis. He readily assented to its connexion with unilateral neuritis, and not only sinusitis but carious teeth or some other similar local focus of sepsis might produce the neuritis.

Mr. W. J. Chichele Nourse (London), speaking as a rhinologist, expressed his appreciation of the findings of the paper and referred to the work of Ziem of Dantzic on the subject. In all cases of sinus disease he had noted the condition of the eyes but so far had found nothing of importance.

Dr. Bower entered a plea for the routine examination of the nasal cavities by the ophthalmic surgeon. He had done so for some time with the result that he did not feel that the association of nasal disease with optic neuritis was common.

Dr. A. Hill Griffith (Manchester) asked whether the cases described by Dr. Fish exhibited central scotomata in the field of vision and whether they were really cases of retro-ocular neuritis, for it was worth remembering that such cases commonly recovered even if untreated.

Dr. Fish, in reply, said that some of the cases were certainly retro-ocular neuritis, while others were as certainly papillitis.

## PSYCHOLOGICAL MEDICINE.

Thursday, August 1st.

Dr. F. Peterson (New York) read a paper on

*The Galvanometer as a Measurer of Emotions*

in which he said that he had been much occupied during the past winter in the use of the galvanometer as an instrument of precision in psychophysical research. Féré, in 1888, was the first to discover the perturbations of the galvanic needle by emotional influences. Two years later Tarchanoff, a Russian, gave an account of similar experiments, which were corroborated by Sticker in 1897. In 1902 Sommer reported somewhat unfavourably upon the use of the galvanometer in this respect. E. K. Müller, an electrical engineer of Zürich, in 1904, experimenting on himself, led Veraguth and Jung to confirm Tarchanoff's work, and their results were published recently. His own experiments had been conducted with Dr. Jung at Zürich upon both normal individuals and cases of insanity and were published in *Brain*, July, 1907. They employed the mirror galvanometer of Deprez-d'Arsonval with a horizontal celluloid scale placed one metre from the galvanometer. A moveable indicator recorded the deviations of the light upon the kymograph. A rheostat was employed and usually one Bunsen cell. The electrodes used were copper plates upon which the hands or feet were placed. At times jars of warm water for contact were employed. As soon as the test person was placed in the circuit a rapid rise in the curve with some fluctuation took place, due to expectant attention, a form of emotion varying in different persons. This effect, however, soon subsided and the experiment proceeded. Various stimuli were employed—sensory, verbal, intellectual, and emotional—and were ordinarily repeated three times. In many cases word associations were used. Eight normal individuals and 11 cases of dementia præcox were experimented on. The galvanic wave began to rise in from two to five seconds after the stimulus in normal conditions, but in abnormal states the latent time was increased even from eight to 27 seconds. Every stimulus accompanied by an emotion deviated the galvanometer in proportion to the liveliness of the emotion aroused. Repetition brought about exhaustion of the power of the stimulus. A particular value was attached to the use of the galvanometer with word associations striking emotional complexes, which might prove useful in exploring the minds of neurasthenics, hysterics, the insane, and criminals. In cases of acute katatonia the galvanometer usually registered a straight line, showing an absence of emotion. Irregularities affecting the movements of the galvanometer due to respiratory or other physical influences were all readily differentiated from the purely psychic perturbations. Tarchanoff regarded the phenomena as due to a secretory current of electricity associated with the sweat glands. Sticker thought that the capillary system of blood-vessels was concerned in the manifestations, but the phenomena occurred when the Esmarch bandage was in use. Dr. Peterson was therefore inclined to believe that the sweat glandular system seemed to be the chief factor, producing a current under irritation or by altering conductivity. The pneumograph was simultaneously used with most of their experiments because of the proverbial influence of emotions upon respiration. Respiration being under conscious control when affected by emotions produced curves not only for the moment but for a considerable time afterwards, as shown by the pneumograph, whereas the galvanometer, being beyond the control of the will, showed waves quickly subsiding with the fall of the emotion.

Dr. W. F. Menzies (Cheddleton) asked what interval of time elapsed between the application of the stimulus through the sweat glands and the movement of the galvanometer. He also stated that minute electrical currents resulted from muscular contractions in the cerebral circulation, which had to be taken into account.

Dr. F. W. Mott (London) was of opinion that the phenomena were due to muscular action accompanying emotional states rather than to currents in the sweat system. He suggested that a plethysmographic record should be taken from the hands to compare with that from the galvanometer used with wet electrodes from the feet.

The President of the section (Dr. T. Claye Shaw of London) thanked Dr. Peterson for his able contribution which led him to hope that the emotions might be as accurately measured as were already the processes underlying sensation and memory. The use of the galvanometer might also possibly be investigated in criminal cases where there was often a sudden rise of emotion.

Dr. Peterson briefly replied.

Dr. George M. Robertson (Larbert) read a paper on

*The Presence of a Bacillus in the Blood of Persons Suffering from General Paralysis of the Insane.*

He said that the researches of which this paper was a summary were inspired by the Morison lectures by Dr. W. Ford Robertson and were undertaken with the object of confirming the definite conclusions to which he had come that "a diphtheroid he had named the bacillus paralyticans was the specific etiological factor in the production of general paralysis and tabes dorsalis." The observations were carried out under the direction of Dr. George Robertson by Dr. C. H. G. Gostwyck and Mr. J. Theodore Anderson, medical officers, and Dr. Winifred Muirhead, the bacteriologist, of the Stirling District Asylum. In conducting this research they avoided the mucous surfaces of the body.

The observations reported in this paper were principally made on the blood and cerebro-spinal fluid of living persons. The *modus operandi* of the method for obtaining cultures from the blood was then described. Special syringes easily sterilised and kept sterile were used, 10 cubic centimetres of blood were drawn off from the median basilic vein, and this was run into three flasks, each containing 100 cubic centimetres of sterilised broth. These syringes and flasks were always kept ready, and they then waited for the development of a congestive seizure in any of their cases of general paralysis. Blood smears were usually made at the same time, stained with Jenner's stain, and examined microscopically for organisms. In some cases cerebro-spinal fluid was taken by lumbar puncture. The first case examined (Nov. 15th, 1906) was that of a man in the third stage of the disease in a severe convulsive seizure with a temperature of 103° F. A blood count was taken within an hour of the commencement of the seizure and the white blood corpuscles numbered 12,000 per cubic millimetre. There was a polymorph-leucocytosis at the expense of the lymphocytes. Blood smears were taken and stained with Jenner's stain. 10 cubic centimetres of blood were also withdrawn and put into 300 cubic centimetres of broth and incubated. On examining the smears isolated organisms having a bipolar staining like diphtheroids were found in many fields. In one remarkable field, of which a photograph was shown, there were two groups of four and seven bacilli respectively which were well stained and lying quite free. They were unmistakeable micro-organisms. The broth on naked-eye examination after 48 hours appeared to be unchanged and sterile, but on examining a hanging drop organisms were seen in it. Plating was proceeded with in the usual way, but though every effort was made these were all unsuccessful. These repeated failures were disappointing as it was certain that organisms were present. Dr. Theodore Shennan, pathologist to the Royal Edinburgh Infirmary, inoculated mice and guinea-pigs in the laboratory of the Royal College of Physicians in the hope that the micro-organisms might be recovered through them. At the end of four days a mouse was killed and its spleen was found to be enlarged and congested. Two flasks of broth were inoculated from the liver and spleen and both flasks after 48 hours contained a pure growth of bacilli and from each of these plate cultures were made and an organism successfully recovered. A fortnight afterwards another mouse which had been inoculated was killed as it was in a dying condition. It was paralysed on the right side of the body. The other animals inoculated appeared to have suffered no evil effects. On Jan. 6th, 7th, 10th, and 11th blood smears were taken, but no organisms could be detected. On Jan. 13th, when the patient's temperature was 99·8°, cerebro-spinal fluid was drawn off by lumbar puncture and broth inoculated. After 48 hours' incubation the broth appeared sterile to the naked eye, but organisms were seen under the microscope in a hanging drop. Plating was then proceeded with and they were successful in obtaining colonies and in recovering an organism. On the next day the patient's temperature rose to 103·4° and he died. At the post-mortem examination, which presented the typical signs of general paralysis, broth was inoculated from the heart blood and cerebro-spinal fluid after searing the surface of the heart and brain. The former was sterile, but from the broth culture of the latter an organism was recovered. The three organisms which were recovered from this case—namely, from the blood during life, through the intermediary of the mouse, and from the cerebro-spinal fluid during life and after death—were morphologically and culturally identical and they resembled morphologically those seen in the blood films. On 12 other occasions in six cases of undoubted general paralysis an organism was recovered from the blood or cerebro-spinal fluid and owing to alterations in the methods it was not necessary to employ mice in the process of recovering the organism. On the 15 occasions here referred to, in which an organism was recovered, it was found to be diphtheroid, of the xerosis group, and identically the same organism. Its cultural growths and reactions were studied on seven solid and 13 fluid media, the latter in several cases prepared according to different authorities in more than one manner, and they were the same throughout. There was a variability in the reaction in milk litmus alone. Owing to the difficulty of obtaining plate cultures Dr. Muirhead had to improve upon the usual methods, as this organism appeared to be a very feeble grower. In order to be successful another point had to be attended to, and no time was lost after the onset of the congestive seizure in withdrawing the blood. It had been found that leucocytosis developed with great rapidity and in an hour or two the phagocytic action of the leucocytes might destroy all the organisms in the blood stream. The observations of Dr. Ford Robertson and Dr. G. D. McRae had demonstrated this fact experimentally and clinical experience confirmed it generally. The organism found on these 15 occasions was not the original bacillus paralyticans of Dr. Ford Robertson and it was never at any time found. Dr. Ford Robertson had, however, altered his views since October of last year and he now stated that there was another form, which he called the bacillus paralyticus brevis, which was also the cause of the disease. This form was found on one occasion in the cerebro-spinal fluid. It was found post mortem and associated with a streptothrix which was found in pure culture in the heart blood. In this case also the Larbert bacillus (Muirhead's diphtheroid) was obtained in pure culture from both the blood and the cerebro-spinal fluid during life. What pathogenic significance was to be attached to this bacillus? It was most improbable that it was a contamination, considering the varied conditions under which it was obtained and the precautions taken. The majority of the cultures were sterile as no plate cultures were made from them and all the healthy controls were sterile. It was, moreover, the only organism found during life in the blood of undoubted cases of general paralysis and it corresponded morphologically with the organism seen so often in the blood films. All the cultural operations were also performed by a trained and experienced bacteriologist. Was the presence of this bacillus in the blood a terminal invasion or only associated with congestive seizures? It was not the former, as it had been recovered from a patient who was going about at large in good general health though enfeebled in mind. It was undoubtedly most often and most easily obtained during congestive seizures, but as it had been obtained at other times its presence in the blood indicated something more than a relationship to congestive seizures alone. Was it, then, the cause of general paralysis? While it probably played an important part in the symptomatology of general paralysis it could not be asserted that it was the cause. It would appear from these observations that diphtheroid bacilli might possibly play an important part in the symptomatology not only of general paralysis but of other forms of acute insanity as well, and it was possible that this group produced toxins which acted in a special manner on the nervous system.

Dr. F. W. MOTT read for Dr. J. P. CANDLER (Claybury) an account of

*An Investigation into the Incidence of Diphtheroid Organisms in General Paralysis of the Insane,*

in the course of which Dr. Candler said that he wished to state the result of a research into the frequency of diphtheroid organisms in general paralysis and other forms of insanity, in which he had been engaged for about one year; but first it was of interest to state that reference to the literature showed that there was hardly any part of the human body where diphtheroid organisms had been obtained by Dr. Ford Robertson in cases of general paralysis from which other observers had not already been able to obtain similar organisms in cases free from any semblance of insanity. His own investigations had comprised: (1) examination of the blood, cerebro-spinal fluid, respiratory, alimentary, and genito-urinary systems of the cadaver; (2) the examination of the urine and urethras during life; and (3) the examination of the blood and cerebro-spinal fluid during life. Briefly the results were as follows. From post-mortem material he obtained diphtheroid bacilli in three out of 25 cases of general paralysis (or 12 per cent.). From cases of insanity other than general paralysis he obtained diphtheroid organisms in four out of 59 cases (or 6·6 per cent.). From the urine of 26 cases of general paralysis examined during life he obtained a diphtheroid bacillus in two (or 7·6 per cent.). From the urine of other cases of insanity he obtained a diphtheroid bacillus once out of 28 cases examined (or 3·5 per cent.). From the urethras of general paralytics he obtained diphtheroid bacilli in five out of 31 cases (or 16 per cent.); from the urethras of other forms of insanity six out of 44 cases (or 13·6 per cent.). The total number of cases examined was 223, of which 82 were cases of general paralysis. The total incidence of diphtheroid bacilli in general paralysis was 12·2 per cent., compared with

8·4 per cent. in cases of other forms of insanity. These figures were not meant to be taken as of true statistical value as the number of cases examined was not sufficient for that purpose, but they helped to confirm the findings of Eyre and Flashman who in a somewhat similar investigation found diphtheroid organisms present in 16·6 per cent. of cases of general paralysis, as compared with 17·6 per cent. of other forms of insanity. With respect to the examination of the blood and cerebro-spinal fluid of living subjects, he had examined the blood of 24 cases of general paralysis on 41 occasions by withdrawal of from five to 20 cubic centimetres of blood from the basilic vein. He had been unable to obtain a diphtheroid organism in culture from any of his cases, nor had he succeeded in obtaining such from the cerebro-spinal fluid withdrawn by lumbar puncture, which fluid he had investigated in nine cases of general paralysis and one of tabes dorsalis. He had, however, on a few occasions obtained growths in the forms of isolated colonies of different kinds of bacteria upon the agar plates which had been prepared from the centrifugalised deposit of broth culture of the blood, though the initial flask had remained sterile, and he thought that the liability to external contamination by this method was very considerable. Therefore, considering the ubiquitous nature of diphtheroid organisms, he was of the opinion that with such an elaborate method caution must be exercised before it was definitely stated that an organism so obtained did actually come from the circulating blood. With respect to the alleged improvement stated to have occurred in general paralytics as the result of treatment by the new vaccine, it might be mentioned that Dr. Lewis C. Bruce[1] claimed to have greatly benefited two cases of marked general paralysis by inoculating them with defibrinated blood taken from a case of general paralysis in the second stage of the disease. Again, temporary improvement of a greater or less degree was stated by Dr. Ford Robertson in May, 1903, to have occurred in certain cases treated with anti-diphtheritic serum, although in his later papers he claimed that his organisms were special and distinct species of the diphtheroid class. Moreover, it must be remembered that remissions were not infrequent during the course of general paralysis. It was possible, therefore, that the improvement which was stated to have followed the use of the new vaccine might be found to be only of a temporary character as in the previous instances, but time alone could decide. In view of the above considerations he felt justified in suggesting that whereas it was possible that diphtheroid bacilli, in conjunction with several other species of micro-organisms, might help to undermine the constitution of persons suffering with general paralysis, and thereby to hasten the progress of the disease, sufficient evidence had not yet been produced to warrant the statement that a particular species of this group was endowed with specific pathogenic and paralytic properties.

The President of the section thanked Dr. Robertson and Dr. Mott (on behalf of Dr. Candler) for their papers and invited discussion on them.

Dr. P. W. MacDonald (Dorchester) inquired whether Dr. Candler had attended the recent meeting of the Medico-Psychological Association at which Dr. Ford Robertson and Dr. McRae had given the results of their latest researches.

Dr. C. Mercier (London) considered that the presence of micro-organisms in general paralysis seemed more than a coincidence but that the subject must still be left in the hands of expert bacteriologists.

Dr. D. Yellowlees (Glasgow) was not surprised that varying opinions prevailed as to the rôle of bacilli in cases of general paralysis and he thought that important discoveries were close at hand.

Dr. Robertson replied that at present he was only collecting facts.

## DENTAL SURGERY.

### Wednesday, August 1st.

Mr. J. McKno Ackland (Exeter), the President of the section, in opening the proceedings, referred to his advocacy of the establishment of the section of Dental Surgery as long ago as 1889. The previous record of the section was an excellent one and much had been done to elucidate the far-reaching consequences of oral sepsis. Too much stress could scarcely be laid on the supreme importance of not only efficient masticatory apparatus but oral hygiene in the present open-air treatment of pulmonary tuberculosis, and if proper and careful attention were directed to this point it was not unreasonable to presume that the increased efficiency of nutrition would still further increase the number of cured cases. The increasing amount of dental caries in persons of all social grades was a matter of national importance, and, to quote so eminent a physician as Professor William Osler, "more physical degeneration is caused by defective teeth than by alcohol." Mr. Ackland then alluded to the importance of the subject they were about to discuss and called upon Dr. G. F. Still (London) to open a discussion on

*The Causes, Effects, and Treatment of Dental Disease in Children*

from the point of view of medicine, announcing that Mr. Edmund Owen (London) would open the subject from the surgical and Mr. J. G. Turner (London) from the dental side.

Dr. Still said that caries of the teeth was an important cause of ill-health in children and one which was liable to be overlooked; the converse was also true that ill-health in children was a cause of dental decay. Decayed teeth interfered with the proper assimilation of food, and such interference was most serious in childhood when growth and development, physical and mental, should be at their greatest activity. Any widespread prevalence of dental decay in childhood was a menace to their national physique. A series of observations taken amongst children brought to hospital for other conditions showed that 82·7 per cent. of children between five and 12 years of age had decayed teeth, and 39·8 per cent. of children between two and five years of age; some of these children had from ten to 15 carious teeth. Parents as well as medical men ought to know how much a child's health might suffer from decayed teeth. The commonest evil therefrom was digestive disorder; and this in a child was often shown by loss of flesh, loss of appetite, enlargement of the abdomen, and sometimes by frequent pains in the abdomen. Anæmia was also sometimes due to dental caries, perhaps in consequence of chronic poisoning from the foul condition of the teeth. Decayed teeth also formed a nidus for micro-organisms which might set up inflammatory disorders in the mouth or pass into the blood or into the neighbouring lymphatic glands and produce more serious disease. It had been thought that tuberculous disease of the glands in the neck might arise from infection from decayed teeth; the tubercle bacillus had been found in decayed teeth; and enlargement of glands was very frequently associated with decayed teeth, but it was very uncertain how often any tuberculous infection was due directly to the teeth for there were other—and probably much commoner—sources of infection; but there could be little doubt that indirectly the swelling of glands which certainly resulted from dental caries was a powerful predisposing cause of tuberculous infection of these glands. Decayed teeth were also a cause of frequent headaches in some children, and occasionally gave rise to more troublesome nervous disorder, such as habit spasm and in a few recorded cases even epilepsy. Lack of proper cleaning of the teeth was one factor but not the only one in the production of dental decay. Considerably more than 50 per cent. of children of the hospital class at the school age had never cleaned their teeth in their lives. But it had been shown that children of the well-to-do classes were just as liable to dental caries as the poor and less well-cared-for children; and whilst the most scrupulous cleanliness would not always prevent decay, complete ignorance of a toothbrush was not inconsistent with a perfect set of teeth. There were differences in the teeth of different children; in one the enamel was thicker and more perfectly formed than in another, and this difference might be congenital and perhaps peculiar to particular families, so that in the children of one family the teeth were more resistant to decay than in another; but imperfect development of the teeth, particularly of the enamel, might be due to a preventable disease—namely, rickets; and any profound disturbance of nutrition, such as was produced by improper feeding in infancy, might interfere with the perfect development of the teeth so that they were more liable to decay. Diet had some influence in producing decay in the teeth after they had already been cut; but probably this influence was chiefly indirect; any food which caused digestive disorder thereby altered the secretions of the mouth so as to favour the action of bacteria in producing acid fermentations and eroding the enamel. Sweets, which were generally supposed to injure the teeth, probably did so only in this indirect manner, or given at wrong times or too frequently were very liable to upset digestion. The prevention of dental caries must date from earliest infancy; if 39·8 per cent. of children between two and five years of age had decayed teeth it was evident that the mischief was often present before the school age and no dental inspection of schools could take the place of parental care in preventing this evil. Proper feeding in infancy and the prevention of rickets and of digestive disturbance in early life were of prime importance. The teeth should be cleaned twice daily, especially in the evening, from their earliest appearance. There was a most erroneous idea current that decay of the first teeth was of little importance, whereas it was probably more liable to injure the general health and the physical development than at any other time of life. If parents would take their children regularly to a dentist for inspection two or three times a year, and if dentists would see that decayed first teeth were stopped whenever possible, there would be less ill-health and difficulty of digestion in early childhood and probably also less decay in the permanent teeth.

---

[1] Brit. Med. Jour., 1901.

Mr. EDMUND OWEN said that one of the chief causes of dental disease in children was faulty feeding. It was a most unfortunate thing that at the present time so many mothers were unable or unwilling to suckle their children. In children who had been improperly fed, when at last the teeth came through the gum they were frequently faulty in shape, appearance, and power of resistance. In other words, the child was rickety. The milk teeth being for the most part formed before the child had acquired the rickety taint might come through full of promise, but the teeth of the permanent set only stood a poor chance of reaching histological perfection. Mr. Owen insisted that all advertised sterilised foods were bad for children's teeth, and if a child must be brought up on cow's milk, the milk should not be dealt with in any way likely to destroy that living something which was essential for the well-being of the child. As the child grew up his diet improved, meat-juice, vegetables, and fresh foods were added, and it would no doubt be better for him if the meat was freshly killed and not previously stored for six weeks or more in a frozen condition. Mr. Owen proceeded to draw a lesson from the excellent dentition of old British skulls. The best flour for bread was that made of wheat coarsely ground between the old-fashioned mill-stones. This type of bread was in use in East Anglia when Mr. Owen was a boy; it was made in ovens heated with wood faggots, and the loaves were put on the glowing ashes. Such bread not only had hard good crust but the bread itself was crisp and remained fresh when cut across for many days. This bread produced a proper and healthy physiological stimulus to the jaws, but upon modern bread crust was difficult to find, and children were brought up on paps, and patent foods, and messes evolved in the laboratories and for the benefit of the advertising vendor. The manufacturer of drugs, the mere tradesman, had of late taken upon himself to teach medical men how to prescribe and the vendor of patent foods dictated to the profession and the public how children should be fed, and the profession and the public allowed themselves to be led. The general surgeon met with two specially disastrous effects of dental disease, the more serious being the acute septic inflammation of the periosteum and bone starting from the germs incubated in a carious tooth. Such teeth required removal, the presence of a painful swelling being the indication for extraction. Another serious effect of dental disease was inflammation of the cervical lymphatic glands. Sometimes the lymphoid elements of the glands were able to deal with the bacteria and small harm resulted, but frequently the glands were unequal to the task and an acute suppuration might occur large out of all proportion to the original lesion. Behold how great a matter a little fire kindleth! Prevention of dental disease in children was a better study than its treatment and in Mr. Owen's opinion the so-called "high" civilisation of the present day was accountable for most of their dental troubles.

Mr. J. G. TURNER dealt with the pathology of defective teeth, illustrating the various points by lantern slides. Hypoplasia or imperfect development of teeth was most conspicuous in enamel. The various forms could be conveniently classed according to their origin. Hypoplasia of (*a*) malnutrition, (*b*) inflammatory hypoplasia, (*c*) traumatic, (*d*) congenital syphilitic, and (*e*) congenital. The first was the most common; the enamel once formed was incapable of renewal or repair and the formative cells once injured rarely regained their full functional activity. The teeth bore the impress of the pathological process, the position of the deformity on the tooth corresponding in each to the stage of development at which the pathological change occurred. This form of hypoplasia was therefore symmetrical. The amount of damage to the forming enamel varied in degree, in some instances causing almost complete absence of enamel and in others merely causing a dull white or brownish stain. In these dull patches the fibrous character of the enamel was well seen. In some cases a series of grooves ran across the tooth, apparently corresponding to exacerbations and remissions of the exciting cause. At times a line of pits not fused into grooves was seen. Mr. Turner described the microscopical changes in the teeth and proceeded to say that all sorts of "infant foods" seemed to be causative, and plumpness and tranquility of the baby was no criterion of future healthy teeth. Among the histories of early hypoplasia Mr. Turner had investigated three children who had been breast fed and had all suffered continuously from diarrhœa and in each instance the mother's mouth was very septic. All persons with hypoplasic teeth did not give histories of rachitis and all rickety children did not develop hypoplasic teeth. Still, Mr. Turner was inclined to think there was obvious community in the origin of both rachitis and hypoplasia of the teeth. Hypoplasia due to specific fevers was a special form of the hypoplasia of general nutrition. Inflammatory hypoplasia was frequently asymmetrical and in permanent teeth generally owed its origin to inflammatory processes affecting the temporary tooth which was situated immediately above the affected permanent tooth. The inflammatory process left its mark on the microscopical structure of the affected tooth. Bending and irregularity of the dentine was seen, probably due to inflammatory pressure. So-called mercurial teeth might be a form of generalised inflammation, but it was difficult to realise that mercury was ever given in such doses as to cause the results attributed to it. Traumatic hypoplasia differed from inflammatory hypoplasia but little. Syphilitic hypoplasia was well known, but much smaller and less marked degrees of hypoplasia were suspicious of congenital syphilis. The teeth were frequently small, wanting in contour, although the enamel might have a good finish. He had confirmed Darier's observation of a small boss of enamel projecting from an imperfectly developed crown but having a normal enamel surface. Congenital lesions of temporary teeth had not as yet been met with. Mr. Turner referred to an instance of congenital hypoplasia which he thought was unique; it affected five generations. Dental caries was next considered; it was a disease of early life and newly erupted teeth were more susceptible than older teeth. He thought, despite what had been said to the contrary, that there was no disease in which both cause and prevention were so clearly demonstrated. By clinical observation and experiment stagnation of carbohydrate food had been demonstrated to be the predisposing cause and the acid, mainly lactic, produced by bacteria to be the acting cause. Surgically clean teeth could not decay: no bacteria, no caries; no pabulum, no caries, might well be stated as axiomatic. Various accessory causes no doubt contributed but the main underlying fact remained the same. The more injurious foods were the agglutinative carbohydrates and those containing monosaccharides. The former clung to the teeth, the latter were most easily fermentable. Fine flour and biscuits, unwashed starchy foods, as badly prepared rice, &c., were bad. Practically all hypoplasia and dental caries as well, together with oral sepsis in children, could be referred to faulty and improper food, and the prevention of dental caries in children lay rather in the province of feeding than the actual treatment of the disease when established. Extraction of temporary teeth when it was impossible to render them either painless or aseptic was indicated, and the attempt to save by filling a temporary tooth that was septic was improper; more deleterious effects were produced by retaining such teeth than by their loss. Finally, in public health dental disease takes its place with bad housing, feeding, and clothing as one of the root factors of degeneration.

Dr. EDMUND CAUTLEY (London) attached great importance to hereditary predisposition as a potent cause of malnutrition of teeth and their subsequent liability to decay. The delicate, tuberculous, syphilitic, or alcoholic mother was not liable to have children with sound and well-formed teeth. He alluded to the importance of attention to cleanliness and also to the mutual causation of carious teeth and digestive disturbances.

After a few remarks from Dr. G. A. Sutherland (London),

Mr. K. W. Goadby (London) suggested that a common error of physicians was to ascribe caries of the teeth to digestive disturbances rather than to pathological conditions of the mouth. In considering the effect of dental diseases upon the gastro-intestinal tract it was important to distinguish between diseases of the soft parts of the mouth and diseases of the hard tissues or teeth. The former were the originators of the greatest amount of toxin production; the latter, destroying the functional character of the teeth, promoted disease in a more mechanical way. At the same time defective teeth frequently led to inflammation of the jaws and soft tissues. Mr. Turner had referred to the difference in fermentability of the mono- and polysaccharides; it was, however, important that the di-saccharide cane sugar was very resistant to fermentation by the majority of the bacteria inhabiting the mouth, as was also starch; maltose, on the other hand, being the chief sugar derived from starch by the action of ptyaline, was one of the most fermentable of all. Glucose or maltose invariably showed an acid reaction in neutral solution when inoculated with mouth bacteria within six hours, whereas cane sugar required 48 hours or more; this was of great moment in the production of dental caries in children as usually, except at night, the fragments of one meal were removed by the next before actual fermentation had progressed very far. Ulcerative stomatitis and pyorrhœa alveolaris showed a remarkable similarity in their bacteriology, histological character of the pus, and at times in their clinical aspects, and he was inclined to regard them as variants of the same disease.

Mr. Arthur W. W. Baker (Dublin) confirmed from his own experience the production of hypoplasia by whooping-cough and from influenza. Hypoplasic teeth were not more prone to caries than normal teeth; in fact, arrested caries was more common in these teeth than in normally developed ones.

Mr. R. Denison Pedley (London) made a few observations on the medical aspect of the question and discussed the various carbohydrate food-stuffs and their relation to dental caries.

Mr. W. R. Ackland (Bristol) submitted that the prevention of caries in young children rested much more with the parent, nurse, and medical man than the dental surgeon who only saw the child when caries was established. The medical man must educate the mother and the nurse. Children were frequently allowed the pernicious habit of eating biscuits or sweets in bed last thing at night. Want of cleanliness was, however, only one cause of decay.

Mr. C. Edward Wallis (London) said that he had made a number of observations on the relation of dental disease and epilepsy. Dental treatment of epileptic children was commenced two years ago and the method of drastic treatment had been adopted. In making careful examination into the statistics there was, however, no apparent diminution in the incidence or severity of the fits. In a large County Council school it had been unmistakeably shown that the children with the lowest physical and mental development were those who were classed as suffering from the largest amount of dental disease.

On the motion of the President of the section the discussion was adjourned until Thursday, August 2nd.

### Thursday, August 2nd.

Mr. P. Sidney Spokes (London) stated that some years ago he had collected statistics of hypoplasic teeth which showed that the incidence was less common among the children who were better fed during the first three years of life than among the very poor who were afterwards found in parochial schools. With regard to treatment, among dental surgeons who took a wider view of disease than the saving of one or two teeth there was a strong feeling in favour of extraction whenever there was the possibility of danger to the health of the individual; at the same time it was only fair to point out that in many cases the temporary teeth might be made functional by "stopping," or by the application of nitrate of silver, in cases of superficial decay. The early discovery and prompt treatment of caries could only be secured by systematic periodical examination with dental probe and mirror.

Mr. J. F. Colyer (London) said he would confine himself entirely to the subject of treatment. The most important thing to remember was that children's mouths to be kept clean must be kept functional. First, then, mouth breathing tended to promote inflammation of the gums in the front of the mouth, with the sequelæ of caries, suppuration, &c. Promotion of nasal breathing was therefore to be insisted on. Secondly, with regard to treatment, filling might be performed when the pulp was not exposed but where this obtained extraction was the better course; in fact, the only cases where Mr. Colyer was inclined to adopt conservative treatment were in the second temporary molars of children under the age of six. The cases, however, which demanded most serious consideration were those in hospital practice where children were brought with the whole of the deciduous molars hopeless wrecks. If the first permanent molars were in place the best treatment was the removal of all the deciduous molars, and if one or two of the teeth be opposed by teeth not yet decayed the removal of these also was indicated, the loss of their antagonists in the corresponding position of the opposite jaw destroying their function and allowing them to either act as the initial points of further decay or as the starting place of oral sepsis. The question of oral sepsis in all its branches must be weighed in the balance against the loss of a few temporary teeth and in his (Mr. Colyer's) opinion the former far outweighed the latter.

The discussion was continued by Mr. F. Coleman (London), Mr. J. H. Gibbs (Edinburgh), Mr. F. J. Bennett (London), Mr. J. Lewin Payne (London), Mr. W. Russell Barrett (London), Dr. J. Milligan (Barrow-in-Furness), and Mr. G. A. Peake (Cheltenham).

The President of the section in summing up the discussion stated that he was most in agreement with the speakers who, although admitting the necessity of extraction of temporary teeth at times, were more inclined to adopt conservative measures when possible. With the suggestions urged as to improvement he was in hearty accord and trusted that the discussion would bear considerable fruit in the prevention of dental disease in children. In the absence of Dr. Still and Mr. Owen the President called upon Mr. Turner, who opened the discussion for the dental surgical side, to reply.

Mr. Turner, in replying to the discussion, said that two main questions appeared to have been raised in the discussion, the relation of diseases of the stomach to diseases of the teeth and the all-important question of treatment of temporary teeth. If the stomach did affect the teeth how was the influence brought about; was it by the eructation of acid from the stomach, for if so the amount of acid required would cause profound pathological changes in the œsophagus and pharynx. Was the influence, then, by an alteration in phagocytosis; if so, only the necks of the teeth were likely to be affected and caries in children more frequently attacked the crowns. Was it by alteration in the salivary secretions; perhaps, but neither dental surgeons nor physicians had any data for such a supposition, especially as the acid of lemonade acted as a mild deterrent to dental caries. The co-relation of anæmia and dental caries was apparently of the same order and it was more probable that the anæmia was the direct effect of the caries rather than the reverse. With regard to treatment, he adhered to the formula—any tooth which could not be rendered painless and aseptic should be removed, and Mr. Colyer suggested that functionless teeth should also be removed, as a functionless tooth at once became a dirty tooth; functionless teeth might be included in the above formula without any difficulty. Experience had taught him that the line of treatment was correct; there was no difficulty in feeding a child even if all but the four first permanent molars had been removed, while the child's health improved on the removal of septic troubles. Mr. Colyer's idea of isolating the first permanent molars by the extraction of teeth in mouths with much caries was good, as temporary teeth without proper opposition or occlusion became dirty teeth. The fact that rickety animals frequently possessed good teeth required more investigation.

Mr. Ackland read a paper on

### *Some Cases of Neuralgia.*

The cases were divided into three groups for convenience of description: (*a*) those in which pain in one tooth was referred to another; (*b*) neuralgias and remote affections due to dental irritation; and (*c*) pain in teeth due to affections of other parts. The first class required only a brief summary. Pain was never referred across the median line but was often referred to the opposite jaw on the same side. The patient rarely localised the right tooth; when the pain was referred to the wrong tooth the cavity was usually interstitial.

The cases occurring in class (*b*) were as follows: 1. Supraorbital and frontal neuralgia, right-sided, together with photophobia, in a male, aged 30 years, cured by removal of septic bicuspid roots on the right side. 2 Supraorbital and ocular neuralgia with occasional photophobia and amaurosis in a female, aged 32 years, on the right side, cured by removal of septic roots (crowned) of lateral canine and first premolar in the upper jaw. 3. Neuralgia, supraorbital and infraorbital, with swelling of the optic disc following the fixation of a crown on a lateral incisor. The symptoms disappeared when the crown was removed. The patient was a well-known medical man. 4. Infraorbital, supraorbital, and ocular neuralgia with myopia in a male, aged 14 years, cured by treatment of irritated pulps in incisor and molar region. 5. Otalgia accompanied with loss of hearing associated with lower wisdom tooth. 6. Supra-laryngeal and hyoid area neuralgia associated with inflammation and throat pain associated with right lower unerupted third molar. Several other cases of this class were cited, all being associated with some dental pathology and all clearing up when the cause of irritation in the form of a diseased tooth was removed. Catarrhal affections of the antrum (maxillary), tic-douloureux, glaucoma, and iritis were mentioned as occasionally associated with pain referred to the teeth.

Mr. Bennett was inclined to the opinion that most of these cases of eye changes associated with pathological dental conditions were due either to toxic disturbances from the local focus of infection or to spread of infection by continuity of tissue.

Mr. Goadby mentioned a case of antral suppuration in which the optic disc was distinctly swollen and which disappeared on the treatment of the suppuration.

Mr. Colyer remarked that he did not regard the evidence in many of the cases as sufficient to warrant the application of the term reflex; they were in all probability due to toxic or septic origin, particularly one case mentioned in which a muddiness of the iris was observed.

Mr. Turner said the neuralgia of edentulous jaws was the same as the neuralgia or pain of septic osteitis. The swelling of neuralgia which occurred in bad and persistent cases might occur in the parts to which the neuralgia was referred. There might be an analogy to change of colour in the iris or to deafness, due, perhaps, to reflex hyperæmia of the middle ear.

Mr. Coleman said the relation of carious teeth to myopia was very difficult to decipher, but pain in the ear related to carious lower molars might have a developmental significance owing to the segmental development of the fifth nerve.

Dr. Milligan, Mr. Baker, and Mr. Russell Barrett also discussed the cases.

Mr. Ackland in his reply thought that a toxic origin hardly explained Case 3, where the symptoms disappeared in half an hour after the tooth was removed. The swelling of neuralgia was possibly caused by sympathetic vaso-dilatation.

Mr. Baker read a paper on

*Difficult Eruption of the Third Molar.*

Difficult eruption of the third molar, especially in the lower jaw, was constantly brought to the notice of surgeons and dental surgeons, and the present ideas on etiology and treatment were largely based upon the work of the late Mr. Salter. This observer pointed to disproportion in the size of the teeth and the jaws that held them as not only producing irregularity of the teeth in the front of the mouth but often so little space was allowed for the last molar, that its advent was postponed or prevented for a long period. The irritation and infiltration of the soft parts producing trismus were generally due to the nipping of the soft tissues by the oncoming crown against either the coronoid process or another tooth. That the above hypotheses comprise a large number of cases Mr. Baker was prepared to admit, but there were still a number of instances in which too much importance would seem to be attached to overcrowding and pressure in the production of pain. Precise knowledge as to the causes which impel the tooth to the surface would probably modify their ideas on the subject. Mr. Baker then proceeded to cite two instances in which pain and difficulty to close the mouth were associated with the non-eruption of third lower molars in normal position and without the complication of crowding. In one case the third molar remained in the region of the socket of the second molar for ten years, all the time keeping up general irritation. In the second case the eruption of a third molar in a male, aged 20 years, was attended with acute paroxysmal pain, referred to the usual neuralgic foci. Both first and second molars had been previously removed, so there was no crowding to prevent the eruption of the teeth. Subsequently, as the pain did not subside the lower third molar was removed and the pain, especially that of the inferior division of the fifth nerve, disappeared for a month but then returned. The pain continued with varying intensity until the upper third molar cut the gum. Mr. Baker was inclined therefore to regard the usual text-book statement that the neuralgias arising from the eruption of third molars were due to the difficulties caused by crowding was not a sufficient explanation, as in both the cases recorded no opposition to the eruption of the tooth causing the neuralgia was in operation and yet the pain was intense and only relieved by the extraction of the offending tooth.

Mr. Colyer was in complete agreement with Mr. Baker. He referred to specimens of malposition of the third molar in the museum of the Royal Society of Medicine (Odontological Section): one in a gorilla with the supernumerary third molars in the ascending ramus of the jaw, the other a third molar situated in the sigmoid notch in the human subject.

Mr. J. H. Gibbs (Edinburgh) was much interested in the paper and agreed with Mr. Baker that crowding and insufficient room for eruption were insufficient to account for the pain in a number of this class of case. The majority of his cases had occurred in women.

Mr. Payne mentioned a case in which eruption of a third molar in the mandible of an elderly patient caused acute pain, local and referred. The root of the tooth was implanted in the ascending ramus of the jaw and the crown was entirely covered by gum. It was important to note that the eruption of the upper third molar was rarely attended with such acute pain as the lower third molar, a fact which might be associated with the freer blood-supply and less compact tissue of the upper as compared with the lower jaw.

Mr. Bennett (London) thought that some of the points he proposed to discuss in his paper on Friday had a distinct bearing upon the question.

## DISEASES OF CHILDREN.

### Friday, August 2nd.

The proceedings commenced with a discussion on

*Lumbar Puncture: its Diagnostic and Therapeutic Value,*

which was opened by Dr. E Farquhar Buzzard (London). He said that in the course of the past 16 years the literature relating to this subject had become very extensive as the method was applied to the investigation of various diseases, among which tuberculous meningitis and tabes dorsalis were conspicuous. In regard to the technique of the operation he recommended the use of a needle of the hypodermic type, preferably of platinum, the fluid being allowed to run from its end without suction, aspiration being likely to lead to irritation of nerve-roots. The puncture should be made in the third lumbar interspinous space (on a line with the crests of the ilia) while the patient lay on his right side with the spine flexed, surgical cleanliness being carefully observed. The quantity of fluid removed might be from 15 to 40 cubic centimetres. If it ran too quickly or too much was withdrawn there was danger of cardio-vascular and respiratory disturbance, with headache, nausea, and vomiting. The normal fluid was clear, watery, and colourless, having a low specific gravity and containing traces of chlorides, sugar, and serum globulin. It flowed at low pressure, escaping drop by drop. So many minor matters interfered with the correct working of a pressure gauge that he did not think it afforded more trustworthy information than the manner in which the fluid escaped from the open tube. Pathologically the fluid showed variation from this standard in an increase in the amount of albumin and the presence of cellular elements, besides alterations in chemical constitution and the presence of various mico-organisms. These occurred mainly in diseases of the nerve-centres, but in uræmia there were found to be diminution of chlorides, increase in sulphates and phosphates, and also of albumin and the presence of urea. In diabetes there was increase in the quantity of sugar and where katabolic processes in the nervous system were going on cholein was present. In inflammatory conditions a grey translucent clot formed in the fluid on standing, which in purulent states was adherent to the containing vessel and more easily broke up. Normally the fluid deposited but few cells, two or three in the field of an oil immersion lens. These were much increased in disease. The polymorphonuclear cells predominated in cerebro-spinal fever, while in most acute local states the lymphocytes were more numerous. With congestion and œdema of the meninges the tension of the fluid was raised, so that it jetted out of the needle. These features were of value in discriminating between the true and pseudo-meningeal states in a young child. Both in children and adults syphilis was associated with lymphocytosis. In cases of suppurating otitis media with cerebral symptoms an examination of the fluid might decide between a localised abscess and diffuse suppuration of the meninges or between a toxæmia and meningeal suppuration such as occurred in cerebro-spinal fever. As regards bacteriology, the detection of the several organisms not only assisted diagnosis but afforded opportunity for preparing suitable vaccines. Lymphocytosis occurred usually before micro-organisms were to be detected. In regard to treatment, the value of lumbar puncture was mainly in forwarding remedial measures by aiding exact diagnosis. Decompression by evacuating fluid might be of value in some cases, but he did not approve of it in cerebral tumour. So far, in hydrocephalus relief had only been afforded in a few cases and for a brief period, and in acute meningitis the beneficial effect was not permanent in tuberculous cases; some instances of posterior basic disease ran a favourable course after lumbar puncture Some advantage might accrue from the removal of toxic fluid, which might account for improvement in cases of uræmia with coma, convulsions, and Cheyne-Stokes breathing, as such fluid exhibited an increased toxicity towards the lower animals.

Dr. F. E. BATTEN (London) based his observations on 42 cases in which lumbar puncture had been performed on children between one and two years of age. In one instance no fluid could be obtained in four attempts, and in all but three, in whom the sitting position was adopted, the operation had been performed with the patient lying on the side. He divided the cases into 12 groups. 1. Of 12 cases of tuberculous meningitis the fluid was clear in 11 and opalescent in one. In all tension was raised, the amount of albumin was increased, and the number of leucocytes were considerable, lymphocytes representing 91 per cent. of the whole. Tubercle bacilli had been found in the clot. 2. In six cases of cerebro-spinal meningitis the fluid was turbid and the cells were increased, polymorphonuclear cells representing 98 per cent. The diplococcus was found in all. Four recovered completely and one died subsequently from diphtheria, the evidence of thickening of the meninges being found post mortem. 3. Three cases of pneumococcic infection. 4. One case of streptococcic infection. 5. Six cases of convulsions, with two immediate recoveries. 6. Intracranial tumour (three cases); in one the quantity of fluid had increased to 18 ounces at the fourth tapping. 7. Hydrocephalus. The fluid was clear and was of specific gravity 1010, with increased albumin. 8. Cerebral diplegia. 9. Anterior polio-myelitis. The fluid was clear and sterile. 10. Congenital syphilis showed definite increase of lymphocytes. 11. Acute ataxia (two cases). The fluid was normal. 12. Spinal caries. Clear rhombic crystals were present. Dr. Batten considered lumbar puncture of value in confirming the diagnosis in tuberculous and cerebro-spinal meningitis, both by the distinctive cocci and differential cell count. Therapeutically it relieved intracranial pressure was easy of performance, and free from ill-effects.

Professor W. D. HALLIBURTON (London) said that the source of the cerebro-spinal fluid was the epithelium of the choroidal plexuses, together with exuded lymph, since it contained waste products of nervous activity. The chief variations were in pressure and the chemical and cytological characters. The chief chemical features were the presence of a small amount of protein which was increased in pathological states, a small and variable amount of sugar, and cholein derived from lecithin in the disintegration of nervous matter and present only in organic lesions.

Dr. F. C. EVE (Hull) suggested that the flow of cerebro-spinal fluid was dependent on vascular tension and could be promoted by slight pressure on the veins of the neck.

Dr. J. PORTER PARKINSON (London) said that lumbar puncture would assist the diagnosis between pneumonia and meningeal or cerebral disease with marked cerebral symptoms.

Dr. E. ATHOLE ROSS (London) described his experience in the technique and diagnostic features of the various cells found. He recommended Leishman's stain.

Dr. PURVES STEWART (London), after criticising the ordinary methods of cell counting, said that an accurate estimate could be arrived at by taking the cerebro-spinal fluid, adding a fixed proportion of a staining-agent to it, and counting the cellular elements in a special counting chamber, just as was done in the case of blood corpuscles. Owing to the scantiness of the cells in normal cerebro-spinal fluid a larger counting chamber was required than in the case of blood. Fuchs and Rosenthal had devised an excellent modification of the Thoma-Zeiss chamber for the purpose which Dr. Stewart had been using for several months. In health the number of cells per cubic millimetre varied from one to four or five, such cells being lymphocytes, with an occasional endothelial plate, never any polymorphs. In a series of eight successive cases of tabes the average number of lymphocytes was 72·3; in four cases of general paralysis of the insane the average was 190·4. In seven cases of cerebro-spinal syphilis the average was 37·6, and so on. The figures thus obtained corresponded to what had been found before with the old centrifuge method, but they were more trustworthy. They demonstrated the well-known fact that, as a rule, the lymphocytosis of tabes and of general paralysis was far greater than that of ordinary syphilitic affections of the central nervous system. This rule of lymphocytosis in tabes was not without exceptions. Dr. Stewart cited a case of well-marked tabes with most of the classic signs, in which the cerebro-spinal fluid on one examination contained only 3·3 lymphocytes per cubic millimetre and a week later a second observation in the same case only showed 11 per cubic millimetre. Dr. D. Ferrier recently had a similar case and Dr. Stewart understood that Babinski had had one also. So far Dr. Stewart had not come across a case of general paralysis without well-marked lymphocytosis. With regard to the significance of polymorphonuclear leucocytes in the cerebro-spinal fluid, their presence was always pathological and indicated an acute process within the meninges. The most marked cases were those of acute suppurative meningitis. Dr. Stewart had counted as many as 28,933 polymorphs per cubic millimetre in a suppurative meningitis, while counts of 200, 300, and 400 were exceedingly common in pneumococcus or diplococcus meningitis. But the presence of polymorphs did not necessarily mean a suppurative infection: it simply meant an acute process. As an acute septic meningitis subsided the polymorphs gradually became replaced by lymphocytes and ultimately even the lymphocytes disappeared as the cure was completed. Lastly, it was interesting to note that a marked polymorph leucocytosis might occur without any organismal infection whatever, as Dr. Stewart had noted within a few hours after injecting sterile salt solution into the cerebro-spinal fluid of monkeys.

Dr. A. GARDNER ROBB (Belfast) spoke of 300 cases of epidemic cerebro-spinal meningitis in which lumbar puncture was performed during unconsciousness due either to coma or induced by chloroform; he used rather a large trocar and cannula as he often had to deal with thick pus. In many cases which were "hanging fire" the operation appeared to start convalescence.

Dr. W. ESSEX WYNTER (London) remarked that the 16 years through which Dr. Buzzard had traced lumbar puncture would not include a case in which the speaker had, so far as he knew, originated the operation in 1889 and which with four others was published in THE LANCET in 1890 under the title "Puncture of the Theca Vertebralis for the Relief of Pressure." Examination, post mortem, showed that in nearly every case described as tuberculous meningitis the real condition was general tuberculosis and this discouraged attempts to relieve the local condition by this means. Then followed the employment of lumbar puncture for diagnostic purposes and later the injection of cocaine or other local anæsthetic for relief of pain. In the spring of the present year a case of sporadic cerebro-spinal meningitis with coma was treated by removal of spinal fluid containing the meningococcus and the injection of a saturated watery solution of acetozone on several occasions with complete recovery.

Dr. REGINALD L. LANGDON-DOWN (London), in opening a discussion on

*Precocious Development*,

confined his attention to the psychical side and drew the following conclusions. The precocious children were those from whom they drew their great men, that was, those who advanced the nation intellectually and socially. They might be roughly divided into two groups, the stable and the unstable. The former were well developed, both physically and mentally, and in good order and proportion; the latter were often physically below the average and showed an irregular or one-sided mental development; these cases needed special care and formed the majority of those usually coming under medical attention. From the point of view of the race, a late maturity seemed to be advantageous, and this pointed to preserving slight beneficial variations rather than large ones; from the point of view of the individual, the later-acquired powers of the race might advantageously appear sooner, but this should be in good order and with uniform development. It appears, on the other hand, that anything in the environment likely to produce artificially a premature development of any function or organ was harmful, particularly so in those cases where there was naturally a tendency to extreme deviation from the average; while a careful discipline and social restraint were needed to save some of the extreme cases from social failure. On the other hand, the judicious guide would give the bright youth of the stable class free play as to his line of study, while preventing him from straying over too wide an area, and at the right moment, when his choice was made, he would endeavour to stir the youth's energies and to fire his enthusiasm to the utmost.

Dr. LEONARD G. GUTHRIE (London) said that as regards the physical side attention was drawn to the accumulation of evidence of intimate functional relationship existing between the pituitary, the thyroid and thymus glands, the cortex of the adrenal glands, and the testes and ovaries. All seemed concerned in some mysterious way with bodily growth and sexual activity. Even the pineal body seemed to have a share. Abnormal conditions suggestive of hyperfunction of one or another of these glands accounted for gigantism and acromegaly, precocious obesity, abnormal strength and muscularity, premature sexual development and hirsuties on the one hand, whilst hypofunction seemed responsible for dwarfism, muscular atrophy, myasthenia, sexual infantilism, and general alopecia. The coincidence of tumour conditions of more than one of these glands and of atrophy of one associated with hypertrophy of another was further proof of mutual interaction between them. The exact relationship was obscure. Perhaps a mutual check action was exerted by all on each other. Tumour conditions of the pituitary body were associated with gigantism in early life and acromegaly in adolescence. Sexual infantilism or impotence and loss of hair accompanied each condition. Tumours of the pineal body had in two cases been present with premature development of the sexual organs and hirsuties. The thymus gland seemed concerned with osseous growth. Its extirpation in young cats and dogs was followed by rickety changes and stunted growth. Its hypertrophy was associated with acromegaly, myasthenia, and lymphatosis. Abnormalities of one or all of the above named glands might be responsible for achondroplasia. Enlargement of the thyroid occurred in pregnancy and might coincide either with precocious puberty and menstruation or with cessation of menses. Thyroidal atrophy was the cause of myxœdema, dwarfism, and sexual infantilism. Extirpation of the thyroid and also castration were followed by enlargement of the pituitary body. Tumours of the suprarenal cortex (hypernephromata), especially if malignant, were accompanied by precocious puberty, hirsuties, and extreme obesity with or without premature development of sexual organs, or by remarkable physical, muscular, or sexual development. In addition to gigantism two distinct classes of precocious physical development were described: (1) the precociously obese type; and (2) the muscular or "infant Hercules" type (Parkes Weber). By precocious obesity was meant the obesity commonly seen in middle-aged men and women and not merely excessive plumpness. The fat was evenly distributed and also existed as pads, humps, and rolls in various parts. Stellate venules and "lineæ gravidarum" were common. The children resembled stout middle-aged persons in minia- e. Intelligence as a rule was precocious. Of ten examples his type seven were female and three male. In six of male cases hypernephromata was found. In one no lar tumour of any kind was discovered. In two of the ale subjects hypernephromata were present. In one mortem examination was held. The muscular or cules type was characterised by remarkable stature and muscular strength without obesity and by precocious puberty with hirsuties and virile condition of the sexual organs. This type seemed to be confined to the male sex, unless certain cases of precocious maternity were analogous. 11 examples of the muscular type were cited. In two of these hypernephromata were discovered after death. In two tumours of the pineal gland were found. In one there was a testicular tumour, removal of which was followed by loss of hair on the face and resumption of child-like appearance. In six no post-mortem examination was recorded. One of the latter (Mr. Hugh Lett's patient) was still alive and aged eight years. Photographs of examples of the obese and muscular types of precocious development were exhibited. Hypernephromata might be attended by true precocious development of the generative organs and hirsuties without obesity. Finally, in females true precocious puberty might be caused by ovarian tumours, removal of which (as in the case of removal of testicular tumours in males) was followed by "reversion" to child-like conditions. The prognosis in all but the latter cases was bad. Giants usually died young. The eldest of the muscular and obese children was 14 years and the youngest 14 months at the time of death. The average duration of life was from five to six years.

Dr. G. A. SUTHERLAND (London) also spoke.

---

## ELECTRO-THERAPEUTICS.

### WEDNESDAY, JULY 31ST.

The proceedings were opened by the PRESIDENT, Dr. LEWIS JONES (London), who, after paying a generous tribute to Professor Stephane Leduc of Nantes for the excellent work he had done in medical electricity, called upon the latter to read a paper entitled

"*The Ions in Medicine.*"

Professor LEDUC, after indicating that electricity for medical purposes and the electrolytic process were first applied in England, pointed out how all electrical applications to the human body were essentially electrolytic processes, and that such applications were attended by the passage of ions, the nature of which depended on the solution used to saturate the absorbent covers of the electrode, or if plain water were used the application resolved itself into an electrolysis of a normal saline solution. The density of the current employed was limited by the caustic action of the electrolytic products on the skin which took place when the current density was high. To overcome this tendency he considered that it was very important to use from 15 to 20 thicknesses of absorbent material well soaked in the electrolytic solution between the electrode—which must be very flexible—and the skin. The electrodes must be carefully adapted to the surface and maintained by even pressure. The indifferent electrode should be moistened by pure water only, so as not to introduce any undesired ion into the current. Among the indications for this form of medication Professor Leduc mentioned neuralgias and also pericarditis where iodine ions were employed. In such cases iodine appeared in the saliva in from 40 to 60 minutes. Professor Leduc concluded his paper by remarking on the moral triumph for medical electricity attained by the inauguration of a section devoted to that subject at the annual meeting of the British Medical Association.

Mr. A. D. REID (London) read a paper on

*The Use of the Cryptoscope in Operations for Renal Calculi,*

in which he said that his plan was to use a special form of sterilisable cryptoscope by means of which the kidney was examined after being drawn out through the wound. The position of small calculi was easily seen and they could be removed with very small incisions, rendering the splitting up of the whole kidney unnecessary. Lantern slides were shown of renal calculi where during the removal this plan was adopted. The stones were all small and single and in no case was the incision in the kidney more than three-quarters of an inch in length.

Professor WERTHEIM SOLOMONSON (Amsterdam) described

*The Einthoven Galvanometer.*

The essential feature of this instrument is the displacement of a fine wire—through which the current passes—in a strong magnetic field. The instrument is capable of measuring the most minute currents and by suitable arrangements the movements of this wire can be photographed, making a very perfect oscillograph. Professor Solomonson during the course of his remarks showed some current curves obtained by this instrument which were very beautiful and instructive, those illustrating the "current of action" given off by the heart being particularly interesting.

The PRESIDENT then showed

*Some Tracings of Medical Coil Currents.*

This was an amplification of his paper read in the Section of Medicine at Oxford in 1904. He showed how the presence of an iron core increased the length of the waves even to the extent of their interfering with each other. He said that short waves were much more pleasant and bearable than long waves, and he showed how by the placing in the circuit of a very narrow spark gap an otherwise undesirable current became almost ideal for testing purposes.

Dr. HUGH WALSHAM (London) and Dr. J. F. HALLS DALLY (London) jointly communicated a paper on

*The Orthodiagraph,*

in which it was stated that in this instrument the centre of the x ray tube or diaphragm, the centre of a small screen, and a marking pencil were all in exact line and all moved together freely in any desired direction. As the centre of the screen was passed over the chest of the patient a series of dots was made on the marking screen by the pencil, and as only those rays which came in a straight line from the centre of the anode were made use of an accurate outline of the heart, &c., was obtained comparatively easily and was quite free from distortion. Judging by the diagrams shown it would seem that the heart shadow as ordinarily seen in screen examination of the chest was about double the size of the heart itself.

The first morning's proceedings concluded with a paper by Dr. W. F. SOMERVILLE (Glasgow) on

*The Effects of High-Frequency Currents on the Urinary System.*

His general observation was that the amount of urine was increased, but in some cases where polyuria was present it was diminished. A large number of chemical analyses were given which tended to show that a course of high-frequency treatment tended to improve the metabolism and general nutrition of the body.

### THURSDAY, AUGUST 1ST.

The second day's proceedings were opened by Dr. J. MACKENZIE DAVIDSON (London) who started a discussion on

*X Rays and Sensitive Plates.*

Dr. Davidson had carried out a large number of experiments of a most exhaustive nature, working out the influence of tubes of various degrees of vacuum upon the several brands of plates on the market. The whole trend of his researches went to prove the superiority of the French plates, the next best coming a long way behind.

A large number of those present took part in the discussion, all of whom were, in the main, of the same opinion as Dr. Davidson.

Mr. ELLIS PEARSON (Bideford) then read a paper on

*The Use of the X Rays from the Point of View of the General Practitioner,*

in which he insisted on the necessity of being up-to-date, and after giving a *résumé* of the general value of the rays in diagnosis and treatment showed how it was the duty of every medical man to make proper use thereof in the interests of his patient.

Mr. E. W. H. SHENTON (London) then followed with an address on

*The Examination of the Hip-joint.*

Mr. Shenton insisted on the importance of using the tube below the patient and carefully screening the case before taking the radiograph. Several lantern slides were shown and stress was laid upon the arch formed by the top of the obturator foramen and the neck of the femur. He said that so long as this arch line was not disturbed there could not be any great injury present. In case of fracture or dislocation the disturbance was very great.

Dr. DAVIDSON insisted on the value of the stereoscopic method in hip examinations and considered it to be superior to any other.

Mr. SHENTON replied.

Mr. J. R. RIDDELL (Glasgow) read a paper on

*The Measurement of the Brim of the Female Pelvis by Means of X Rays.*

This method consisted, he said, in laying the patient prone on the couch with the tube below and on a line drawn at right angles to the centre of the plane of the brim of the pelvis. The plate was placed on the buttocks so as to rest as nearly as possible on the back of the sacrum and tuberosities of the ischia. The shadow of the brim thus obtained was carefully measured, and, allowing for the position of the tube, brim, and plate, the actual size of the brim was arrived at by a comparatively simple calculation. The method would appear to be sufficiently accurate for all practical purposes. From experiments on the cadaver the error was found to be so very small as to be almost negligible.

Dr. J. GOODWIN TOMKINSON (Glasgow) read a paper on

*A Method of Treating Lupus Vulgaris,*

in which he said that the treatment consisted essentially of mild scraping, exposure to x rays, and the use of Unna's creasote plaster in turn, with intervals of rest. He had found it of great value and showed lantern slides of cases where it had been employed with considerable success. The method was recommended where the Finsen method was unavailable or too expensive.

Mr. JAMES TAYLOR (Bristol) read the notes of a case of Paget's Disease Treated by X Rays.

The second day's proceedings were brought to a close by Dr. A. HOWARD PIRIE (London), who read a paper entitled

*"The Measurement of the Reverse Current in an X Ray Tube and a New Meter for Estimating the Dose of X Rays,"*

in which it was pointed out that the method was based on the electro-decomposition of water and the instrument was placed in series with the x ray tube. If it was desired to measure the inverse current the gas given off by the two electrodes was collected separately and the proportion of direct and inverse currents arrived at by calculation. For estimating the dose of x rays the gases were not separately collected. The instrument employed was described and illustrated in THE LANCET of July 13th, 1907.

### FRIDAY, AUGUST 2ND.

The third day's proceedings were opened by Dr. J. H. SEQUEIRA (London) with a paper on

*X Ray Dosage.*

The paper was based upon the experience gained during the past two years in the skin clinique at the London Hospital. In that period 16,000 exposures had been made to the x rays by measured doses. Although large doses had been given there had been no dermatitis. The older method of frequent exposures and the risks of cumulative effects were contrasted with the present method of giving larger doses at stated intervals under the control of instruments of precision. Dr. Sequeira laid stress upon the importance of realising that there was a definite latent period between the administration and the reaction and cited Kienbock's classification of the degrees of reaction. In the first stage there was a period of latency of three weeks. The reaction was without inflammation but the hair fell out and lupus nodules became smaller. A larger dose caused the second degree of reaction which appeared after a latent period of 14 days. In the third degree the latent period was of ten days' duration, the reaction was more severe, and was accompanied by vesication, superficial erosion, and exudation. A telangiectatic scar resulted. In the fourth degree the reaction might appear in a week and was of the necrotic type with severe ulceration. In order that the various degrees of reaction might be obtained it was necessary thoroughly to know the apparatus which was being used and to measure the current in the primary circuit by the voltmeter and ampèremeter, to regulate the frequency of the interruptions, and to maintain the resistance of the tube. The alternative spark gap and the milliampèremeter in the secondary circuit were guides to the resistance of the tube. The penetration was estimated by a Benoist's apparatus and the output of rays was estimated by the pastilles of Sabouraud and Noire. The B tint, which was equivalent to five Holtzknecht's units, was taken as the guide. This dose was sufficient to epilate without producing an erythema. It was the dose used in the treatment of ringworm of the scalp and sycosis. In the case of rodent ulcer a large single dose was administered and then a fortnight was allowed to elapse before the same area was treated again. The dose varied. For an ulcerated surface a pastille dose would suffice; for an indurated edge the dose might have to be double this. These large doses might be given at one or more sittings. Similar large doses were given in mycosis fungoides, sarcoma, and epithelioma, and in every case a period of from 14 to 21 days was allowed to elapse before the same area was again irradiated. In some cases of lupus vulgaris the same method was adopted with satisfactory results. In conclusion Dr. Sequeira raised the question of the risk of setting up a condition similar to the dermatitis of x ray workers by the too frequent exposure to small doses of x rays.

Dr. J. DELPRATT HARRIS (Exeter) read a paper on

*Statistics relating to Some Cases of Lupus and Rodent Ulcer treated by the X Rays and Zinc Ions.*

This paper went to show the superiority of these methods to those formerly in use and how in the great majority of cases they could be depended upon to give a satisfactory result.

Dr. E. REGINALD MORTON (London) read a paper on

*The Therapeutic Use of Alternating Currents of Low Frequency.*

He contended that in treating atony or degeneration of muscular tissue the ordinary constant current was not sufficiently stimulating, while in that obtained from a coil the fluctuations were too rapid for the degenerated muscle to derive any direct benefit therefrom. While it was admitted that cases sometimes did well with either, better results would be obtained by using a current that embodied the good points of both, and he had found that a sinusoidal current which reversed its direction of flow from two to four times per second was most satisfactory. The periodicity of the current should be adapted to the state of the muscle being treated, and, speaking generally, the more severe the atony or degeneration the more slowly should the reversals of the current take place. Excellent results had been attained in his hands, especially in atonic dyspepsia and other disorders due to atony of the muscular coat of the digestive tract.

Dr. W. IRONSIDE BRUCE (London) read a paper on

*Systematic Radiography.*

His idea was always to take every part under the same relative position of tube, part, and plate, such position being the one that had been found by experience to give the best view. He showed a very simple couch for attaining this end and he had also prepared an atlas of normal radiographs made in this way.

In the subsequent discussion Mr. SHENTON insisted on the importance of careful screening beforehand, while Dr. Davidson equally insisted on the superiority of the stereoscopic method over any other.

Professor SOLOMONSON'S paper on

*The Electro-diagnosis of Oculo-motor Paralysis*

was read by Mr. W. DEANE BUTCHER. In this he showed how, under certain conditions, it was possible to obtain a reaction without risk of damage to the eyeball. His method was to place the electrode on the tendon of the muscle in the same way as was done to obtain the longitudinal reaction in a peripheral muscle in a state of degeneration. The idea was useful in the differential diagnosis of central and peripheral lesions and also threw valuable light on the prognosis in some cases.

Mr. F. HOWARD HUMPHRIS (Honolulu) contributed a paper on

*The Rationale of Static Currents.*

His contention was that static electricity did not receive the amount of attention and use that it deserved. His theories as to the way it produced its effects—polarisation of cell contents, &c.—were ingenious but had not yet been generally accepted, nor was it generally admitted that static electricity could produce the tangible results obtainable by ordinary dynamic currents.

The session concluded by the exhibition of a series of very interesting lantern slides contributed by the PRESIDENT of the section, Dr. G. H. ORTON (London), Mr. SHENTON, and Mr. C. R. C. LYSTER (London).

## THE ANNUAL EXHIBITION.

(*Concluded from p. 391.*)

### IV.—SANITARY APPLIANCES.

The exhibits coming under this heading were not very strongly represented, such things as disinfectants, filters, special bath fittings, and sinks falling in this category. A good deal of attention was given to the simple sanitary devices of the Ajax Sanitary Company, Limited, of 22, Ely-place, Holborn-circus, London, E.C. The invention refers to a very simple and successful attempt to do away with unclean traps and fittings. The invention consists of a sliding valve or shutter fitted in a recess at the back of the lavatory basin, forming as it is said a "moveable weir," over the top of which the waste water may run away faster than it can flow into the basin. The result is that not only is the risk of overflow avoided but the shutter may be removed for cleaning purposes. The lavatory basin and bath wastes are often a source of offence which, however, is not possible with the Ajax slide. Messrs. Slack and Brownlow, of Abbey Hey, Gorton, near Manchester, exhibited various forms of the Brownlow germ filter, which consists of hollow cylinders of porous porcelain. Bacteriological experiments have shown that this material prevents the passage of organisms. The filter is adapted for both high and low pressure, while one form consists of a hospital filter with thermometer attached. Thus a supply of sterile water at any temperature may be obtained for surgical requirements. The Sanitas Company, Limited, of Locksley-street, Limehouse, London, E., exhibited a number of sanitary appliances, including the well-known sanitas disinfectants, sanitas formic lamps and fumigators, and sanitas sulphur fumigating candles and drain testers. Amongst the disinfectants were preparations having a carbolic coefficiency respectively of 20, 10. 8, 5, and 2. Close by were the sanitary compounds of Messrs. Jeyes, of 64, Cannon-street, London, E.C. The stall was occupied chiefly with preparations of cyllin which is guaranteed to be at least ten times less toxic than carbolic acid and to have Rideal-Walker coefficients ranging from 10 to 30 according to the organism employed. The exhibit included medical cyllin, soaps, dusting powder, lint, gauze, and cyllin inhalant. Amongst sanitary appliances may be counted the floor polishes of Ronuk, Limited, of Portslade, near Brighton, which are used satisfactorily in the wards of the principal hospitals. It is convenient also to include in this section the interesting exhibit of the Cellular Clothing Company, Limited, of 72 and 73, Fore-street, London, E.C. The Aertex cellular clothing is porous while it is a non-conductor of heat. It follows that while this cloth protects the body from cold it does not interfere with the escape of the exhalations from the skin. Lastly may be mentioned the exhibit of the Sanitary Wood Wool Company, of 14 and 26, Thavies Inn, Holborn-circus, London, E.C. This exhibit included antiseptic wood-wool tissue for the absorption of discharges, wood-wool sheets for accouchement, wood-wool vaccination pad, and a specially absorbent cotton wool.

### V.—MINERAL BEVERAGES, &c.

This section contained several exhibits demonstrating the properties of the mineral waters of some of our home watering-places. The corporation of Leamington, for example, furnished a stall on which were photographic illustrations of this spa and its balneological appliances; there were also specimens of Leamington water. The installation at Leamington includes heat and light baths, treatment by high-frequency current, and swimming and Turkish baths. The advantages of the Harrogate waters and of a stay at the place itself were also amply illustrated at the exhibit of the Harrogate corporation. Specimens of the waters were shown at this stall by Messrs. Croyden and Co., of 55, Wigmore-street, London, W., who took the opportunity also of bringing to the attention of medical men their shadowgraph bougies which have been used with conspicuous success for the exploration of the ureters and kidney in renal disease. The advantages of the Buxton thermal mineral waters were explained at a stall under the management of Mr. John Hatton of Buxton. Here could be obtained an account of the climate of Buxton, of the facilities for exercise there, of the up-to-date arrangements provided for bath treatment, x ray treatment, and electropathic methods. An auxiliary at Buxton appears in the form of moor or mud baths, there being an extensive supply of peat in the immediate neighbourhood of the town. The Perrier Company of 45 and 47, Wigmore-street, London, W., presented a well-designed exhibit of bottles in three sizes of Perrier table water. This water is beautifully soft to the palate, is only slightly alkaline and mineralised, while it is free from objectionable excess of carbonic acid gas. In addition to the well-known purgative bitter water Apenta, the Apollinaris Company of 4, Stratford-place, Oxford-street, London, W., exhibited Johannis water and Apollinaris water. It may not be generally known that Apollinaris water contains natural bicarbonate of soda which gives to it the same antacid properties as are presented in the liquor sodæ effervescens which was at one time in the British

Pharmacopœia. The exhibit included Johannis lithia and potash waters. A very fine exhibit of mineral waters was that of the Chemists' Aerated Mineral Waters Association, Limited (Camwal), of Camwal Works, Bristol. One excellent non-alcoholic drink prepared by this firm is a very palatable pale dry ginger ale which contains a minimum of sugar. The exhibit included also a novelty in the shape of a "splitlet," a bottle smaller than the "split" size and containing a small quantity of soda-water representing the quantity usually consumed with spirits. Messrs. Ingram and Royle, Limited, of East Paul's Wharf, 26, Upper Thames-street, London, E.C., exhibited a large selection of natural mineral waters. There were also specimens of Carlsbad and Vichy salts. The Friedrichshall Company, of 10 and 12, Milton-street, London, E.C., exhibited the well-known natural aperient mineral water of Friedrichshall. It contains the sulphates of magnesium and sodium in nearly equal quantities, the usual dose being from one to two tumblerfuls. It also contains the chlorides of magnesium and sodium which are said to modify advantageously the action of the sulphates. Lastly should be mentioned the excellent samples of Devonshire cyder exhibited by Messrs. H. Whiteway and Co., of the Orchards, Whimple, Devon. Samples were submitted for tasting purposes and the verdict was obviously a favourable one.

### VI.—PUBLICATIONS.

Amongst the publishers exhibiting books on modern medicine and surgery were W. B. Saunders Company, of 9, Henrietta-street, Covent Garden, London, W.C.; Mr. Sidney Appleton, of 25, Bedford-street, Covent Garden, London, W.C.; Mr. H. K. Lewis, of 136, Gower-street, London, W.C.; and Messrs. Rebman, Limited, of 129, Shaftesbury-avenue, London, W.C.

On previous occasions we have included in our notice of the annual exhibition a miscellaneous section, but this year there were no exhibits coming under this head.

---

ERRATUM.—In the report which appeared in our issue of August 10th of the Section of State Medicine at the British Medical Association held on Thursday, August 1st, Dr. J. H. Drysdale of London was erroneously reported as speaking in the discussion on the home contamination of milk. The speaker was really Dr. C. R. Drysdale of London.

---

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, August 15th, 1829.

### DR. AMUSSAT'S METHOD OF ARRESTING HÆMORRHAGE.*

*To the Editor of* THE LANCET.

SIR,—M. Amussat, doctor of medicine, and lecturer on anatomy in Paris, having lately been employed in very interesting experiments, on the "*tortion of blood vessels," as a means of stopping hæmorrhage*, has requested me, through Mr. John King Dingle, his pupil, who witnessed those experiments, to insert, in your extensively read Journal, a short account of his discovery. It appears that this gentleman was led to devise his new means of stopping hæmorrhage, by reflecting on the well-known canon in surgery, that "torn wounds do not bleed." His first essays were made on dogs and horses; having divided arteries in these animals, he bruised and lacerated the vessels in a variety of ways, but always without producing a durable suspension of the bleeding. After many attempts, he found that twisting the artery a sufficient number of turns was an effectual styptic, and, in his opinion, a more simple and expeditious, and less painful method than the ligature. Dr. Amussat's experiments were made in the presence of some of the most distinguished surgeons in Paris, and repeated before the Royal Academy of Surgery, and the general opinion entertained is, that his mode of operation will be one of the greatest utility, especially in the army and navy, as it enables the surgeon himself to secure the largest artery without the aid of an assistant.

The following is his mode of proceeding: Each orifice of the bleeding vessel, whether artery or vein, is to be seized with a pair of small forceps, so constructed as to be kept close with a spring; the vessel is then to be drawn out and separated from the different tissues which surround it, and a certain portion is to be insulated with another forceps, probe-pointed, and to be held in the left hand, for the purpose of limiting the effect of the tortion, which would otherwise affect too great a length of the vascular tube. The tortion is to be made with the right hand on the elastic forceps; ten half turns of the forceps will suffice to repress the flow of blood, and twenty will tear through the tissue of the vessel. It is necessary, after every three or four turns, to relax the hold a little, to allow the retraction of the artery or vein.

The rupture of the middle and inner tunics takes place, most frequently, after ten half turns, and these are forced back into the area of the artery, so as to form a valve, which is closely involved by the cellular coat; it is recommended, however, to twist the end of the artery off, as it presents a greater degree of security, and has been attended with more satisfactory results. The doctor's plan is supported by numerous proofs derived from instances of complete success. To render the tortion more easy, it is necessary to draw the artery well out from its connexions, and the twisting ought to be confined either with the thumb and index of the left hand, or with the blunt pointed forceps before mentioned.

M. Amussat, after having successively and comparatively tried all the different means hitherto adopted in the suppression of hæmorrhagy from arteries and veins,—having used every kind of ligature that has ever been recommended,—having plunged the extremities of arteries into the most powerful and concentrated acids,—and after pressing, crushing, bruising, turning up, and pushing back the bleeding extremities,—has found no process so certain, or so often successful, as that of tortion. The twist, if properly executed, is not only sufficient to withstand the *vis à tergo* of the column of blood, but will bear, without detriment, the friction of a sponge in cleaning the surrounding parts. After having assured himself of these facts on the lower animals, M. Amussat tried whether this process were applicable to the human body. He put in practice his tortive experiments on the tubes of every calibre, from the narrow channel of a ramus cuniculus to the main canal of the aorta. To ascertain the quantity of resistance which the torsion would offer to the column of blood, he injected, with a powerful syringe, into the twisted arteries of a dead body, a fluid of equal density with the blood, but in no instance did the bulwark of the twisted extremity give way, although, in several instances, the coats of the arteries were ruptured by the force of the pressure employed. M. Amussat has not communicated to me any examples of its application on the living subject.

To illustrate more cogently the principles which this justly-celebrated physiologist wishes to establish, I shall suppose a case of divided radial artery. Each of the bleeding extremities is to be laid hold of by the self-shutting forceps already described; the flow of blood being thus arrested, the operator seizes hold of the forceps, already fixed on the artery, and gently extends the vessel from its sheath, whilst, with the probe-pointed forceps in the left hand, he grasps the artery about three or four lines from its extremity, and presses the sides together, thus limiting the extent of the tortion, which is next to be affected. The insulated piece of artery is now to be twisted to ten or twenty half turns, and the conical end of the vessel remains perfectly secure. By the traction first applied, the elastic external coat is drawn over the two inner and less versatile tunics, the ends of which are rolled back, so as to plug up the mouth of the tube, and afford a safe basis for a coagulum. The consequent effusion of lymph guarantees the success of the process.

Of the practicability of M. Amussat's plan I have had no personal experience, and I therefore do not presume to offer an opinion. I am, Sir,

Your obedient servant,

D. O. EDWARDS.

Westminster Hospital,
6th August, 1829.

P.S. M. Amussat has also invented an improved lithotritic apparatus, and an instrument for dilating the urethra.

---

* This letter was not received until after the account of Dr. Amussat's method of arresting hæmorrhage, given at page 580, had been sent to the press.—ED. L.

(Vide "Looking Back" in THE LANCET of August 10th, 1907, p. 407.)

# THE LANCET.

*LONDON: SATURDAY, AUGUST 17, 1907.*

## The Housing Congress.

THE International Congress upon Housing has been engaged, apparently in a very sensible and practical way, in endeavours to approach the solution of a problem of vast importance to all large or crowded communities, and of such a kind that the members of the medical profession have special knowledge of its nature and urgency. Whether as practitioners or as moralists we have numerous facilities for observing the degree in which the influence of home may be traced throughout the career of the individual or the history of the race, and we are daily witnesses of its effect alike upon health, upon intelligence, and upon character. In this country there has no doubt been a steadily progressive improvement as regards many objectionable or injurious home influences, but this improvement has to some extent been neutralised by the overcrowding consequent upon two main factors, the absolute increase of population within the limits of territory, and the increasing tendency of that population towards aggregation in great towns. We had occasion, a few weeks ago, to quote the description given by Sir JOHN SIMON in 1849 of the housing of the working classes in the City of London; and, although it is inconceivable that the horrors therein set forth should anywhere be repeated in the England of our own day, it is none the less certain that, in the face of modern tendencies, their re-appearance can only be prevented by constant vigilance on the part of municipal and sanitary authorities. Mr. BURNS, we observe, has lately expressed the opinion that it is essential, as a first step towards the improvement of housing, to increase the earnings of the lower industrial strata of the community and especially of casual or unskilled labour; but in this pronouncement he has, we think, fallen somewhat below his ordinary level of sagacity. A man, be he a labourer or anything else, will spend his earnings mainly in procuring the things which he wishes to have, and as long as the labourer prefers beer to cubic space or to cleanliness, so long will any increase in his resources be devoted to the real object of his desire, rather than to others which are regarded as more excellent by sanitarians or philanthropists. At a not very remote period, when high wages were being earned in the Midland coalfields, it was not uncommon for miners to dine in May upon salmon, followed by ducklings and green peas, although many of them were contentedly living in hovels, and scarcely possessed clothing which a tramp would have picked up in the road. A few years ago, moreover, when a philanthropic society undertook the work of repairing certain tenements in St. Giles's, and of rendering them fit for human habitation, the chief difficulties which they encountered arose from the tendency of the occupiers to tear out gas- and water-pipes from the walls, or to remove door and window fastenings for the purpose of converting them into money, and later, perhaps, into gin.

An exceedingly instructive report recently issued by the Local Government Board is that of Dr. L. W. DARRA MAIR on the sanitary circumstances of the Whickham urban district, with special reference to its housing accommodation generally, and to certain back-to-back houses at Marley Hill in particular. Dr. MAIR reminds us that, according to the standard of the Census Commissioners, "overcrowding" is defined as a condition which exists when tenements are occupied by more than two persons per room (including every bedroom, sitting-room, or other room); and in the Whickham urban district he found the requirements of this definition to be fulfilled in 62 out of 112 one-roomed tenements, in 398 out of 886 two-roomed tenements, in 179 out of 660 three-roomed tenements, and in 59 out of 585 four-roomed. Stated in another way, the facts were that 698 families, comprising 4889 persons, were so housed as to be living more than two in a room. The number of "overcrowded" families was 27 per cent. of the total number of families in the district and the number of "overcrowded" persons was 38 per cent. of the total population, proportions which are not equalled, and are scarcely approached, anywhere in England or Wales save in certain parts of the counties of Durham and Northumberland. This overcrowding in the Whickham district is most remarkable in a number of small back-to-back dwellings at Marley Hill—dwellings occupied by a well-to-do class of miners and containing furniture and belongings which may almost be described as luxurious and are always good and comfortable. In these dwellings there has for many years been a high rate of mortality, which seems to have been disguised under an ingenious manipulation of figures but which Dr. MAIR renders conspicuous. Taking the ten years 1896–1905 the mortality of Marley Hill as a whole has been 13·9, while that of the inhabitants of the back-to-back houses has been 16·0 and that of the remainder of the district 12·6. The infantile mortality in the back-to-back houses has averaged 221 per 1000, against 147 in the rest of the district, and all this notwithstanding that the inhabitants are distinctly of a superior class, that they are not poor, and that the general sanitary conditions are fairly good. The reason of the overcrowding is explained to be that the houses belong to the colliery proprietors and that by virtue of an old local custom they are occupied rent-free by the miners as part of their wages. Men who cannot get a "rent-free" house receive a money allowance in lieu thereof; but the rent they have to pay slightly exceeds the amount of this allowance, and a miner receiving it, as soon as a "free" house which he can claim by seniority falls in, hastens to occupy it, however inadequate it may be to the requirements of his family. It would be impossible to adduce stronger evidence that neither better pay nor the mere general "elevation" of the working classes will impel them to make any sacrifice for the sake of good housing, and that adequate instruction as to the bearings of the question upon their health and comfort is one of the most urgent requirements of the case.

It scarcely falls within our province to consider the various schemes, municipal or private, philanthropic or speculative, which of late years have been put forward as likely to afford solutions of the "housing question," and we have no desire to minimise the difficulties by which that question is surrounded. They are so great, and of such a nature, that the whole subject appears to us to be one of national or imperial concern, which should no longer be left to private or even to local enterprise, and which urgently requires the intervention of the legislature. It is clearly necessary that every centre of population should be rendered able to provide shelter for its industrial elements, who, if left to find house accommodation for themselves, are certain to become the prey of a very undesirable set of speculators, and equally certain to provide centres of physical and moral evil from the effects of which their better housed neighbours cannot hope to remain exempt. It is very urgent that avoidable evils arising in the homes of the lowest classes of the community, and especially among those who live by unskilled labour, should be sternly repressed by law; if necessary, by the methods employed in some continental countries, such as compulsory labour colonies and separation of the sexes, so that the great educational power of the magistrate may be brought to bear upon the classes most in need of enlightenment. In addition to these influences we want that of the school, such as it might be made if managers and teachers would learn that their business is to educate, not merely to impart the rudiments of the three R's, and to educate chiefly in those directions in which the home influences surrounding the pupils are misleading or defective. Such directions, in the homes which most require amendment, are not difficult of discovery. The children who come from them have need to learn the first principles of conduct. Assuming Mr. BURNS to be correct in his view as to the necessity of higher wages, the children have to learn that the way to get higher wages is to deserve them. They have to learn that a dirty and overcrowded home means disease and death as well as the extent to which these evils can be kept at bay by an observance of the first rudiments of sanitation. By some agency or another, it cannot be doubted that decent houses will in the future be provided for all who are fit to be trusted with them; and the development of this fitness will be the proper work of the school, as soon as those responsible for conducting it can emancipate themselves from traditions which have long lost all vitality and are mere survivals of more primitive times. If the principles of conduct were taught to both sexes, and the arts of cooking and housework to the girls, it would in time become possible to leave the submerged, the slattern, the incapable, and the sot, to be dealt with according to their deserts by properly constituted authorities.

◆

## "Rheumatoid Arthritis."

AN interesting discussion took place at the recent meeting of the British Medical Association which was held at Exeter on Rheumatoid Arthritis and the Morbid Conditions which Simulate it, with Special Reference to Pathology and Treatment (see p. 440 of our present issue). The classification and diagnosis of diseases of the joints which bear a resemblance to rheumatism and gout are acknowledged to be matters of considerable difficulty. The practitioner is liable to become confused as to the various terms employed to designate morbid changes in the joints, which changes may be ill-defined or so similar as to be scarcely distinguishable one from another. The speakers who took part in the discussion on rheumatoid arthritis well illustrate the divergent views which are still held as to the condition popularly known as "rheumatic gout." Whilst some practitioners deprecate this term as inexact, inasmuch as they maintain that the disease has no connexion with rheumatism or gout, others still hold that some relationship exists between the maladies. The question is naturally of considerable importance, since the treatment must depend upon the causal factors that produce the changes found in the joints and upon the extent to which we are prepared to regard the condition as a distinct clinical entity.

The very lucid statements of Dr. ARTHUR P LUFF, who opened the discussion, probably express the views held by the majority of physicians, although the remarks uttered by subsequent speakers indicate the arguments which may be urged against those views. With regard to terminology Dr. LUFF used the words "rheumatoid arthritis" throughout, although he admitted that the term was open to the objection that it presupposed a causal relation between the condition and rheumatism. "Arthritis deformans" would perhaps be more correct, and "osteo-arthritis" might be employed, but Dr. LUFF preferred to restrict this term to the "so-called forms of monarticular rheumatoid arthritis which were always traumatic in origin," a limitation which is surely not generally observed. Dr. LUFF rightly pointed out that rheumatoid arthritis is a constitutional disease, not a local one, the affection of the joints being only a part of the morbid process. This is of importance in respect to treatment, especially when mechanical methods are employed. It is now generally accepted that rheumatoid arthritis is a disease due to micro-organisms gaining access to the blood, probably through the alimentary tract, although invasion may also take place from the nose, pharynx, or air tubes. It is also acknowledged that various predisposing causes exist, such as excessive work and strain, debilitating conditions (especially influenza), a neurotic disposition, and traumatism.

From a practical point of view the diagnosis and treatment of the disease are of supreme interest. Early diagnosis is of first importance, since it is evident that better results will be likely to follow if the nature of the malady is recognised and suitable treatment is employed before deformity of the joints manifests itself. The early stages of the disease are characterised by rapidity of pulse, local sweatings and progressive involvement of joints. The tachycardia is persistent, scarcely any variation being observed by day or night. Many observers have also drawn attention to the spotty pigmentation so frequently seen in the skin of patients suffering from this disease. Cold extremities are also a characteristic feature. Whilst these general symptoms may suggest the nature of the illness attention is naturally especially directed to the condition of the joints. In the acute form, as Dr. LUFF pointed out, the synovial membranes are primarily mainly affected, while the ligaments are softened and infiltrated, presenting the well-known spindle-shaped enlargement of the joints. The cartilages are damaged secondarily, and it is not until the disease has assumed the chronic form that the signs indicative of destruction of the cartilage become evident accompanied with cartilaginous and osteophytic outgrowths. At this stage, too, the grating in the joints and the resulting deformities are characteristic, being evident both to the physician and to the patient. Dr. Luff further drew attention to the existence of Heberden's nodes, which represent the mildest degree of the disease and are found in the chronic form of rheumatoid arthritis. Some of the speakers laid stress on the aid given to diagnosis by the use of the x rays. The necessary apparatus, however, is not available to all practitioners, and hence a conclusion must be arrived at by a consideration of the general and local signs to which we have alluded. The treatment of rheumatoid arthritis differs in many respects from that adopted in rheumatism or gout, hence again the importance of diagnosis presents itself. The diet must be as liberal and good as the patient can digest and animal food may be freely partaken of. Stout or ale may also be given with advantage. The drugs recommended by Dr. Luff are guaiacol and iodide of potassium. Guaiacol is best given in cachets in the form of the carbonate. At first from five to ten grains may be given three times a day and the dose should be increased by one or two grains each week until from 15 to 20 grains are taken in each dose. Dr. Luff insisted on the importance of continuing this treatment for at least 12 months. The beneficial effects of guaiacol may be added to by administering at the same time iodide of potassium, combined with a tonic to counteract its depressing effect. Iodide of iron has also yielded good results in the hands of some observers. The mechanical treatment of rheumatoid arthritis was also duly discussed, some of the speakers having had the advantage of prolonged experience in hydro-therapeutics. Douche-massage when obtainable has yielded good results and so have peat and brine baths. Radiant heat baths have also proved of advantage. When such measures cannot be obtained, however, much relief may be derived from the use of general massage regularly given. Local massage of the joints is not so satisfactory and physical exercises may also be of advantage when properly regulated.

We have only alluded to certain points which were raised in a discussion the importance of which cannot be well exaggerated, and we trust that the various opinions which were expressed may be of value to those who are engaged in investigating the subject either from a purely clinical point of view or in the laboratory. Dr. F. J. Poynton, whose researches as to the bacteriology of the disease deserve serious attention, referred to the micrococcus which, working with Dr. A. Paine, he had isolated from a joint and by it had produced rheumatoid arthritis in rabbits. The record of this work was published in our columns, but we are not certain that its suggestiveness appealed with sufficient force to our readers. Dr. T. J. P. Strangeways also stated that he was engaged at Cambridge in a research into the pathology and etiology of the disease, which he did not regard as a clinical entity but as a type. His results will be awaited with interest. The elucidation of the etiology of rheumatoid arthritis has not yet been accomplished, but we trust that the efforts that are now being made will be effectual in placing the nature of the disease beyond doubt and so enable the treatment to be carried out on rational lines.

## The Health of the Teacher.

When we called attention last week to the recent plethora of congresses dealing with medical and allied subjects which have met in our midst we implied no lack of sympathy with the objects of their labours nor undue scepticism as to the useful results which might accrue. There is, indeed, something to be said for the simultaneous holding of congresses, as it will frequently happen that opinions expressed at one meeting will be confirmed by experiences recorded at another, while it is possible for men of wide interests to attend with the minimum of inconvenience the sessions of several organisations. Our only regret is that while so much material of interest to our readers is available mechanical reasons compel us to be selective in what we publish, and we particularly regret our limitations in the matter of the proceedings at the Congress on School Hygiene, for many of the problems which came before this Congress have been dealt with from time to time in our columns, and we have continually urged upon the public and on the various authorities concerned the vital importance of the hygienic management of our schools. That great good will result from the holding of this meeting in London we cannot doubt, nor can there, unfortunately, be any question that we in England have much leeway to make up in the field of school management and organisation. It is melancholy to be told that this country is not only behind the principal nations in Europe, including Russia, but has also been passed by Chili, Argentina, and Servia, in providing for such an elementary necessity as medical examination of school children. There are many physical defects which render a child incapable of profiting by the instruction provided for his normal companions and which may even cause school discipline to be a source of actual bodily injury; knowing this we cannot doubt that the neglect shown by this country to provide for the medical inspection of school children has caused, and is causing, serious drawbacks to many of the rising generation of citizens who, as they themselves become more instructed in personal hygiene, will look back on their school experiences as a period of barbarous mismanagement on the physical side, counterbalanced perhaps (and perhaps not) by intellectual gain. If, as we hope, the Congress has succeeded in bringing home to thoughtful minds the reality of the existing evils, we shall, indeed, have cause to congratulate ourselves on results of national importance. A perusal of the *résumé* which we give this week of some of the more important events of the Congress will show from what varying directions the subject of school hygiene has been approached and what a mass of first-hand knowledge has been placed through its means at the disposal of the public.

In applying the laws of health to school affairs a legion of problems arise, sufficient to supply material for the consideration of many conferences. The children's eyes, ears, and teeth, their hours of relaxation and of sleep, their food, and their varying degrees of mental power all demand attention, and it is manifest that all are receiving it. But there is one aspect of the matter which is liable to be lost sight of by inquirers in this field. The teachers as well as the taught deserve consideration. They are equally exposed to risk of ill-health if the condition of the school be insanitary. Light and air, recreation and rest, are as needful for them as for their charges. Their very efficiency as teaching machines depends on the preservation of their faculties in the best working order. We are glad to find that at the Congress a special section was devoted to a study of the teachers' needs and that it was opened with a thoughtful address from Dr. T. J. MACNAMARA, M.P., who when he descends from the partisan platform to a consideration of matters in which he is an expert, is always a weighty and an interesting speaker. Two main points were emphasised in his remarks. The first was the importance to the teacher of conditions favourable for making himself heard by his audience. The profession of teaching involves an almost continual use of the voice and the resulting strain thrown on the larynx is very great. Many members of our own profession have opportunities for realising the degree of effort involved in delivering even an hour's lecture when the speaker has to contend against the noise of street traffic or any similar disturbance. But the duties of a school teacher are considerably more arduous, inasmuch as his labours are continued for many hours each day and involve not merely the fairly congenial work of delivering a prepared lecture, but the more wearisome effort of expounding elementary and therefore uninspiring matters to immature minds, with much wearisome repetition and amplification. In addition there is the necessity of maintaining discipline among a class often much too large for convenient handling, since financial pressure tends to keep down the number of teachers employed to the lowest limits. If, then, owing to the position of the school or to some other defective condition, additional difficulties are placed in the teacher's way the task becomes more than normal health and strength can overcome. Fortunately, most schools are placed at a distance from busy thoroughfares, if only in consequence of the annoyance caused to neighbouring residents by the young barbarians at play and by the vociferous enthusiasm of their exits. But now and again schools are unsuitably placed as regards traffic, and the teacher has to do his work amid the rattle of carts and the rumble of heavy vehicles, struggling pitifully to make his voice audible through the tumult which surges through every open window and door. This unequal struggle of the voice against the outside hubbub must be maintained throughout school hours. It cannot be wondered at that many a breakdown of health is caused by such conditions. Even in favourable circumstances the trial of the vocal powers of the teacher may be considerable and it would be well to arrange for instruction to be given to them in right methods of voice-production which may prove a striking boon to an uninstructed speaker. Nor must the general mental strain of teaching be forgotten and the need for sufficient time for rest after the day's work. Medical men have only too often to insist that delicate children shall not be made to spend their out-of-school hours upon home lessons; the same rule should apply to the teacher, who needs a fair interval of rest to prepare for the labours of the morrow.

A second important point dwelt upon by Dr. MACNAMARA was the incidence of pulmonary tuberculosis on school teachers. Experience of any hospital for chest diseases certainly bears out the extent of the evil in question which is unfortunately easier to indicate than to remedy. The disease is apparently one of indoor life and the teacher's time must be mainly spent within doors. The actual opportunities of infection within the school building are not, we should think, serious, since children with tuberculosis seldom expectorate and such behaviour in school would at once be checked. Still, the ventilation of school buildings is not a very easy matter to arrange; it is difficult to avoid some closeness of atmosphere during lessons, especially in winter. Any lurking tuberculous infection is thus liable to be stimulated. A remedy must be sought first in diffusion of the knowledge of the danger incurred by violation of the laws of health and of the value of fresh air in combating the malady. Here to be forewarned is to be forearmed, and those who realise the danger of a vitiated atmosphere will be less likely to be seduced by the attractions of shut windows or terrified by that domestic bogey, a draught. In the summer classes might be held out of doors with benefit to both teacher and taught when other circumstances allow, but in urban schools this cannot often happen. Time out of school may be spent in the open air, and open windows at night must be the rule. The cultivation of some outdoor pursuit, such as golf or cycling, will be a great aid to a healthy life on the part of the teacher. We are brought back again to the principle upon which we have so often insisted. Since lack of knowledge is still the first cause of those imprudences by which health is endangered, due instruction of school teachers in the elements of hygiene must be insisted upon, not only that they may teach the laws of health to the children but also that they may practise them themselves; and when these laws are matters of universal knowledge more will have been accomplished for the happiness of the nation at large than by the most attractive scheme of social plunder that has ever beguiled the enthusiastic reformer.

## Annotations.

"Ne quid nimis."

### THE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE Fourteenth International Congress of Hygiene and Demography will be held in Berlin from Sept. 23rd to 29th. On Sunday, Sept. 22nd at 8 P.M. there will be a reception of members at the Neues Königliches Operntheater (Kroll). On Sept. 23rd the inaugural meeting will be held in the same place at 11 A.M., after which the exhibition will be opened in the Reichstag buildings, where also the meetings of the various sections will take place. The afternoon of that day will be spent in visits to local institutions. The sections will meet at 9 A.M. on Sept. 24th, 25th, 27th, and 28th. The afternoons will be devoted either to meetings of sections or to visits to local institutions on Sept. 24th, 25th, 26th, and 28th. The general meeting will be held on Sept. 26th at 9 A.M., and the closing meeting on Sept. 29th at 10 A.M. In the evening there will be a reception by the municipality at the Rathaus on Sept. 24th, a dinner on the 25th, performances at the Royal theatres on the 26th, and a garden party on the 28th. After the conclusion of the Congress on Sept. 29th there will be a visit to Hamburg, where a social meeting will be held in the evening, and Sept. 30th will be spent partly in sightseeing and partly in a reception by the municipality at the Rathaus. The Congress is divided into the following eight sections: (1) hygienic microbiology and parasitology; (2) dietetic hygiene and hygienic physiology; (3) hygiene of childhood and schools; (4) occupational hygiene and the protection of the health of workpeople; (5) the prevention of infectious diseases and the care of the sick; (6) in two subdivisions (*a*) hygiene of dwellings, towns, and water, and (*b*) hygiene of methods of intercommunication and life-saving; (7) military, colonial, and naval hygiene; and (8) demography. The official languages of the congress are English, French, and German. Any person of either sex interested in hygiene or demography may become a member. The membership subscription is £1 (20 marks); relatives of members and students at colleges or universities may also be received as associate or passive members on payment of 10*s*. (10 marks); they may attend the meetings and the visits to places of interest but may not take part in the discussions. These subscriptions must be sent as soon as possible to the general secretary, Dr. Nietner, Berlin 9, W., Eichhornstrasse 9. The Congress has national committees in each of the participating countries. The chairman of the English committee is Sir Shirley F. Murphy, and the honorary secretaries are Professor George H. F. Nuttall, 3, Cranmer-road, Cambridge, and Dr. Paul F. Moline, 42, Walton-street, Chelsea, London, S.W. As the number of visitors promises to be very large the organising committee of the Congress recommends that hotel accommodation should be secured beforehand, and for this purpose the committee has made arrangements by which the Hamburg-Amerika Steamship Company will receive orders sent by members to its tourist office, Berlin, W., Unter den Linden 8. This company will on application send a list of 12 hotels where rooms and breakfast may be obtained at daily rates varying from 4 to 14 marks. A deposit of 10*s*. must be paid and the order must be given by Sept. 16th at latest. We have already mentioned in our issue of July 6th that a ladies' committee has been formed for the purpose of receiving the ladies, both German and foreign, accompanying members.

## MOTOR TRAFFIC AND THE POLLUTION OF THE AIR.

AS at present constructed the petrol motor is far from being a perfect engine. It may be satisfactory enough from the point of view of locomotion, but it is transparently defective from the point of view of hygiene. Not only does the motor engine at times give off offensive fumes which are easily visible, but it also discharges unseen gases which, though apparently inoffensive, are decidedly poisonous. The perfect combustion of the petrol is hardly ever attained, and amongst the products of incomplete combustion are two deadly gases—carbon monoxide and acetylene. It is not in the interest of the public that these gases should be discharged freely into our streets, and the chauffeur who, through bad engineering, allows his motor to evolve a maximum volume of these gases for each explosion in the engine is just as much a sinner against hygienic demands as is the manufacturer who makes the air vile with filthy black smoke. If no attention is paid to petrol consumption, the engine being set to give its maximum power, the exhaust will contain a considerable amount of poisonous carbon monoxide. If, however, attention be given to the consumption of petrol, so that just the quantity required for so much energy is expended, then the carbon monoxide is reduced to a minimum amount. It is obvious that the first condition most frequently represents the actual state of things, and it follows, now that the streets of London, at all events, are crowded with motor vehicles, including quite a large number of motor omnibuses, that the outpouring of poisonous carbon monoxide must be considerable. It is to be hoped that this pollution will spare the pedestrians from those symptoms of carbon monoxide poisoning which are so well recognised in the poor collier who has been fortunate enough to escape the direct effects of the colliery explosion but who has been compelled to breathe the treacherous after-damp. Even small quantities of carbon monoxide in the air produce a serious disturbance of the health standard, the leading symptoms being headache, loss of power in the limbs, and a state of semi-consciousness as though a narcotic had been taken. In stagnant weather it would not be surprising to find that such symptoms had their origin in the outpourings of motor traffic and we may next have to consider the question of ventilating the streets when natural agencies in the shape of wind fail us. The old pollution due to animal products is rapidly passing away and a fresh sanitary problem is being presented in the new pollution which arises from the imperfect products of combustion of the petrol of motor vehicles. So long as horse traction is the vogue it is difficult to see how pollution due to physiological combustion can be entirely avoided, but with the new system of locomotion which depends upon a perfectly definite process of chemical combustion prevention should surely be easily accomplished.

## ABSINTHE.

SEVERAL French medical authorities maintain that habitual drinkers of absinthe exhibit far greater deterioration of both the mental and bodily functions than can be accounted for by the amount of alcohol consumed, and have suggested that the action of Belgium in prohibiting its sale should be followed. The taste for strongly sweetened and aromatic alcoholic drinks is by no means general in this country, although expensive liqueurs of various kinds are in some request in fashionable clubs and at the other end of the social scale "gin and cloves" is said to have had a vogue some years ago among laundry workers. When extra flavouring is desired the ordinary spirit-drinker adds a modicum of some kind of bitters; rum may also be taken with shrub; and there are stories to the effect that Caledonian topers have been known to impart "warmth" to whisky with cayenne pepper. In France absinthe is the favourite liquor of the dram-drinker. Its fatal fascination for the inhabitants of that country, so bountifully supplied with the natural wine of its own vineyards, is hard to explain. Those whose tastes lie in the direction of something stronger would, if they were well advised, drink brandy distilled from wine, for this does not produce the deplorable effects known collectively as *absinthisme*, against which the medical profession of France have for years been warning their countrymen. Absinthe is said to have been introduced into France about 60 years ago by soldiers to whom it had been recommended as a febrifuge during the long war which resulted in the conquest of Algeria. It has, as many of our readers doubtless know, a peculiar yellowish-green colour, a powerful odour, and a very marked aromatic taste in which oil of aniseed seems to prevail. Many formulæ for making it have been given. They generally resolve themselves into one of two processes —namely, either (1) the distillation of alcohol in which the pounded leaves, roots, and flowering tops of various aromatic plants have been macerated, including wormwood (Artemisia absinthium), angelica root (Archangelica officinalis), sweet flag root (Acorus calamus), and star anise (Illicium anisatum), with the subsequent addition of oil of aniseed and syrup; or (2) the simpler method of dissolving the essential oils of wormwood, anise, and coriander in rectified spirit, adding sugar and water, and colouring with chlorophyll. Absinthe is seldom drunk in a hurry by a thirsty and preoccupied individual standing at the counter of a public-house. It has to be diluted by the consumer, and this may be done with various adjuncts which give some opportunity for the display of dexterity, just as in mixing a salad during dinner or peeling an orange at dessert. In connexion with this subject we may mention that a substance indistinguishable from the ordinary absinthe of commerce, in respect of colour, odour, taste, and so on, has been recently put on the market under a totally different name.

## VACCINE-THERAPY.

WE publish this week the first part of a lecture delivered before the Harvey Society of New York by Sir A. E. Wright, which we trust will prove of service to many of our readers. It summarises the practical results achieved by his investigations in clinical pathology along a line of research which he has devised and perfected, and which promises to lay the foundations of a new and valuable branch of therapeutics. The portion of the contribution contained in the present issue summarises the various methods other than vaccine-therapy which have been adopted in the treatment of bacterial disease and proceeds to the discussion of the principles and *rationale* of the latter method, the machinery of immunisation, the questions of the composition of vaccines, and the estimation of their immunising effects by the method of determining the opsonic index. Next week we shall publish the more detailed description of the process of which this first part is an introduction; the second part will consist of Sir A. E. Wright's study of the "Curves of Immunisation" obtained by vaccination and other matters connected with the process, the therapeutic principles on which it is based, and the question of auto-inoculation with its artificial production for therapeutic purposes, and will conclude with a summary of the results that have been achieved by vaccine-therapy at the author's hands.

## THE ACCOMMODATION OF THE NAVVIES EMPLOYED ON THE BROOKLANDS MOTOR TRACK.

Dr. Reginald A. Farrar has issued a report to the Local Government Board dealing with the accommodation of the navvies employed on the motor racing track recently constructed at Brooklands, and he makes it the occasion of some remarks on the subject of the accommodation of navvies engaged on large constructional works in general. He estimates the navvies of Great Britain to form a nomadic community numbering with their women and children 100,000, and points out that they are in some sense outside the range of action of sanitary laws. It is an interesting sign of the times that a class that passed successively from the construction of dykes and canals to that of railways should now find its occupation depending on the motor industry. The social condition of the navvy of to-day is, we hope, better than that of those employed on the construction of the first great railways of the last century, of which those who have read Smiles's "Life of George Stephenson" will remember a very graphic picture. Dr. Farrar's report, however, shows that their conditions of life are far from being satisfactory and that in the case in point a body of 1600 men were imported into a neighbourhood to carry out work that would last over some months without any provision being made for their lodging and without the provision of even a trustworthy water-supply. Dr. Farrar made a personal inquiry into the state of affairs and found that some 600 men had lodgings in the neighbourhood, but that many of these had to walk or cycle from four to seven miles to and from their work daily, and that these were only accommodated by an unhealthy crowding of the lodging-houses and cottages in the neighbourhood. About 500 navvies came in to work by train, many from London; the fares paid by the latter reduced their weekly wage of 24*s*. by 4*s*. 6*d*. About 300 more were "sleeping rough," i.e., on Weybridge Common or in such straw- and stack-yards and even hen-houses (Dr. Farrar, by the way, says hen-coops) as they could enter undetected. When the weather was inclement they fortified themselves (in their own opinion) against the night in the open air by half stupefying themselves with beer. The men themselves had constructed two rough shelters on the site of the works, but these, owing to their insanitary state, were destroyed by the contractors, who, moreover, made no attempt to replace them until after Dr. Farrar's visitation. It is only fair to state that when the facts of the injustice to the men and the nuisance to the neighbourhood were pointed out the contractors readily undertook the erection of a wooden shed with bunks accommodating 50 men and laid on a good supply of drinking water from the main. The contract was unlike many others for important works, as a large number of men were employed working in night and day shifts, and the work had to be completed in an exceptionally short space of time. There seems no doubt, however, that the contractors were morally responsible, before introducing over 1600 men of a rough class into the neighbourhood, for ascertaining whether adequate lodging accommodation existed and supplying any default. Dr. Farrar in his report draws attention to some of the difficulties of the subject, and suggests the advisability of an inquiry into the conditions of navvy life in general with a possible view to legislation in the matter. The dissemination of infectious disease by this class should alone serve to direct attention to it in the interests of the community, and it is only fair to an indispensable and hard-working body of men that the necessities and decencies of life should be assured to them.

## THE MECHANISM OF ABDOMINAL PAIN.

Professor Lennander of Upsala read an important paper on abdominal pain, especially in connexion with ileus, at the recent annual meeting of the American Medical Association, which is published in the *Edinburgh Medical Journal* for August. His valuable researches on the subject of the mechanism of abdominal pain are now well known. He has found that abdominal pain is transmitted solely by spinal nerves—the phrenic, lower six intercostal, lumbar, and sacral. No abdominal organ endowed with the sense of pain is innervated only by the vagus or sympathetic nerves. Even a strong faradic current applied to the liver does not produce pain. Professor Lennander has cut through the gall-bladder so far as the cystic duct without causing pain, but when he tilted the liver or dragged upon the common bile duct, thus stretching the spinal nerves of the abdominal wall, pain was felt. The stomach, intestines, liver, and gall-bladder are not only without the sense of pain but also without the other three varieties of sensibility—the senses of pressure, cold, and heat. Professor Lennander has also found that the parietal peritoneum of the anterior abdominal wall possesses only the sense of pain and is devoid of the sense of pressure, cold, and heat. His observations are in favour of the specificity of the nerves of pain and of the view that the whole of the parietal peritoneum is provided only with nerves of pain—a condition previously known in the cornea. He believes that all abdominal sensations are transmitted only by the parietal peritoneum and its subserous layer, both of which are richly supplied with cerebro-spinal nerves. The irritability of the nerves of pain of the parietal peritoneum is much increased by slight peritonitis. Hence the movements of the stomach and intestines against the parietal peritoneum and the stretching of their mesenteries are felt as severe pain. In perforation of the stomach or intestine the first pain is caused by contact of the contents with the parietal peritoneum. In gastric ulcer the paroxysmal pains are elicited by movements of the stomach dragging upon the parietal peritoneum which is hyperæsthetic on account of the lymphangitis due to the ulcer. Contraction or distension of a segment of bowel which is attended with traction upon its attachments to the abdominal wall is painful. The pain of intestinal obstruction appears to be due to stretching of the mesentery proximal to the obstruction. Wilms considers that a coil of bowel when contracting upon its contents at the proximal side of an obstruction tends to become straight in the same way as does the gut in sausage making. The mesentery prevents this and becomes stretched. Displacement of the peritoneum of the abdominal wall seems also to be a cause of pain. During laparotomies Professor Lennander passed into the abdomen his finger covered with a rubber glove and pressed on the anterior abdominal wall. The patient felt nothing, but as soon as the serous membrane was displaced against the muscles a feeling of pain was experienced which varied according to the degree of sensitiveness of the individual and the amount of displacement. The patients described their sensations as "like colic," "as if the bowel is being expanded by wind," "like bad griping pains." Professor Lennander therefore thinks that a displacement of the peritoneum takes place and produces pain as soon as a loop of intestine contracts on its contents, hardens, rises, and presses against the parietal peritoneum. These pains appear to occur not only in ileus but in cases of temporary irregularities of peristalsis in people not suffering from abdominal disease. The pains in hepatic disease may be explained as follows. The liver, gall-bladder, and the extra-hepatic bile passages are without nerves of pain. But when the gall-bladder contracts to expel its contents the cystic and common bile-ducts and sensitive retro-peritoneal tissue are stretched.

## THE BALKAN STATES EXHIBITION AT EARL'S COURT.

THE Balkan States Exhibition at Earl's Court is much more interesting and attractive than it may at first sight appear. The fact is that it is easier to organise an exhibition of one or two small States. What they have to show can be displayed within a reasonable compass, and these Danubian principalities have the further advantage of picturesqueness together with a recent and romantic history; they have only been independent nations for so short a time and had to fight so hard for their independence. Can it be possible that they have so soon taken rank among the civilised peoples of Europe? This question a visit to the exhibition will answer. Thus, in the Bulgarian Section there are admirable diagrams setting forth the development of the country. Gilded cubes give by their size an idea of the annual general trade, then of the trade with each nation, so that at a glance the progress of the country can be realised and it is seen which are the nations that have most contributed. The new laws of these new countries are in many respects in advance of the old laws of the old countries. Thus, and only considering that which affects public health, there is Article 7 of the Bulgarian Law on the work of women and children which says: "Night work in all industrial establishments is forbidden for boys under 15 years of age and for all women and girls irrespective of their age." Then there is a clause forbidding women to work for four weeks after child-birth. Other clauses insist that no work can continue for more than five hours without a rest, and the unwholesome hurry over meals is prevented by the law which stipulates that the interval from work shall last at least one hour. In the Servian Section the London visitor will not fail to be somewhat disconcerted when he sees photographs of the outdoor recovery schools of Belgrade. Here in London, only within the last few weeks, an experiment in this direction has been made at Woolwich. 100 children are having their lessons, their meals, and their recreation in the open air or under verandahs in the park belonging to the Woolwich Coöperative Society lent to the London County Council for that purpose. Place has thus been found for 100 children out of the seething populace of this huge metropolis; and here is the little capital of the little principality of Servia with its outdoor recovery schools in full working order, not as an experiment but as a well-established institution. There are also various exhibits of the Society for the Protection of the Health of the Servian Nation and of schools of cooking and domestic economy. The industries and natural products of Servia and those of Bulgaria are well and graphically exhibited, and on all sides evidence will be found of young peoples eager to advance. There is undoubtedly a great future for the Balkan peninsula with its mineral wealth, its agricultural produce, its beautiful scenery, and its vast ranges of mountains where the most invigorating and pure air gives life and force to a brave and strong race of people. In these countries also the cost of living is much less than in Western Europe and there are many mineral springs and beautiful places where health stations have been established, which only require to be better known to become very popular. Concerning all these matters fuller information can be obtained from the commissioner of the Servian Government.

## SURRA IN THE FEDERATED MALAY STATES.

Dr. Henry Fraser, director of the Institute for Medical Research, Federated Malay States, and Mr. S. L. Symonds, the Government veterinary surgeon, have published in pamphlet form an "Interim Report on Surra" in that country. They say that trypanosomiasis in cattle and horses is on the increase and causes a great mortality among these animals in various tropical and subtropical countries. In horses the disease runs a rapidly fatal course and may quickly become epidemic; the clinical signs are those characteristic of surra; as a rule the microscopic demonstration of trypanosomes in the peripheral blood is easy. Cattle harbouring the parasites may for a long time appear to be in perfect health; apart from an occasional rise in temperature there are no clinical signs of the disease, and during this period microscopical examination will almost certainly fail to reveal trypanosomes. In the later stages the cattle become emaciated, the hair is scanty and dry, the poll is often denuded, and the animals are unable to perform much work. The most trustworthy method of detecting trypanosomiasis in cattle is by inoculation of their blood into rabbits and guinea-pigs, in the blood of which after a short period of incubation the parasites may readily be found. Biting flies of the genus tabanus are conveyors of the disease.

## HOSPITALS AND SPECTACLES.

SOME time ago a number of philanthropic ladies initiated an Association for the Supply of Spectacles in London Elementary Schools. The spectacles which they proposed to supply were found to be of a very inferior quality, so that the authorities of the Royal London Ophthalmic Hospital (Moorfields) and other eye hospitals were unable to accede to the request of the association to fill in the cards issued by them. The price of spectacles supplied at Moorfields to patients of the hospital was at the time under consideration with a view to revision. Investigation showed that some reduction was possible whilst still leaving a reasonable profit for the manufacturers. The revised prices were therefore adopted, the price for simple spherical lenses being 1*s.* 9*d.*, and that for sphero-cylinders of average strength 4*s.* 6*d.* We believe that the association has withdrawn its cards and now confines itself to the completely praiseworthy function of aiding necessitous persons to purchase spectacles by means of grants. We wish to draw attention to a letter which appeared in the *Times* of August 12th, signed by Lady St. Helier, chairman of the executive committee of the association, and two other members. It is pointed out that some hospitals have, and others have not, adopted the reduced rate now in force at the Royal London Ophthalmic Hospital and approved by the Metropolitan Hospital Sunday Fund. The Royal Southwark Eye Hospital has arranged that the reduced prices should be charged to children only, adults still paying the higher rate. In other cases the higher rate is charged to all. We concur with Lady St. Helier and her colleagues in hoping that the public notification of this anomaly may lead other London hospitals to fall into line with the Royal London Ophthalmic Hospital.

## EPIDEMIC CEREBRO-SPINAL FEVER.

Sporadic cases of epidemic cerebro-spinal fever continue to be reported from widely separated districts, but the notifications are obviously diminishing. In Scotland during the week ended August 10th there were four deaths from this cause registered in Glasgow, two in Edinburgh, two in Leith, one in Greenock, and one in Perth. In Glasgow the weekly report issued on August 9th showed that there were at that time 44 cases under treatment. In Belfast during the week ended August 10th there were three deaths registered as being due to this cause.

## SWISS SANATORIUMS FOR CONSUMPTIVES.

In The Lancet of July 2nd, 1904, p. 47, we gave some particulars of the cost of various Swiss sanatoriums, quoting some figures prepared by Dr. F. Schmid, president of the Swiss Committee for Combating Tuberculosis. This gentleman has just published his report for 1906 which contains some interesting details, and our Swiss correspondent writes: "Dr. Schmid refers to the nine sanatoriums which receive indigent patients (Volks sanatoria). They contain 671 beds, 114 of which are reserved for children. They are situated partly in the lowlands at an altitude of from 400 to 500 metres, partly in subalpine (from 800 to 900 metres) or Alpine districts (from 1000 to 1660 metres). The amount of air space which each patient has in the bedrooms varies from 20 to 50 cubic metres (from 16 to 20 in the sanatoriums for children). There is ample provision for conducting the open air treatment in the case of every single patient. The bedrooms and general sitting-rooms are well ventilated throughout. All the establishments are heated by radiators (Zentralheizung) and are lighted by electric light. The Zürich sanatorium at Wald and the sanatorium at Malvilliers (in the canton of Neuchâtel) alone are lighted by acetylene gas. The sputum is mostly disinfected by steam. Dr. Schmid made a special investigation to find out the average cost of erection of a sanatorium of about 100 beds in Switzerland. He comes to the conclusion that such a sanatorium, including the building plot and gardens, should not cost more than £220 per bed in the lowlands and £240 in the Alps, where the extra expense for constructing roads is considerable. These sums compare very favourably with those spent on similar sanatoriums in other countries. £300 are spent in Germany (Alland), £400 in America (Reception Hospitals, New York), the same amount in Sweden, £500 at Bligny (near Paris), £700 at Frimley (England), and from £530 to £880 in Russia. Dr. Schmid reports that the expense of erection of the four largest Swiss sanatoriums with from 90 to 120 beds amounts to £220 per bed, whereas in the case of small sanatoriums this sum rose to £310. The inclusive daily expenditure, without reckoning the interest on the capital expended for erection, amounts to 2·20 francs in the Bernese sanatorium at Heiligenschwendi and to 4·45 francs in the Basle sanatorium at Davos Platz, an average of nearly 3*s.* a day. In Germany this sum varied in five Hanoverian sanatoriums from 2*s.* 10*d.* to 3*s.* 10*d.* per diem."

## THE VENTILATION OF FACTORIES AND WORKSHOPS.

A valuable report issued recently under the auspices of the Departmental Committee appointed to inquire into the Ventilation of Factories and Workshops has been prepared with a view chiefly of furnishing some general guidance as to the application of fans to the ventilation of factories and workshops. It would appear that serious mistakes are frequently made in the design of ventilating fans owing to a want of knowledge of elementary principles. The purpose of the report is to set forth the essentials of the efficient ventilating installation, and it is to be hoped that owners and managers of factories and workshops who are not already familiar with the principles involved will fall into line with the excellent suggestions laid down. The report bears the signatures of Dr. John Scott Haldane, F.R.S.; Mr. E. H. Osborn, the engineering adviser to the Chief Inspector of Factories; Dr. James Ritchie, reader in pathology at Oxford; and the secretary, Mr. C. R. Pendock, inspector of factories for the Bristol district. The last-named gentleman has also prepared an appendix which contains a large number of detailed illustrations and descriptions, together with the results of experiments carried out for the committee on the proper arrangement of branch ducts and other apparatus connected with ventilation. The committee points out, seeing that the circumstances in which fan ventilation needs to be applied vary greatly in different rooms and different processes of manufacture, the necessity of carefully considering the special conditions requiring to be dealt with in each individual case. In all cases of doubt it is desirable that competent skilled advice should be obtained and that only such firms as are known to have at their disposal the requisite knowledge and experience in regard to fan ventilation should be employed. There can be no doubt that the adoption of the carefully drawn-up suggestions in this report would greatly mitigate, if not reduce altogether, the serious mischief caused to health by the inhalation of the dust evolved in certain trades.

## THE CHURCH OF ENGLAND MISSION TO HOP-PICKERS.

We have received the annual report of the Church of England Mission to Hop-pickers, accompanied by an appeal for help in the conduct of its annual campaign which will shortly open. The mission was founded 30 years ago and has been productive of the greatest good in the performance of its evangelistic, medical, and social work amongst a very low grade of the community. In a leading article in our issue of May 4th[1] we referred to the extremely interesting report on the accommodation provided for the hop-pickers which was made to the Local Government Board by Dr. Reginald A. Farrar; in this he described the arrangements that have been made by some of the larger growers to provide decent accommodation for the pickers. We may now quote his words in the report which deal with the work of this mission: "Credit for improvement in the condition of hop pickers is largely due to missions. It is generally agreed that there has been of recent years, owing to the influence of missionaries, a notable decrease of drunkenness among hop pickers, and this in itself conduces to a higher standard of decent living. Apart from the religious work of the Church of England Mission to Hop Pickers, the social work done by this society does much to promote the comfort and welfare of the pickers." It is amongst the so-called "foreign" pickers—i.e., those who are immigrants from large and sometimes distant towns—that the mission is active. It is obvious that the influence it is able to exert in raising the self-respect and standard of decent living amongst this class will result in an appreciation of the virtues of cleanliness that alone will be of value in safeguarding the public health of the hop districts, and we have an equal sympathy with the religious and social side of their work. Evidence of the care that the mission takes of the bodies of its charges is afforded by the fact that last season 20 trained nurses besides 40 missionaries and 33 lady workers were working for it amongst the 60,000 immigrant pickers in 37 parishes. Much of the work is voluntary and unpaid. The Rev. Francis G. Oliphant, honorary secretary to the mission, writes to us: "I will thankfully accept donations and subscriptions towards the £250 I have to raise annually, if sent to me at Teston Rectory, Maidstone, and parcels of illustrated literature for the reading-room and club tents, and bundles of old linen to aid the nurses in their ministrations to the sick, if forwarded to Wateringbury Station, S. E. and C. Ry." We gladly support this appeal, for we are assured that both the pickers themselves and the districts in which they are employed derive much benefit from the work of the mission.

---

[1] The Lancet, May 4th, 1907, p. 1237.

### A PLAN FOR THE REGULATION OF MOTOR TRAFFIC.

A LETTER from the chairman and secretary of the Motor Union of Great Britain and Ireland which has recently appeared in the daily press offers an admirable suggestion for the control of the motor traffic passing through small towns and villages on the main roads. There have been so many complaints from these quarters of inconsiderate and reckless driving on the part of some drivers of private cars that the Motor Union fears that further irksome, and at the same time ineffectual, speed limits may be imposed. To prevent the exhibition of so unpleasant a remedy by the police authorities the Motor Union has resolved to attempt to cure the disease by the adoption of its own remedy. This has taken the form of the provision of road agents on the main roads, who will be provided with a badge and whose duty it will be to warn drivers of dangerous places, and to advise them when they are about to pass through villages where special care is required. The coöperation of the local police authorities has been obtained in many instances, and the agents appointed are in most cases retired members of the police force; it is intended to employ army pensioners in this manner also. The scheme will be a credit to the enterprise and resource of the Motor Union if it is fairly worked, and if the road agents coöperate with the police, and are not used as a means of avoiding police-traps. For the necessity of police-traps is unfortunately a real one. There are undoubtedly a proportion of motorists, both owners and chauffeurs, who will never regard the sign-post warnings or the dictates of common sense in driving. Some of these at present are kept in order by the police. We understand that the Motor Union will now undertake that if any of these bad citizens commit preventable damage after receiving due warning from a road agent (the altered significance of the term is pleasing) he will neither receive nor deserve any sympathy in his subsequent dealings with the local justices. There are two abuses that need control badly—one is the close cutting of corners and the other the anointing of the number plate with vaseline or other adhesive substance in order that it may collect dust and become illegible. The agents could be particularly useful in stopping this latter law-evading device. We do not expect that the scheme will meet with the hearty support of the public all at once; the public has suffered and is suffering much from motorists, and will like to see how the Motor Union scheme works before commending it.

THE Department of Public Health of Queensland, in a bulletin dated July 6th, states that up to noon on that day no case of plague has occurred in Brisbane since May 31st. As regards the Cape Colony, the medical officer of health states that for the week ending July 20th no case of plague occurred in King William's Town. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on August 9th states that during the week ended August 8th no case of plague was reported. As regards Hong-Kong, a telegram from the Governor received at the Colonial Office on August 12th states that for the week ended August 10th there were 4 cases of plague and 4 deaths from the disease.

## SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

THE Second International Congress on School Hygiene terminated its work on August 10th and, as was probably to be expected, the view that the schoolmaster unsupported by medical training must be incapable of solving problems of school hygiene was generally adopted by all the meetings. This, in fact, is the message of the Congress, and if Sir James Crichton-Browne went further in declaring that its dominant note was that from henceforth schools must be more than ever under medical supervision and guidance we believe that he diagnosed the prevailing sentiment. It is a noteworthy fact that when the Education (Administrative Provisions) Bill was being considered by a Standing Committee of the House of Commons, a Member moved an amendment that only children should be inspected whose parents desired it, which was defeated by 32 to 1 after it had been pointed out that it was the duty of parents to subordinate their personal feelings upon matters concerning the health of the race.

*Medical Examination of School Children in Gloucestershire.*

DR. MYER COPLANS (medical inspector of schools, Gloucestershire education committee) contributed a useful paper referring to the Gloucestershire experiment of 1904, which, he said, arose out of a desire on the part of the county education committee to improve the condition of certain elementary schools at which the attendance and consequently the grant-earning capacity had become seriously impaired by reason of the continued prevalence of contagious skin diseases among the scholars. It became his duty, however, to point out to the education authority that it possessed no statutory powers enabling him to carry out a scheme involving the medical examination of any child save with the parent's consent. Thereupon his committee gave him a free hand to devise and to carry out some scheme which, while satisfying the parents, would elicit especially the main facts relating to the degree of prevalence of contagious skin disease among the scholars. To that end he circularised the parents of some 8000 children and 97 per cent. gave their adhesion to the scheme which he then proposed. That scheme in effect was summed up by there being issued to each child a card which was intended to accompany the child throughout his or her school life. On one side of the card were particulars filled in by the parents concerning the child's ailments, the medical history, and questions as to tuberculosis in the family. On the other side were notes made by himself at regular intervals concerning the child's physical and mental development, condition of skin, state of vaccination, together with remarks when necessary on the special senses.[1] For each of the 60 schools under observation there was instituted a medical register on which was tabulated standard by standard the condition of individual scholars as shown by the card. He found the columns relating to the records of zymotic disease of great assistance in determining the probability of spread of any particular form of disease in any standard, department, school, or even village, and he recalled one case of a village concerning which the columns relating to measles showed at a glance that there had been no instances of that disease for more than seven years. He was therefore prepared to advise school closure on the appearance of the first case of measles in that particular village. From the outset it was recognised on all hands that the voluntary element was to be the dominant factor; there was to be no threat of legal proceedings; moral suasion was the order of the day. Parents in general were given to understand that they at all times had direct access to him and that their suggestions would be welcomed. His own views on the subject of prevention of contagious and zymotic diseases among scholars were that detailed medical examination was unnecessary; while a cursory glance was usually sufficient to detect actual cases it could not be the means of stamping out the disease. The remedy lay rather in the provision of improved school furniture and school equipment; for each scholar nothing less than a separate desk and separate books, a separate drinking cup, and a separate peg for his clothing; while as for school buildings the tendency will have to be in the direction of better lighting, better ventilation, and more suitable offices, for he had in his mind the vivid picture afforded by the repeated inspection of some 60 rural and semi-rural schools. As to disease of the special senses, eye and ear, no doubt the appointment of inspecting medical officers would in course of time bring to light the large amount prevalent in rural as in other schools, when treatment and alleviation would naturally follow. The general adoption of any scheme of medical supervision would disclose the danger of the unsupervised private schools to which those parents who were offended by any scheme for medical supervision of their offspring would undoubtedly send their children. If such parents said that they considered the State medical supervision of their children as undermining of their own parental authority and a replacement of parental responsibility, it could be pointed out that in any case the parent had the last word in the matter. For as the law now stood the parent prevailed; he need not carry out medical advice or treatment even when tendered. All recent legal decisions confirmed that. No scheme of medical supervision could be of avail which did not recognise the powerful authority of the head teacher with his scholars and his influence with the parents; emphatically was that the case with infant schools, the head mistresses of which appeared to be in the position of guide, counsellor, friend, and confidante to those parents whose little ones were committed to their care. If at any time difficulty was experienced in the inception of any scheme perhaps it would be as well to hasten slowly and to make a beginning with the infant school, whose head mistress would be found to be "a power in the land"; then progress might be made through the lowermost standards, reaching last of all the girls of the highest standard. He made a point of that for the reason that he had found that a large proportion of the girls in the sixth and seventh standards were expected to look after themselves, the parents disclaiming responsibility. Further, the girls of those standards regarded the suggestion of medical examination as a slur, the actual inspection an indignity the memory of which would linger with them, "soon to be sent out into the world to earn their own livings." He might add that towards the end of the experiment the Gloucestershire branch of the National Union of Teachers held a meeting at which that method of medical inspection was discussed and approved of.

---

[1] THE LANCET, March 11th, p. 653, and August 19th, 1905, p. 542.

### *"The Personal Health Ticket in Schools."*

This was the title of a communication from Dr. S. BERNHEIM and Dr. LE DIEUPART of Paris, who had organised a distribution of circulars to medical inspectors of schools containing inquiries on the health of the scholars. They declared in common with the majority of their professional brethren that an inspection, even when strictly and carefully made, was not sufficient to protect the pupil, his schoolfellows, and teachers. It was indispensable that every person, whether child or adult, in habitual attendance at a school, a class, or a lycée should have a personal health ticket. This record would be quite confidential and would be accessible only to the visiting medical officer or to the relatives of the person concerned. If the child were removed from one school to another the ticket would be passed on to the medical officer of the latter school either by the family or by the first medical officer. That ticket would be of importance for a child by showing the state of his health and the capacity for work. In that way tasks incompatible with his health would not be required of him, as happened too often, and a system of education would be arranged for him consistent with the bodily and mental powers. In case of infectious disease or threatening tuberculosis the child would not be allowed to attend school so that he might recover and might not infect his schoolfellows. At a later period this personal health ticket would be equally useful to the adult, who would be able to present it when the time for military service arrived and might in that way be saved a great deal of trouble. That record would be for him an official and authenticated document. Dr. Bernheim and Dr. Dieupart had observed among the teachers a great many tuberculous persons who were a constant danger to the children among whom they worked. For them also the sanitary health ticket was indispensable. Finally, they thought that the sanitary inspection of schools would be more effectual, because the medical officers would for that purpose have to keep books which would require to be regularly brought up-to-date. The adoption of the proposed scheme would involve an immediate and thorough improvement in the sanitary inspection of schools.

A paper on

### *The Floor as the Principal Factor in Contagious Diseases in Schools.*

This subject was contributed by Dr. BERNHEIM. After insisting on the importance from a sanitary point of view of all parts of the structure of a school building Dr. Bernheim declared that hygienically the floor was the most important thing of all. In proportion as it was of homogeneous structure and easily cleaned and repaired, so was the health of the establishment good. The worse the condition of the floor of a class-room the more sickness there was among the pupils. Dr. Bernheim had examined the dust from well-worn floorings in old buildings and he had found in it many virulent bacteria. He strongly recommended certain floor materials, having a basis of asbestos, as cheap, durable, and easy of application.

### *The Medical Inspection of "Public Schools."*

Dr. CLEMENT DUKES (physician to Rugby School), dealing with "a record of the physical examination of 1000 boys at their entrance on public school life," said that it was somewhat depressing to register in the twentieth century the large number of acquired preventable deformities which were presented by the most favoured class of boys in Great Britain. (We are publishing Dr. Dukes's valuable paper in an early issue of THE LANCET.)

Dr. T. DYKE ACLAND (London) emphasised the need for the inspection of all residential secondary schools in matters relating to sanitation and hygiene. There was a tendency to limit the work of the school medical officer to the comparatively unsatisfactory work of attendance on the sick and to overlook that far more important branch of his work—preventive medicine—by which sickness might be prevented and the better development of the boys under his care secured. That public schools were in various ways behind the times seemed to be due in the first instance to their being practically free from competition. How many, he asked, of our public schools would pass the ordeal if inspected on the lines required for public elementary schools? All endowed schools, two only excepted, were liable to inspection; two or three had already voluntarily applied for inspection. It was to be hoped that the time was not far distant when all residential schools would be subject to independent criticism and report; and further, would be required to publish annually what might be called a "health audit."

In the course of the work of the Congress Dr. OEBRECKE (Breslau) urged that the school medical adviser should not be in private practice, but that his work should be that of supervising. He dwelt upon the desirability of coöperation between the medical man, the teacher, and the parent.

Dr. CUNTZ (Wiesbaden) maintained that the work of the school medical adviser should be to notify and prevent sickness or disease and to look after the hygiene of the school and class rooms, while the medical treatment of the children themselves should be left to the family practitioner.

### *The Attitude of Parliament.*

Mr. W. J. WILLIS BUND (chairman of the Worcestershire education committee) presented some practical administrative hints with regard to the medical inspection of school children provided for in the Bill now before Parliament. He said that ratepayers protested loudly against the appointment of new officers at high salaries, but if a staff insufficient in number and qualifications were appointed it would only bring about failure; a weak staff would make a complete inspection impossible; an inefficient staff would do far more harm than good, it would be far better to have no inspection at all. An efficient staff must be well paid with regard to the work to be done; a salary fixed on the scale of that now paid to district medical officers of health would not secure efficient inspectors.

Sir **James Crichton-Browne** (London) said that no teacher in these days could be regarded as thoroughly competent who was altogether ignorant of physiology or indifferent towards it, and so essential was a strict and scientific observance of its monitions, not only to sound and successful education but to national integrity, that the regular medical inspection of schools and school children, either as a state institution or under local organisation, had been established in France, Germany, Belgium, Austria, Norway, Switzerland, Russia, Servia, the United States, Japan, Egypt, the Argentine Republic, and Chili, and would, it was hoped, be adopted before long in this dilatory country.

### *The Health of the Teacher.*

A special section devoted to the study of the needs of the teacher was presided over by Dr. T. J. **Macnamara**, M.P., whose thoughtful opening address is commented upon in a leading article.

### *The Play of School Children.*

This subject was not neglected by the Congress and much interest was taken in a paper read by Mrs. **Bland-Sutton** on the work of the Children's Happy Evenings Association, which was the pioneer in the work of organised recreation. There were 136 branches in London and many affiliated branches in big towns in England. The association gathered together every week during the greater part of the year over 24,000 children, and in this work enlisted the services of over 1300 voluntary workers. Experience had convinced the association that this was a work in which the voluntary element must always reign supreme. Putting aside the cost to the ratepayer of an elaborate compulsory system of recreation estimated to cost £300,000 a year there was the objection that the work would become a mere matter of routine. In confirmation of this Mr. **Pett Ridge** said that the work of the Children's Happy Evenings Association was being carried on without costing the ratepayers a penny. During the last 18 years the association had taught the children of London that amusement was not necessarily confined to noisy quarrelling and they had encouraged cleanliness. He did not think that a combination of paid and voluntary workers would prove satisfactory in a large scheme. After Dr. **Gulick**, President of the Child Playground Association of New York, had said that the games of England were the final word to the rest of the world, Mr. **Cope Cornford** spoke in favour of the Children's Happy Evenings Association. He pointed out that the defect of the official system proposed was that it would take away the responsibility of parents in regard to the play of their children.

### *Should Children Attend School before the School Age?*

In the seventh section there was a crowded attendance on Wednesday morning to hear Dr. **Arthur Newsholme's** (Brighton) paper on the Limit of Age for School Attendance. Professor W. **Osler** was in the chair and many members showed great eagerness to speak; indeed, very warm feeling was manifested. Dr. Newsholme's object was to denounce the growing habit of sending children to the elementary schools before the school age, urging that no child should be admitted who was not five years old. In 1904–05 elementary education in England and Wales cost £18,398,616, or 72*s.* 10*d.* per scholar, and he estimated that of this sum £1,749,711 were spent on children who were only three to five years old. They overcrowded the schools, contracted and spread infectious diseases, and did not lead natural lives. The speaker quoted the result of tests made of the atmosphere in such schools and in the poor homes from where the little children came, showing that the school was worse than the home. There were, however, exceptional children, notably those whose mothers went out to work, for whom it was a benefit to be at school before the age of five years, but these scarcely amounted to more than 10 per cent. of the total attending school before the age of five years and for such cases crèches should be provided.

Dr. A. H. **Hogarth** (London) read a paper in the contrary sense. The age from three to five years was as important as any other period. The remedy to existing grievances was not the exclusion of children of that age but the improvement of the infant schools or class rooms. They must select teachers possessing special aptitudes for dealing with these very young children; the surrounding sanitation had to be improved and the curriculum better adapted to their age. Two objections to the presence of such young children might be made on medical grounds. First, that it produced an increase in measles. On the other hand, the school was a means of teaching the parents the importance of this malady and at school a better watch was kept for the after-effects which were the most dangerous aspect of this disease. If there were more cases of measles there was no evidence to show that there was an increase of mortality from measles resulting from early attendance at school. The cases cited to demonstrate that the air in schools was more unwholesome than in the homes were old and only proved the obvious fact that there was room for better sanitation. It had been said that before five years the children derived no educational advantages, but what did this mean? Dr. Hogarth did not think that such children should be taught to write and read but to play in such a manner as to help the development of their muscles. Our methods were faulty because they were repressive and kept children hours without laughter. The children must be taught to laugh, to shout, to scrub, to put things in order, and all kinds of manual efforts that interest and create exercise.

Mr. **Willis Bund** thought that no general rule would apply. There were such wide differences, notably between town and country schools. In one case it was the school, in another it was the home which was the most unhealthy. To propose to send these children to crèches was no solution because there were grants to schools and not to crèches; but crèche methods could be employed in schools. As for disease, a good service was rendered in getting early history of cases.

Mr. R. C. **Elmslie** (London) agreed with this latter point. Tuberculosis of the bones and joints was often noticed between the ages of four and six years and if treated thus early serious deformities could be prevented. The same might be said of rickets, some forms of paralysis, and so on. They had more to do than to educate: they had to detect and to prevent.

Dr. H. **Franklin Parsons** (London) pointed out that in many schools younger children accompanied their elder brothers; they were not entered on the school books but they occupied the school floor and helped to vitiate the air. He was in favour of keeping the children under the school age, not out of ideal schools, but out of the schools such as they exist. They were far better off in a fairly well-regulated home. They should be careful not to lower the fundamental instinct animating all warm-blooded animals, that of keeping the offspring by the mother during the earlier years of life. Nor was it generally the case that mothers sent these very young children to school because they had to work; as often as not it was merely because the absence of the children gave the mothers more time to gossip over the garden wall.

Mrs. **Kirk** rose to speak from the teacher's point of view. At first she thought children should remain at home till the age of five years, but she would be puzzled how to manage a school were it not for these very young children. She was able to train them and their example when they grew up kept the class of older children in order. It was not the poor that behaved so badly but all classes. Then these very little children from very poor homes were made to keep themselves clean and to take exercise, and the mothers were invited to the school in the evening and received much educational advice. The mothers' instinct was good but they were dreadfully ignorant. Then these little children were not kept in badly ventilated class-rooms but in play-yards and in the open air. They had many toys, were taught to build and to play, and as for measles the speaker found cases were much more frequent after than before the holidays.

Mr. **Mundella** said that for 50 years the schools had been open to these young children and he doubted if it would be legal to exclude them now. The expense had been exaggerated. The crèche or infant school should be under the same roof or close by the general school and under the same authority.

Dr. H. **Meredith Richards** explained that at Croydon they did not exclude children, but would not allow overcrowding. At a school in the slums the children under five years who attended belonged to the better class. What was needed was to exclude the children who went to school and compel the attendance of those who did not go.

Dr. R. H. **Crowley** (Bradford) was strongly for the principle that children should be at home. There was a danger that children were over-stimulated. It was a slur to our civilisation that there should be so many homes unfit for children to live in. But there were also many schools utterly unsuitable and much money would have to be expended in rebuilding them.

Miss ADLER, speaking as a school manager, said no one could see the homes she had seen and wish children to remain in them. There were but two or three rooms. There was no space for spontaneous development. The mother had to scrub, to mend, and to cook, and the children went out into the streets, where they acquired bad language, vices, and vagabond habits that made them dislike school, and which it was most difficult to correct. If, however, they went to school before the school age they acquired a liking for school and were easily trained.

Mr. PERCIVAL SHARPE thought both sides in the discussion were right; the difference was due to the starting point. The old-fashioned infant schools with the "baby galleries" were an abomination, but children would be better at a model school than at home. Economic conditions were changing; we could not consider the extra expense but only the extra advantages.

Dr. CUNTZ expressed his great surprise at the whole discussion. In Germany the law was emphatic. No child could be admitted at school before the age of six years, and if at all delicate he might remain at home till the age of seven. But then there were no such awful homes in Germany as had just been described by the previous speakers. Widow mothers and others in poor circumstances were widely supported; there was no such degrading distress as seemed to prevail in England.

Mr. H. B. BRACKENBURY (Hornsey) said that in his district there was no dense mass of poverty and they did not admit children in the school under the age of five years. This helped to postpone measles till that age, which greatly reduced the danger of that disease.

Miss K. PHILLIPS urged that out of the 490 provided schools of London many were conducted on the lines described by Mrs. Kirk, but in Sussex she had seen a school with a gallery for 60 children and only a young girl to watch them for five hours. In bad homes children could sprawl, if it was only in the gutter, and sleep.

Lady O'HAGAN insisted on the great difference between infant and ordinary schools. No general rule was possible. There must be variety. When the "knocker up" came at four or five in the morning the breakfast the mother provided at that hour was a horrid affair, and when she came home she was often too tired to give more than bread-and-butter for dinner. Certainly the children of such a home were better off in a well-appointed infant school.

Dr. CRONIN (New York) explained that the law had been amended within the last three years and no child under the age of six years was admitted in the schools. He had then to prove his age, and this law had helped to secure a more punctual registration of births. If this congress would decide that infant schools were a necessity he felt sure New York would not hesitate to give the children "the proper kind of mud." As they had got to grow they might as well grow scientifically instead of allowing children three years old to rule their mothers.

Mr. ABEL (Nottingham) thought that children should remain at home till the school age; but the higher they rose in the animal scale the less instinct ruled and the more was the organised State called upon to fulfil the part of the mother.

Dr. NEWSHOLME now replied, pointing out the inconsistencies of his critics. Thus they had been told that infant schools were to be recommended as good sleeping places; others said that the infants learnt no bad language. In that case they should remain there all day. Others said that it was the best way to discover early disease, or to avoid being run over, or to teach children how to play. But they all knew how to play and only needed the opportunity. The question was whether the actual school was better than home and not the ideal school sketched by Dr. Hogarth. Ventilation had not been improved. The real point was whether they were to encourage the employment of women. He thought not. They should mind the children.

### *The Closure of Schools or the Exclusion of Patients.*

The members of Section II. had attended the above debate as well as the members of Section VII. and there were times when the vast theatre only afforded standing room, but the moment the discussion closed there was a rush for the doors. Other papers were read subsequently, but there was not such a good attendance. Among the various authors may be mentioned Dr. WILLIAM BUTLER (Willesden) who spoke on the influence of school attendance on the spread of non-notifiable diseases; and Dr. J. R. KAYE (Wakefield) who communicated a paper entitled "Closure *v.* Exclusion in Relation to School Diseases." The experience the speaker had acquired as medical officer of the West Riding of the Yorkshire county council led him to the conclusion that in the case of infectious diseases individual children or perhaps a whole class should be excluded. This generally sufficed and there was no need to interfere with the progress of education by closing the entire school. But in actual practice it was financially more advantageous to close the entire school than to exclude a few pupils. If some pupils were excluded this lowered the average attendance at the school and the grant to the school was reduced in proportion. If, on the other hand, the school was completely closed then due allowance was made and there was no loss. Dr. Kaye thought that a means should be devised to prevent a loss resulting from the taking of proper precautions.

On the Thursday morning Dr. C. J. THOMAS, assistant medical officer of the London County Council Educational Department, presented a paper well charged with statistics on measles. At Woolwich systematic investigations had been made in respect to 5512 children and it was found that of the children entering the infant schools at the age of three years no less than 54 per cent. had already suffered from measles. When they left at the age of six years, then 84 per cent. had contracted this disease. After the first case there was generally quite a number of cases some nine to 11 days later. Woolwich also was divided in half; on one side the policy of school closure was carried out rigorously, while in the other half only the patients were excluded. This experiment demonstrated that the most drastic school closure made no difference whatsoever in the number of cases. The only means of hindering the spread of measles was the building of more sanitary, better ventilated, and larger schools, and the employment for the sick of properly trained nurses who would know how to minimise the danger of infection. A very lengthy discussion followed this paper and Dr. SIDNEY DAVIES, medical officer of health of Woolwich, in a carefully prepared paper, fully confirmed the above views.

### *Tuberculosis and Schools.*

In this section Dr. W. OLDRIGHT, professor of hygiene at the University of Toronto, read a paper on the Schoolroom as a Factor in the Production of Tuberculosis. According to the Ontario statistics women teachers were especially susceptible and the same was noted in the United States. The fact was that in rooms where there were many persons together each person required 3000 cubic feet of air; and as in practice the air could not be changed more often than about three times in an hour every person should have 1000 cubic feet of space. Nothing of the sort existed and there was not only a lack of air but chalk dust and all kinds of irritating particles were present in the vitiated air. In some cases the mortality among women teachers from tuberculosis was as high as in the most dangerous trades, such as those of printers and stone-cutters.

Dr. LOUIS GOURICHON, formerly President of the Society of Medical School Inspectors of Paris, presented a paper written in quite a different strain, in which he stated that tuberculosis was relatively a rare occurrence among the male and female teachers of the Paris elementary schools, and when there was a case it was generally contracted outside the school. This disease could not be considered as a professional malady so far as teachers were considered.

But, again, and in contradiction to the above, Dr. C. C. JESSEN, physician to the public schools and president of the Society of Physicians of Copenhagen, presented a paper in which he said that the mortality from tuberculosis among the Danish teachers who were insured was twice as high as among the insured of the general population. He therefore urged that no teacher should be appointed unless he could present a medical certificate to show that he was free from tubercle of the lungs and larynx. On the other hand, all teachers dismissed for tuberculous disease should receive a pension equal to at least two-thirds of their salary.

### *Ringworm in Schools.*

There were also many papers on skin diseases and ringworm. Dr. P. S. ABRAHAM thought the present methods of prevention in the metropolitan elementary schools absolutely inadequate. He presented a formidable array of statistics on the actual prevalence of ringworm in the West of London schools. He argued that as the law forced children to attend these schools the State should see that they were properly treated for the diseases they contracted while at school. As a first step in this direction every child at school should be thoroughly and periodically examined by a competent medical man.

On this question Dr. Meredith Richards read a paper in which he explained that at Croydon cases of ringworm when excluded from school might either be treated privately or else gratuitously by the local authority. At the municipal dispensary sometimes drugs and sometimes x rays were employed. In the latter case the average duration of the treatment did not extend over eight weeks, whereas with drugs the time required was much longer. As there might be a relapse all cases should be carefully watched for three weeks after recovery.

Dr. Harry G. Critchley (of the educational medical staff, likewise of Croydon) contributed a paper showing that a tenth of the absences from the London schools were caused by ringworm and Croydon lost £300 a year in education grants in consequence of ringworm. The microsporon Audouini he did not think was amenable to treatment, but the larger spore, the trichophyton megalosporon, could be rapidly and safely cured by the use of x rays. This had caused a great reduction in the number of pupils at one of the two ringworm schools of the Metropolitan Asylums Board which was formerly always full.

Dr. V. Hüttel, school physician of the City of Prague, communicated a paper summarising

*The Various Perils Besetting School Children,*

not omitting spinal curvature and nerve diseases due to overwork. All this clearly showed that to each school a physician must be appointed as the guardian of the pupils' health. This medical adviser must have not only the duty to advise but the power to see that his advice was followed. Dr. Hüttel may be said to have summarised the upshot of all the discussions held in Section VII. Thorough medical inspection of all school children, this preferably under the national health authority—namely, the Minister of Public Health or the nearest approach to such a Ministry as exists—was evidently the chief remedy for existing evils which the section was able to suggest.

The last day of the Congress was devoted to pleasure excursions and many members travelled to Cambridge, others to Haslemere, to Hindhead, and to Brighton. A popular excursion was the visit arranged to Windsor Castle and Eton College and the trip organised to Oxford found many adherents.

# THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS: COMMITTEE MEETING AT LONDON.

(From our Special Commissioner.)

*(Concluded from p. 404.)*

At the conclusion of the morning sitting of the first day the committee was entertained at lunch at his house by Mr. J. Bland-Sutton who entertained his guests in his marvellous reproduction of the Persian hall built by Artaxerxes Mnemon. Here they were met by other members of the British Association of the Medical Press, notably the President, Mr. Thomas Wakley, and Dr. H. P. Cholmeley of The Lancet, Mr. H. W. Armit of the *British Medical Journal*, and Mr. L. E. Creasy of the *Clinical Journal*, and honorary secretary of the association. Being a fluent speaker in French, which is the official language of the association, Mr. Adolphe Smith was appointed to speak on behalf of the British branch, and in the circumstances felt bound to give some explanation concerning the hall in which they were assembled. He pointed out that the inscription on the wall showed that the original hall, which Mr. Bland-Sutton's archæological knowledge has enabled him to reconstruct, was placed under the protection of Ormuzd, Anahita, and Mithra—that is to say, the good forces in nature, the feminine forces in nature, and the solar god or male fertilising force, and he explained the symbolic meaning of the designs and decoration with which everything was in harmony, from the esoteric meaning of the jewels which Mrs. Bland-Sutton was wearing to the flowers that decorated the table and the character of the menu.

Professor Posner of Berlin and Dr. Blondel supported the toast proposed in honour of Mr. and Mrs. Bland-Sutton. The builder of the palace, so beautifully reproduced, was called Artaxerxes Mnemon, said Professor Posner, and Mnemon was an additional name given to him on account of his retentive memory, but it would need no exceptional gift of memory for all the guests to recall the present scene.

Dr. Doléris, who spoke subsequently, also insisted on the charm of the reception and was especially grateful for being admitted into the intimacy of a British home.

In responding, Mr. Bland-Sutton expressed his gratification to find that not only the artistic beauty but the symbolic meaning of the Persian hall which he had reconstructed were so fully understood and appreciated.

When the banquet had terminated the members of the committee went upstairs to the drawing-room and there resumed their labours. The grievances and the difficulties described in the reports made at the morning sitting were now discussed with the object of finding a remedy.

Dr. Doléris lamented the fact that the medical press could not hope to obtain any help from French manufacturers; they would not betray medical men who had offered to render them services, yet the situation was absolutely intolerable. The articles that were written for manufacturers and paid for by them were so skilfully worded that they deceived medical men themselves. Such deception was most injurious to the public and to the profession, but how was it to be prevented?

Dr. Déjace (Belgium) said that the prophylactic action taken by the German Association of the Medical Press showed the use of such societies as theirs. Here was an inspiring spectacle of the honest manufacturer and the honest journal seeking to help each other. In Belgium they would certainly endeavour to profit by the work and example of the Germans. But then, of course, it must be recognised that in Germany the customs and the laws were very different. For instance, in Germany the police bought drugs, analysed them, and not only published the result but stated what it cost to make the drug. This was done to prevent the public being deceived either as to the nature of the article or of the price at which it ought to be sold.

Professor Posner pointed out that a journalist in his own country would probably be able to distinguish between a legitimate criticism or notice and a "puff"; but abroad this could not be done so readily. For instance, a German journalist reading a French article written about some French product would be more easily deceived. Therefore the English and the French should not harbour what had been rejected in Germany. The Germans, on their side, would pay full attention to warnings sent them by the other nations that formed part of the International Association of the Medical Press. It often happened in Germany that a manufacturer would advertise in a medical journal and at the same time would send an article praising the articles advertised. As a rule, the journal would refuse to publish such as article, but this might not prevent the manufacturer from advertising. Later the manufacturer would send another article in which the most guarded mention is made of his products, and as the article would be thoroughly scientific and in reality very ably written it might get published, but the writer was paid by the manufacturer. This ought not to be allowed.

Dr. Blondel explained how this sort of thing was sometimes managed in France. A medical man might be engaged in research and was doing good work. He might be approached by a manufacturer who would ask him for his genuine opinion. To give such an opinion experiments were necessary, guinea-pigs and various things would be needed, and, of course, it was only fair that the manufacturer should reimburse such out-of-pocket expenses. This he did not fail to do and on the most lavish scale. As the drug or whatever it might be is in those cases really good, an excellent report was likely to result from such experiments. This was not an easy situation to deal with as it is so very difficult to draw the line between what was legitimate or otherwise. Then there was the great question of the entire article and the synopsis of the article. The article was often an obvious puff but a summary of the article sent round to the press might lead people to think that it was nothing of the sort. He thought that the journals belonging to the association should only quote the German articles that appeared in the journals of the German Association of the Medical Press, for they at least did exercise a veritable control. This was the beginning of a really serious action, and if it continued successfully the International Association of the Medical Press would soon become a great power for good.

A lengthy conversation followed as to what could be done that would not be illegal. A black list in Belgium would probably be considered illegal and in all countries it is difficult to point out that a person is not pursuing an honourable course without incurring the risk of an action for libel. Also, as the French delegates pointed out, there was no unanimity as to what was honourable or not. There were men working for months and years at scientific research for which they received no pay whatsoever. Might they not occasionally endeavour to make ends meet by undertaking scientific experiments for some manufacturers? It might be said they were special pleaders and made the best of the case. If that was so, what was the difference between them and a barrister who pleaded to the best of his ability for a prisoner whom he nevertheless believed to be guilty? All these were very difficult, delicate matters on which it was not possible to dogmatise. But the Germans had succeeded in putting their hands on something tangible. For medical men to go round from manufacturer to manufacturer offering to so "cook" the record of their cases that it would serve to advertise some drug was obviously infamous, and this not merely in the professional sense of the term. Such flagrant cases must be stopped and stopped internationally. There was some difficulty in framing a proposition to express this determination, but, finally, the committee agreed on the following text, which was unanimously adopted:—

> The International Association of the Medical Press, taking into consideration the aticles written by medical men in favour of medicinal products, urges the national associations to exchange with one another information on the character of these articles and of their authors.

The next question discussed related to the necessity of refusing to publish certain sorts of advertisements. But if one paper, actuated by high conscientious motives, refused to publish an advertisement the good object held in view would not be attained if the other papers did not also refuse to insert the advertisement. Here, as in almost all these questions, it was necessary to act in concert. Fortunately, in Germany some 50 periodical publications had been brought into line and it sufficed for one of these papers to refuse an advertisement and all the others would also refuse the advertisement. But now the Germans were anxious to extend this action beyond the frontiers. They desired to know what were the sort of advertisements that were condemned in England or France and they would see that none of them appeared in German papers. On the other hand, they asked the English and French papers not to open their advertisement columns to what in Germany they considered to be unworthy of their profession and of science. As a result of this discussion the following motion was adopted:—

> The International Association of the Medical Press urges all the National Associations of the Medical Press to come to an agreement in regard to the medical advertisements that should be refused.

This terminated the discussion and the resolutions arising out of the German report.

In regard to the French report Dr. DOLÉRIS said that nothing short of a complete revolution would mend matters in France. Fortunately, they have now something to go upon; they could quote the German example. But he inquired how the Germans managed to keep dishonourable members out of their association.

Professor POSNER explained that in Germany there was an executive committee of five which decides, but it was always a difficult and delicate matter to reject a member. He thought that no new member or journal should be admitted without a proposer and seconder who would be prepared to answer all questions put.

Dr. DOLÉRIS said that something of the sort used to be done in France, but now there was a great deal of canvassing and there would be a large meeting and a large vote, but a big society or assembly could not possibly and discreetly investigate very delicate matters touching the honour of the candidate.

The French delegation did not present any resolution. As for the British delegates, they only intervened in the discussion to explain how matters stood in England and in several instances were able to state that some portion of what was desired had already been realised in this country.

In the evening the committee, together with some friends, were entertained to dinner by Mr. and Mrs. W. Arbuthnot Lane at their residence in Cavendish-square. When the time for the toasts was reached Mr. ADOLPHE SMITH was again the spokesman for the British contingent and he expressed his confident belief that all who had helped the present meeting had helped a great cause. Their host, Mr. Arbuthnot Lane, had decorated his table with three colours. The flowers on the table were all red; this was the colour of life and energy. But they hung in garlands over green moss and green was the colour of hope. All else was white and white was the colour of purity. In thus meeting together they hoped to acquire the energy to purify the press. French, German, and Belgian delegates followed with well-chosen words expressing their gratitude to their English hosts for their hospitality and for the true friendship and kindness with which they had been received.

On the morning of August 4th the committee met again in the Persian hall of Mr. Bland-Sutton's house. The question of congresses was now discussed. Professor POSNER gave assurances in regard to the Fourteenth International Congress of Hygiene and Demography which is to meet in Berlin at the end of September in the building of the German Reichstag. The Bureau of the Press was at the disposal of members of the International Association of the Medical Press, with its 68 seats, electric light, and every convenience. Free press cards would be given granting every privilege, but only to members of the International Association of the Medical Press. Representatives of other journals which were not affiliated would receive ordinary press cards which would only admit them to the meetings and discussions. This was an opportunity of making the medical press throughout the world understand that an international association was in existence and that it was a decided advantage to belong to this organisation. Professor Posner thought the Congress of Hygiene would be a great success, particularly as the more important journals of Berlin had been asked to send representatives to the organising committee.

In regard to the next meeting of the committee of the International Association of the Medical Press, Professor POSNER invited the committee to meet next year at Berlin when convenient, but probably shortly after Whitsuntide and when the holiday rush was over. They would then have to prepare for the Budapest Congress and for the general assembly of the International Association of the Medical Press, which must be held immediately before the Sixteenth Medical Congress in 1909.

A long discussion now ensued as to whether, as the medical press was now a permanent international organisation, it could do anything to modify the present chaotic condition of affairs in regard to international scientific and more especially medical congresses. Undoubtedly a permanent international bureau should be created to regulate and to prevent the clashing of congresses and to limit their number. The Medical Congress came to an end each time. The president and secretaries of the next congress had to begin all over again. They could not, and did not, profit by experience acquired at previous congresses and the repetition of blunders was only varied by the idiosyncrasies of the different countries where they met. At Lisbon the Portuguese seemed to resent outside interference and it was feared that if there was a permanent international secretary he would acquire too much power. They might, however, have an elected international committee that would negotiate with the secretary of the next congress. Some organisation must be formed. At present everyone who chose started a congress just when and where it might suit his fancy. There must be a central bureau to prevent the confusion this caused. Small countries were special transgressors in this respect, for they knew but little of the history of previous congresses.

Sir FELIX SEMON spoke at length on this subject and gave an amusing account of the adventures of the section of Laryngology. Thus in 1891 it was treated as a separate section but as some officer concerned was not popular it was converted into a subsection of medicine so as to prevent personal dispute. At Copenhagen, as there was no local laryngologists of sufficient repute to preside, the section was merged into another section. At Washington, in 1897, the president was deposed because he consulted with a homœopath and the section was merged into another section. At Berlin the section was a great success. At Rome it was united with the otologists, though both parties objected. At Moscow they were made into a subsection and united with the dentists. At Paris they were again put with the otologists. All the laryngological societies had passed resolutions against such treatment and this time they were allowed to separate at the eleventh hour and form two sections. As a result their meetings proved a great success. But when they appealed that the same course should be pursued at Madrid the Spanish took absolutely no notice of their communications, so nobody went to the congress. At Lisbon they were told they must work with the dentists, and therefore they again abstained from attending. Thus, since the Paris congress of 1900 they had not met at all. They did not want to separate from the medical congress but they had been forced to do so, and there was to be a special congress of laryngology at Vienna next year. As they also proposed to attend the general Congress of Medicine at Budapest, after failing to meet for eight years, they would have two congresses in two years. If they were treated thus by their medical colleagues how could they ask governments for any sort of favour, such as the creation of a chair of laryngology? Then many blunders were made by local committees in nominating honorary presidents. The experience acquired at one congress must be utilised at the next congress; there must be continuity.

Dr. BLONDEL agreed and related that the dentists had encountered similar difficulties and there were terrible disputes as to whether a dentist could be a dentist unless he was also a medical practitioner. He did not think one nation was competent to select presidents of honour from among the distinguished men of another nation.

Professor POSNER said he had been asked to nominate three foreign presidents.

Dr. DEJACE said that in Belgium the Government made such nominations and they would appoint a medical man not because he had any special experience in the question at issue but because he was a Senator.

Dr. DOLÉRIS remarked that there was no section of laryngology at Madrid because there were no distinguished laryngologists in Spain. The same reason applied to Lisbon but it did not apply to Paris, Berlin, or Vienna.

Mr. ADOLPHE SMITH urged that the management of a congress should be intrusted to those who had experience of congresses and were good organisers and not to a person merely because he held a high position or was distinguished in some branch of science. Such eminent men were likely to be too busy to attend to the drudgery and routine details of a congress.

Dr. DAWSON WILLIAMS pointed out that for the much easier and simple purpose of the annual meetings of the British Medical Association they had found it necessary to institute a Court of Appeal. The proposals coming from the locality where the meeting would be held were generally accepted. Still, it was sometimes necessary to correct them. Finally, the committee adopted the following motion:—

> The International Association of the Medical Press considers that it is necessary to establish a continuity between the international congresses and expresses the desire that a permanent bureau be created. This bureau should consist of the presidents and general secretaries of the national committees of the former congresses and the bureau of the forthcoming congress, together with the general secretaries of the former congresses of medicine and the general secretary and the president of the International Association of the Medical Press.

The committee now took the Budapest Congress into consideration. Mr. ADOLPHE SMITH related that when the Congress of Hygiene met there nothing whatsoever was done for the press. Fortunately he found an energetic French colleague and together they prepared a general strike of the press and this brought the congress to its senses and the necessary facilities were finally obtained. So it might be well to take time by the forelock. Speaking also from personal experience Dr. BLONDEL confirmed this opinion and proceeded to enumerate all that was needed. The various items mentioned were approved, as also that the general assembly of the press association should meet at Budapest in 1909.

After a few words about the right of reprinting articles Dr. DAWSON WILLIAMS moved the following proposition, which was adopted unanimously:—

> The committee of the International Association of the Medical Press, taking into consideration the question of the rights of authors, is of opinion that the author of an article published in a medical journal has not the right to authorise commercial firms to reproduce his article without having previously obtained the sanction of the editor or publisher.

A few more observations were made as to the regulation of controversies in journals and this concluded the business.

The committee now rose and proceeded to Oddenino's Imperial Restaurant in Regent-street, where they were entertained to a farewell luncheon by Mr. Thomas Wakley, President of the British Association of the Medical Press. After luncheon Professor POSNER proposed the health of Mr. Wakley. He had often, he said, longed to see England, but somewhat dreaded the journey. However, having taken that step, he was now gratified with the rare sight of an English blue sky. Abroad, if they had not been taught to admire the English climate they had long ago learnt to admire the authority and influence which THE LANCET had acquired. He begged Mr. Wakley to believe they were all very grateful to the President of the British section and would be pleased to explain in other lands the high position to which the British medical press had attained. Their association was as yet in its infancy, but those who had helped in its rearing would in the future have good reason to be proud of their work. Dr. BLONDEL spoke in grateful terms of his long relations with THE LANCET and its Editor and the toast was drunk heartily. Mr. WAKLEY replied, expressing his gratification at being able to help forward so good a cause and his pleasure at welcoming the representatives of the press of different nations.

Dr. DAWSON WILLIAMS now proposed the "Health of the President of the International Association of the Medical Press, Professor Posner." He praised the business-like manner in which Professor Posner had conducted the business and thought more solid work had been done at this London meeting than on any previous occasion. They had dealt with very difficult ethical questions and yet had passed resolutions which were likely to meet with the approval of the medical profession in all countries. The toast was seconded by Sir FELIX SEMON. In responding Professor POSNER proposed "The General Secretary," Dr. Blondel, who had been the soul of the society. Dr. DÉJACE, for Belgium, and Dr. DOLÉRIS, for France, proposed the health of the Honorary Secretary of the British Association of the Medical Press, Mr. L. Eliot Creasy, who had organised in so complete and pleasant a manner all the details of the reception of the committee in London.

This concluded the series of toasts and the congratulations which were the natural outcome of the two days' useful work carefully done and successfully accomplished. The members of the committee now parted company, some to return to their own country, others to attend the International Congress on School Hygiene.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7229 births and 3637 deaths were registered during the week ending August 10th. The annual rate of mortality, which had been 12·4, 11·9, and 11·7 per 1000 in the three preceding weeks, was 11·8 in the week under notice. During the first six weeks of the current quarter the death-rate in these towns has averaged 12·1 per 1000, the rate in London during the same period being 11·9 per 1000. The lowest death-rates in the 76 towns last week were 3·8 in Willesden, 5·0 in Walthamstow, 5·2 in Hornsey, and 5·5 in King's Norton; the highest rates were 17·4 in Blackburn, 17·7 in Sunderland, 17·8 in in Rochdale, 18·6 in St. Helens, and 21·7 in Stockton-on-Tees. The 3637 deaths in the 76 towns last week included 378 which were referred to the principal epidemic diseases, against 397, 396, and 362 in the three preceding weeks; of these, 104 resulted from diarrhœa, 94 from measles, 85 from whooping-cough, 40 from scarlet fever, 40 from diphtheria, and 15 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Bristol, Brighton, Plymouth, South Shields, or in 12 other of the 76 towns; the annual rate from these diseases, however, ranged upwards to 2·7 in Walsall, in Blackburn, and in Merthyr Tydfil, 2·9 in Wigan, 3·9 in Stockton-on-Tees and in Cardiff, and 5·1 in St. Helens. The fatal cases of diarrhœa, which had risen from 39 to 78 in the four preceding weeks, further increased to 104 last week, and caused death-rates ranging upwards to 1·3 in Coventry, 1·5 in Warrington, 1·6 in Bootle, 1·7 in St. Helens, and 2·4 in Smethwick. The deaths from measles, which had been 113 in each of the two preceding weeks, declined to 94 in the week under notice; the highest death-rates from these diseases were 1·1 in St. Helens, 1·9 in Blackburn, 2·2 in Walsall, 2·5 in Cardiff, and 3·0 in Stockton-on-Tees. The fatal cases of whooping-cough, which had been 123 and 86 in the two preceding weeks, were 85 in the week under notice; the death-rates from this disease ranged upwards to 1·1 in Cardiff, 1·2 in Wigan, and 2·3 in St. Helens. The mortality both from scarlet fever and from diphtheria slightly exceeded that recorded in other recent weeks; the former disease caused a death-rate of 1·5 in West Bromwich and the latter of 1·5 in Middlesbrough and 1·7 in Rotherham. "Fever" was not excessively fatal in any of the large towns last week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital at the end of last week was 3660, against numbers that had increased from 3658 to 3626 in the 13 preceding weeks; 466 new cases were admitted during the week, against 569, 557, and 419 in the three preceding weeks. One case of small-pox was admitted and remained under treatment at the end of the week, being the first case since the middle of May last. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 126, 136, and 137 in the three preceding weeks, further rose last week to 139, and were 17 in excess of the corrected average number in the corresponding week of the five years 1902–06. The causes of 33, or 0·9 per cent., of the deaths in the 76 towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, Nottingham, and 51 other of the 76 towns; the largest proportions of uncertified deaths were registered in Liverpool, Birmingham, Sheffield, Bradford, Sunderland and Preston.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·9, 13·6, and 12·8 per 1000 in the three preceding weeks, rose again to 13·8 during the week ending August 10th, and was 2·0 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·8 in Paisley and 10·6 in Leith, to 15·4 in Dundee and 16·1 in Greenock. The 479 deaths in these towns showed an increase of 34 over the number in the previous week, and included 75 which were referred to the principal epidemic diseases, against 63, 66, and 60 in the three preceding weeks. These 75 deaths were equal to an annual rate of 2·2 per 1000, which exceeded by 1·0 per 1000 the mean rate during the same period from the principal epidemic diseases in the 76 large English towns; they included 30 which resulted from whooping-cough, 22 from diarrhœa, 13 from "fever," six from measles, two from scarlet fever, and two from diphtheria, but not any from small-pox. The fatal cases of whooping-cough, which had been 30 and 12 in the two preceding weeks, rose again last week to 30, of which 15 occurred in Glasgow, six in Edinburgh, four in Dundee, and three in Leith. The deaths from diarrhœa, which had been ten and 21 in the two preceding weeks, further rose to 22 last week, and included ten in Glasgow, seven in Dundee, and two in Leith. The deaths referred to different forms of "fever," which had been 15 in each of the two previous weeks, declined to 13 last week, and included four cases of cerebro-spinal meningitis in Glasgow, two in Edinburgh, two in Leith, one in Greenock, and one in Perth. The six fatal cases of measles corresponded with the number in the preceding week, and included four in Glasgow and two in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 63 and 68 in the two previous weeks, declined again to 55 last week, and were 13 below the number in the corresponding period of last year. The causes of five, or 1·0 per cent., of the deaths registered in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified deaths was 0·9 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 21·5, 21·2, and 18·0 per 1000 in the three preceding weeks, further declined to 15·7 per 1000 in the week ending August 10th. During the first six weeks of the current quarter the death-rate in Dublin has averaged 19·3 per 1000, the rate in London during the same period being 11·9 per 1000, and in Edinburgh 12·2. The 118 deaths of Dublin residents registered during the week under notice were 17 fewer than the number in the preceding week, and included 13 which were referred to the principal epidemic diseases, against 12 and 15 in the two preceding weeks; of these, five resulted from measles, five from diarrhœa, and one each from diphtheria, from whooping-cough, and from "fever," but not any from small-pox, or from scarlet fever. These 13 deaths were equal to an annual rate of 1·7 per 1000, the death-rate last week from the principal epidemic diseases being 1·2 in London and 1·4 in Edinburgh. The deaths from measles, which had been three and six in the two preceding weeks, declined again last week to five; while the fatal cases of diarrhœa increased to five last week, having been four and three in the two preceding weeks. The 118 deaths from all causes in Dublin last week included 31 of children under one year of age and 27 of persons aged upwards of 60 years; the latter corresponded with the number in the preceding week, but the deaths of infants showed a marked increase. Three inquest cases and two deaths from violence were registered; and 42, or 35·6 per cent., of the deaths occurred in public institutions. The causes of eight, or 6·8 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths in London did not exceed 0·2, while in Edinburgh the proportion was 2·2 per cent. The 104 deaths in Belfast included three which were attributed to cerebro-spinal fever.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: E. A. Penfold to the *Hindustan*, on recommissioning; G. Hewlett to the *Prince George*, on recommissioning; E. B. Townsend to the *Terrible*. Staff Surgeon: M. Cameron to the *Hindustan*, on recommissioning. Surgeon: A. J. Hewitt to the *Prince George*, on recommissioning.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant J. R. Forrest has been appointed Sanitary Officer, 3rd (Lahore) Division, as a temporary measure. Lieutenant C. M. Drew has joined at Tidworth. Major C. E. P. Fowler, Captain H. O. B. Browne-Mason, Captain A. L. A. Webb, Captain F. M. Parry, Captain A. D. Jameson, Captain H. B. Fawcus, and Captain H. R. Bateman have joined the London District. Lieutenant-Colonel J. R. Dodd has been appointed to the medical charge of the Royal Infirmary at Dublin.

The undermentioned Lieutenants to be Captains (dated July 30th, 1907): Godfrey F. Rugg, Douglas S. B. Thomson, John Fairbairn, Leonard Bousfield, Robert G. Anderson, James H. Douglass, Robert R. Lewis, Alexander L. Otway, Charles H. Turner, Frank H. Noke, Eugene C. Whitehead, Walter F. H. Vaughan, Richard B. Hole, Travis C. Lucas, George E. Cathcart, William Wiley, Howard Harding, John A. Turnbull, Montagu F. Grant, David P. Johnstone, Edward H. M. Moore, Michael D. Ahern, Frederick J. Garland, Alban A. Meaden, Robert J. Cahill, Sidney C. Bowle, Harry B. Connell, George S. C. Hayes.

The undermentioned to be Lieutenants on probation (dated July 29th, 1907): Thomas McCann Phillips, Harold Stewart Dickson, George Forbes Dawson, Harry Vivian Byatt Byatt, Ronald Ernest Todd, Thomas Fletcher Lumb, Harold Gibson, Charles Paget O'Brien Butler, Gerard Petit, John Berehmans Hanafin, John Allister Renshaw, Richard Frederick O'Toole Dickinson, William Roche O'Farrell, Ralph De Veil King, Dalziel Buchanan McGrigor, Cecil Allen Taylor Conyngham, John Ross Lloyd, William Charles Carson, Richard George Stanhope Gregg, Harold Thomsett Treves, Francis Thomas Dowling, James Clarence Ledeatt Hingston, Forbes Jackson Stuart, Benjamin Alexander Odlum, William Arthur Spong, James Forgan Grant, Henry Percival Hart, Arthur Edward Booth Jones, and Alexander Hendry.

Lieutenants Ronald E. Todd and James C. L. Hingston are seconded under the provisions of Article 349, Royal Warrant for Pay and Promotion, 1906 (dated, July 29th, 1907).

### VOLUNTEER CORPS.

*Royal Garrison Artillery* (*Volunteers*): 1st Cinque Ports: Surgeon-Lieutenant E. A. White, resigns his commission (dated, July 4th, 1907).

### VITAL STATISTICS OF THE FRENCH NAVY.

The last vital statistics issued in respect of the French Navy are interesting. Average strength (officers and men) at home, 36,669; abroad, 9393; total, 46,062. Sick-rate, at home, 1012; abroad, 1396 per 1000 of strength. These rates, which include slight cases (*malades à la chambre*), are much lower than the corresponding rates in the land army. In both forces the chief causes of inefficiency are acute bronchitis, sore throat, influenza, gastric derangements, and rheumatism, but lesions due to accident are proportionally more frequent among the sailors. Death-rate, at home, 6·44; abroad, 5·11 per 1000 of strength. At first sight it would seem as if the mortality on foreign service were lower than on home service, but in reality this is not so. Invalids from abroad are sent to depôts in France, thus greatly augmenting the deaths reported from the latter. In 1903 the depôt death-rate was over 14 per 1000. Since 1899, when statistics were first published by the French naval authorities, the annual death-rate has been as follows: 1899, 6·61; 1900, 11·04; 1901, 6·80; 1902, 7·30; and 1903, 6·17. The year under consideration consequently compares favourably with the four that preceded it. The invaliding-rate for 1903 was 28 per 1000 of strength, but out of a total of 1307 men who were placed in retirement on account of ill-health no fewer than 604 were rejected immediately on joining, chiefly on account of eye affections, hernia, and tuberculosis. The remainder of the invalids, who had all served at home or abroad for longer or shorter periods, suffered for the most part from tuberculosis. For the foregoing information we are indebted to an article by Dr. J. Alvernhe in the *Archives de Médecine et de Pharmacie Militaires* for June.

### SPECIAL PAY FOR MEDICAL OFFICERS IN INDIA.

The Government of India has announced its intention of granting special pay to officers of the Royal Army Medical Corps and of the Indian Medical Service. The allowance will be payable to officers below the rank of Lieutenant-Colonel for special sanitary, surgical, or medical work done for the State which it is not in the power of an ordinary medical officer to perform with the same efficiency as the specialist. It will not be a personal allowance but will be granted only to incumbents of certain specified appointments. There will be 105 specialist appointments in India, each carrying pay at the rate of Rs.60 a month. Of these, 55 will be allotted to the Royal Army Medical Corps and 50 to the Indian Medical Service in military employment. The special subjects are as follows: (*a*) prevention of disease (including parasitology, bacteriology, and preventive inoculation), 40 appointments; (*b*) dermatology (including the prophylaxis, treatment of, and instructional measures in connexion with venereal diseases), 10 appointments; (*c*) advanced operative surgery, 20 appointments; (*d*) ophthalmology, 10 appointments; (*e*) electrical science (including skiagraphy), 10 appointments; (*f*) mental science, 2 appointments; (*g*) otology, laryngology, and rhinology, 3 appointments; and (*h*) midwifery and diseases of women and children, 10 appointments.

# Correspondence.

"Audi alteram partem."

## SOME REMARKS ON PLAGUE.

*To the Editors of* THE LANCET.

SIRS,—To those interested in plague work let me commend the Croonian Lectures delivered by Professor W. J. R Simpson and just concluded in THE LANCET of July 27th. Professor Simpson's remarks will be subject-matter for much thought to those in whose hands lies the hygienic administration of India. The whole problem of scientific work in India, so far as the medical aspect of it is concerned, is an excellent example of what Professor Ronald Ross calls "unscientific administration."

In a letter published in *Nature*, June 13th last, Professor Ross shows up the many obstacles to good work that meet one at every turn in India, and all those who have worked in that country will bear witness to his remarks. But although the handling of the medical profession leaves much to be desired, *vide* Professor Ross's letter, the problem, so far as plague is concerned, is one not lightly to be got over. It is very easy to say, do this or do that, and in this country, where the welfare of each individual is the concern of the multitude, we cannot understand why any scheme for the general good should meet with opposition. Are we not apt to forget that it has taken centuries to arrive at this happy condition?

Anyone who has the smallest knowledge of Indian life knows the innumerable obstacles that rise up to baffle your efforts in every direction. Eliminate Bombay, Calcutta, Madras, and at most three or four other large cities in India, and what do we find? Millions of people, uneducated, bound down by caste rules, living on superstition, ready to believe the word of anyone so long as it contains the slightest trace of the supernatural. People whose customs of to-day have come down to them since India was. People who see in every passing cloud the finger of some irate god. Go back to the cities that have been eliminated. You will find three-fourths of the native population still hugging the superstitions of their forefathers, still anxious to be left alone with their troubles. And what of the educated fourth? In the majority of these educated minds there still lurks the shadow of superstition, and the man with the university degree will, when his child yawns, crack his finger-joints so as to frighten away any evil spirit that may be hovering round ready to find a lodging in his child's inside. In the face of all this the task seems hopeless.

There is another element, and this of a more serious nature, that has to be contended against. Many of these educated persons use their higher intellectual powers not for the general good but for their own individual advancement. They do not scruple to make use of the superstition and ignorance that surround them on all sides. Here is one case of many that came under my notice. In 1900 the proprietor and editor of a certain paper in Sind came forward as usual for inoculation, he and all his family, as soon as plague made its appearance. That done, he commenced a tirade against inoculation in his paper; not satisfied with that he accused the local plague authorities of brutality in the exercise of their duties. He went further and accused a native doctor of some offence connected with plague work. Government prosecuted. He was found guilty, sentenced to a term of imprisonment and a fine. He appealed and went on appealing until in 1902, just before the Delhi Durbar, he was acquitted. The native doctor, who had received some Rs.200 as compensation for the wrong accusations, was called upon to refund this amount. That man used to do no end of harm by his articles. He and his kind are some of the drawbacks to advancement in many parts of India.

But notwithstanding all these and many other unmentioned obstacles there can be no doubt that the plague question in India leaves much to be desired. The administration during the first few years was faulty, and now or for the past few years the jump has been too far in the opposite direction. To begin with, the material in hand was not properly utilised. Railway inspection was everything. No doubt it prevented the spread of plague to a certain degree, but it was impossible to make supervision complete; moreover, the men might have been more usefully employed. What I suggested in 1900 I am still inclined to hold to. That is, that if a certain number of medical gentlemen had been engaged, then placed either singly or in pairs throughout India in centres where plague was bad and just commencing, given an entirely free hand and allowed to make their investigations unmolested something of importance would more than likely have been discovered. It is only by living in a district where plague makes its appearance, runs its course for a certain number of months, then completely dies down, that one by constant watching, by daily investigation of each and every element that is likely to come into play, may discover the means by which plague is carried over the quiescent period. Such work cannot be done in a large city, there would be too many avenues to watch, but it can be done in an area including a certain number of small villages. Then at the end of six months, 12 months, or longer if necessary, let all the investigators be brought together and a conference held.

In July, 1906, the *Indian Medical Gazette* published a Special Plague Number. The subject was "How does Plague Spread?" It is generally admitted that the following may be accepted as causal factors in the spread of the disease: contagion from person to person, contaminated food-supply, wearing apparel, &c., rats, fleas, and other animals. That rats have always played a very important part in the spread of plague is no new theory. A Puranâ written over 800 years ago in India runs as follows: "When you notice an unusual mortality amongst rats it is a sure sign that you are shortly to be visited by a fatal disease, and your only safety lies in flight." Early in the present epidemic the natives learned to associate the connexion between rats and plague. In 1905 I carried out a series of experiments to prove the connexion between rats and fleas in the spread of plague. I had done one or two experiments in 1901 but had not the time or opportunity then to go fully into the matter. In 1900 and 1901 from observations and experiments it seemed very clear that rats and fleas were two leading factors in the local spread of the disease. Food-supply, especially grain, has always in my mind been accountable for the spread of the disease, but chiefly amongst rats. Experiments carried out in 1902 and afterwards in 1904 and 1905 corroborated the previous conclusions. On the above supposition I have always divided plague into the classes bubonic, pneumonic, and alimentary. In an article published in THE LANCET of June 10th, 1905, p. 1562, I gave this latter division and my reasons for thinking so. In the first years of the present epidemic all foodstuff that was found in infected go-downs was either destroyed or exposed to the sun for several days. This was only a measure, however, carried out in one or two places and in my opinion should be much more enforced.

There can be nothing but praise for the strenuous efforts made by the various Governments in India to stamp out the disease and prevent its spread, but it has always seemed that too much weight is given to certain lines of action even after the results were there to prove their faultiness. Then, again, too much importance is given to various methods of inspection and segregation employed in certain places where plague has not made headway. To say, for instance, that railway inspection and notification have kept Madras city free from plague is asking one to accept too much for these precautions. It is one of the puzzles connected with this disease that have still to be answered. Black Town, in Madras city, in about as favourable a locality for the disease to thrive in as one could seek for. Plague cases have occurred there, but the disease has never made headway. Why? Take Calcutta. Plague should have swept the city but it has not. There are still several questions which require answering before we can get to the bottom of the periodical recrudescence and disappearance of this disease. And because Madras and Calcutta are free to-day it by no means follows that they will remain so for ever. Several districts lived under that false impression for one or two years, only to feel the scourge more acutely when it did come. There is one important district in Mysore State in which plague, at least during the past two years, has been a more or less minus quantity. That is on the Kolar Gold Fields. Plague used to visit the fields regularly almost every year. The dislocation to the work can be well imagined. The part of the fields where the coolies live is about nine miles long by about one wide. The coolies live in tattie huts erected in long parallel rows. Each hut stands by itself. If a case of plague occurred in one of these huts it was pulled down and burned. The inhabitants were segregated and the adjoining huts were also evacuated. These precautions no doubt curtailed the disease to a certain extent but the disease ran its course. In 1904 it was decided to commence at the north end of each camp and go right through, digging up the floor of each hut and destroying all the rats. When this was done the performance began all over again. This was carried on through 1905 and 1906; in addition in the latter year "Liverpool rat virus" was laid down all over the fields, commencing at one end and going clean through. It so happened that in the extreme north end was a closed-down mine and the virus was not laid down in that quarter. Within a fortnight of the experiment word was brought to the "Lab." that many rats were making their way to the north end of the field and one or two were found dying in outhouses. From these dying rats I was able to isolate a bacillus identical in every way with the original Liverpool rat virus bacillus. The outbreaks of plague on the fields have become less and less. Isolated cases have occurred, but the disease has never spread to any extent since these two plans have been carried out. Yet in the neighbouring villages, which abut on the fields, plague is constantly occurring. In towns and villages it would be impossible to carry out the former of these two methods to any extent, but the use of the "Liverpool rat virus" might be extensively used in conjunction with other exterminators. The results on the gold fields appear so satisfactory that they are worthy a more extended trial.

Haffkine's prophylactic should be pushed more than it is. Unfortunately, it has not found favour with the whole of the medical profession in India and in Madras Presidency it has not been used very much for that reason. It is also supposed only to confer immunity for at most six months or so. This belief has told against its use in many places. There is, further, a widespread impression amongst the natives that it produces impotence. Now, if we have a considerable portion of the public in Great Britain objecting to vaccination and allowed by Government to carry out their objection to the point of refusal, thereby building up an ever-increasing population of unprotected individuals until one day we have a general and widespread outbreak of small-pox, how can we afford to laugh at the uneducated Indian because he will not come forward for inoculation? The problem is not an easy one, but it is one that must be tackled. This yearly death roll is becoming a very serious matter. Plague has long ago ruined the trade of Bangalore; Poona has suffered and is still suffering; the Punjab is in a pitiful condition; at any moment the disease may break its present bounds and flow over the Straits Settlements and Ceylon and the consequences are not difficult to conceive.

The treatment of plague has not made much advance during the past years. Various sera have been tried with disappointing effects. Carbolic acid injections have done good in many cases and at one time it was thought that it would prove very efficacious. Adrenalin has been boomed, but cardiac stimulants are still the chief mainstay. There is one drug which so far I have not seen mentioned and which I used in 1906 on four or five cases with remarkable results. This is collargol, an allotropic form of silver. It is soluble in water about 1 in 25. I used it in intravenous injections, one cubic centimetre of a 1 per cent. solution. The first case was hardly a fair test, but the result was astonishing.

A man was admitted into the plague hospital about 8 A.M. He had double cervical buboes. His temperature was 104·6° F. and his pulse was 130. He was highly delirious and death seemed imminent. So hopeless was his condition that at first I refused to try the drug. However, I gave one cubic centimetre of a 1 per cent. solution intravenously; this was at 9.30 A.M. I called down again at 5 P.M. The temperature was 100° and the pulse was 105. The wild delirium was gone but he was picking at his blanket. It was evident that the bronchial glands were infected, also the apices of his lungs. I repeated the injection. Next morning his temperature was normal, his pulse was 105, and he was able to answer questions. I did not repeat the injection. His breathing was very laboured and the upper portion of his lungs was quite dull. He died on the following day. The necropsy showed infiltration of all the cervical glands, bronchial glands, and consolidation of the upper and middle lobe of the right lung and upper lobe of the left. I felt satisfied that the drug had had a beneficial effect on this man's case. Had he not received it I am sure that he would have died the same day.

The next two cases were men with inguinal buboes. They had been ill 24 hours previous to admission. They had temperatures over 101°; the buboes were exquisitely painful. I gave both intravenous injections of one cubic centimetre of a 1 per cent. solution in the morning; by evening their temperature was normal. The injection was repeated next morning. The temperature never rose again and the buboes disappeared in three days, both men being up and about on the eighth day. The other two cases were in children. I was unable to do intravenous injection and after two days' illness both died. The drug, I think, merits further trial. I was not in charge of the plague camp and it was only by the courtesy of the native doctor that I was allowed to carry out this treatment.

I am, Sirs, yours faithfully,
ALEX. M. ELLIOT, M.B. Edin.
Cliveden-place, S.W., August 12th, 1907.

# THE GEOGRAPHICAL DISTRIBUTION OF HERNIA.

*To the Editors of* THE LANCET.

SIRS,—Though I was well aware that abdominal hernia is a complaint common to all nationalities I was not sure whether the varieties we are familiar with in this country were also met with amongst other and less civilised communities. During the early part of this year I wrote to medical men practising in various parts of the world, asking them if they would kindly inform me as to the frequency with which hernia was met with amongst the native races in their respective districts. The information very kindly furnished me is of considerable interest, and it would appear that hernia has not only a wide geographical distribution but that the more common varieties as seen in this country prevail all over the world. It is somewhat remarkable that femoral hernia is so seldom met with in certain districts. The influence of employment as regards the incidence of hernia is also clearly brought out. The following are some of the letters I have received :—

Dr. G. DUNCAN WHYTE *of Swatow, China.*

Hernia is of frequent occurrence in this neighbourhood, mostly inguinal, and usually on the right side. For example, a hospital here bought five and a half dozen trusses for right inguinal hernia. and only one a half dozen for the left side. Out of, roughly speaking, 15,000 patients I have seen in China I have only once diagnosed a femoral hernia. I have not heard of anyone here or in Swatow who stocked trusses for femoral hernia. Last year I saw a curious case in which there was a very small hernia in the linca alba, midway between the xiphi-sternum and the umbilicus. There had been neither injury nor disease locally and the same condition had existed in the patient's father and (pateroal) grandfather. About eighteen dozen trusses are sold in Swatow in the course of a year, a town with a population of 20,000 by night and 30,000 by day. The extra 10,000 come in from all the villages around to earn their living by coolie work, &c. Tight prepuces are common and the straining to express urine may be expected to accentuate any congenital defect that exists. The Chinaman would not dream of having his foreskin cut any more than most of them will consent to have extra digits removed ; they wish to preserve their whole body complete. They all "hunker" to defæcate, an attitude which by supporting the walls of the inguinal canal, or by securing that a man shall only defæcate when his hernia is reduced, may diminish the chances of strangulation, but to my mind this attitude does not have that influence upon the incidence of hernia which I was led in my student days to anticipate. On the other hand, its causal relation to hæmorrhoids and more markedly to prolapse of the rectum seems to me beyond question.

Dr. A. SIMS *of Matadi, Congo State.*

Hernia is most common here. I should think 3 to 5 per cent. of the adult male population is affected with it. Formerly, when there was no railway and all goods were carried to the interior on men's heads, hernia was more common than now and strangulated hernia was very common. Native products are now only carried, at least in these parts, for short distances, and in consequence hernia is diminishing. Child labour for carrying burdens is growing less and as a result I see fewer children with hernia.

Mr. MALCOLM A. SMITH *of Bangkok.*

I should consider hernia to occur as frequently here as it does in England. I have, however, in five years' practice never seen or heard of a case of strangulation of the bowel.

Mr. B. GRANVILL CORNEY *of Fiji.*

From personal observation I can say that inguinal hernia is of common occurrence amongst the members of the Fijian race. Umbilical hernia is also very frequently met with in Fijian children, though it usually becomes less apparent as they grow up. I have seen one case of obturator hernia in a boy of 12 or 14 years of age.

Mr. A. J. GLANVILLE BARKER *of Sarawak, Borneo.*

Hernia is fairly common amongst all the races we see here—viz. Malays, Dyaks, Chinese, and Indians.

Dr. EDWARD H. ARMITAGE *of Honolulu.*

The following statistics have been furnished to me by the surgeon to the Queen's Hospital in Honolulu. From June 1st, 1904, to May 13th. 1907. Total number of cases operated upon, 54. Nationality : Hawaiian, 7; part Hawaiian, 2; other nationalities, 45. Varieties—inguinal: single. 40; double, 8—total, 48; femoral: single, 5; double, 1—total, 6. Sex—Male: inguinal, 46 ; femoral, 4—total, 50. Female: inguinal, 2; femoral, 2—total, 4. Strangulated, 3; non-strangulated, 51.

I am, Sirs, yours faithfully,

R. W. MURRAY, F.R.C.S. Eng.,

Surgeon, David Lewis Northern Hospital, Liverpool.

July 17th, 1907.

## THE DISCUSSION ON ACUTE NEPHRITIS IN CHILDREN AT THE BRITISH MEDICAL ASSOCIATION.

*To the Editors of* THE LANCET.

SIRS,—May I point out that your report of my remarks on acute nephritis in children on p. 390 of THE LANCET of August 10th is misleading. The gist of my statement was that ocular manifestations were conspicuous for their absence in *acute* nephritis. Amaurosis without ophthalmoscopic signs occurs as in adults. The typical picture of albuminuric retinitis—neuro-retinitis with a star-shaped figure at the macula—which occurs rarely in cases of intracranial pressure without renal disease in adults, is relatively common in these cases in children.

I am, Sirs, yours faithfully,

August 9th, 1907. J. HERBERT PARSONS.

*** We have much pleasure in inserting Mr. Parsons's correction. Our reports have to be somewhat condensed and hence there is always a liability to ambiguity.—ED. L.

## EXPERIMENTS ON PROLONGED PROTEIN FEEDING.

*To the Editors of* THE LANCET.

SIRS,—In a criticism of my paper on protein feeding Dr. Chalmers Watson expressed the opinion that more than one of the thyroid glands therein illustrated are pathological and not as I stated normal, but to my request for enlightenment as to what points he relied on in forming this opinion he has replied that he prefers to postpone giving any reasons. Seeing that the criticism is one which, if substantiated, would materially affect one of the conclusions of my paper I hope Dr. Watson will appreciate the desirability of supporting his statement by some facts, however brief.

I am, Sirs, yours faithfully,

Harley-street, W., August 10th, 1907. DAVID FORSYTH.

## INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

*To the Editors of* THE LANCET.

SIRS,—I attended all the general meetings of this important Congress and I spent many hours in Sections II., VII., and X. during the past week, but with the exception of a passing reference by Mr. L. M. Bowen-Jones of Carmarthen on Friday the Sunday schools were not mentioned (to my knowledge) either in any set paper or by casual debaters. The entire omission of Sunday schools from the programme of a congress on school hygiene is a curious fact and difficult to account for. As far as my own experience goes Sunday schools are frequently the foci and hotbed of infectious diseases and any closure of day schools will be useless unless accompanied by that of the Sunday schools in the same district. It is true that the scholars are only in the Sunday schools for from one hour to one and a half hours once or twice in the day, but the buildings are often much overcrowded, badly lighted, insufficiently ventilated, and otherwise ill adapted for their purpose.

I consider that the powers of the local sanitary authority for dealing with Sunday schools are not so stringent and easy of application as they ought to be, for some types of Sunday school managers are not gifted with common sense and they can only be influenced and made to do right by the exercise of legal powers strictly applied.

I am, Sirs, yours faithfully,

SIDNEY C. LAWRENCE,

Medical Officer of Health and Delegate from Edmonton.

Edmonton, August 12th, 1907.

## AN ASSOCIATION OF SHIP SURGEONS.

*To the Editors of* THE LANCET.

SIRS,—Would you allow me through the medium of your valuable columns to issue an appeal to all ship surgeons, both past and present, urging them to join the B.S.S.A. (British Ship Surgeons' Association), which is being formed with a view to improving the "status" of medical officers to shipping companies and also to obtain more "clinical" and "experimental" evidence on the treatment of "sea-sickness" and other "affections" peculiar to sea-going persons. It is proposed ultimately to issue a *Ship Surgeons' Gazette* monthly, that is, if the membership permits. We have every reason to believe that it will have the substantial support of all shipping companies, seeing that it will indirectly further their interests. Further particulars can be obtained from, and application for membership to be sent to,

Yours faithfully,

G. METCALFE-SHARPE,

Surgical Officer.

Angram Hospital, Middlesmoor, Leeds, August 8th, 1907.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *Open Spaces.*

THE controversy regarding the acceptance or non-acceptance of the last offer made to the city by the Open Spaces Society has been somewhat prolonged and it has caused an unfortunate amount of friction. It will be remembered that the Open Spaces Society offered to the city four spaces, the total cost of which would be £12,000, towards which the society had collected £8000. The baths and parks committee was requested to report upon the matter and, as I pointed out recently, its report was decidedly adverse. The committee quite rightly considered not only the purchase cost but also the amount necessary for putting the plots into proper condition and the annual cost of upkeep. There can be no doubt, however, that as regards the two latter items it went beyond the necessities of the case, and it seemed to have missed the main point of the matter which was the necessity for securing the spaces whilst they were available under favourable conditions, even if they could not at present be elaborated and improved. Fortunately the council grasped the essential fact and whilst recognising the good intentions of the baths and parks committee it decided that as no such favourable moment for the acquisition of the spaces was likely to recur the offer of the Open Spaces Society should be accepted. One of the main difficulties which threatened to bar the way was the unwillingness of Smethwick and Handsworth to share the expenses of upkeep, in spite of the fact that the famous Black Patch, the largest of the areas offered, will be of service to their inhabitants as well as to those of Birmingham. The council, however, took the broad and right view that the unwillingness of others to bear their proper burden must not be allowed to stand in the way of anything which would be of advantage to the healthy development of the city. Wisely, however, in accepting the offer of the Open Spaces Society the council took the precaution to provide that Handsworth and Smethwick should pay their fair share of the expenses which must eventually be incurred in connexion with Hockley Brook which passes through the Black Patch. The Open Spaces Society is to be congratulated on the good work it has done in this matter. It has worked hard for the general good and even whilst the controversy over its last offer was in progress it succeeded in collecting an additional £1000 towards the purchase of the plots it offered, thus reducing the contribution of the city to £3000. The plots which it secured are not all that could be wished for, as some of the objectors to the scheme pointed out, but they will henceforth remain as open spaces and as "lung" areas in crowded districts.

### *Warley Model Village Scheme.*

Mr. A. M. Chance has been attempting to found a model village on coöperative principles on a plot of land at Warley for which he holds an option till the end of September next. To make the scheme a success it is necessary that there should be 500 subscribers willing to take up plots. At present only about one-tenth of the requisite number have seen their way to join the scheme and unless much more progress can be made in the next few days it is probable that the plan will have to be given up, in which case what might have proved a very interesting and instructive experiment will not be made. Apparently one of the main difficulties would-be applicants find is that of providing the full amount of the cost in the necessary time. In connexion with this Mr. Chance stated that an insurance company was willing to take part on the following terms. Presuming the applicant to be 35 years old and the house and land which he was to acquire of a total value of £300, the company would lend £240, provided the applicant insured under a 20 or 25 years' endowment policy for £240, in which case the interest on the £240 and the premium on the endowment policy would amount to an annual total of £18 17*s.* 3*d.* If these are the best terms that can be obtained the probability of the necessary number of subscribers coming forward seems small.

### *Sleeping Accommodation for Railway Navvies.*

It appears that in association with the extension of the Midland Railway from Water Orton to Kingsbury no proper sleeping accommodation has been provided for the 300 navvies employed on the work and as a result many of them have had to sleep in the open or in damp and unsatisfactory shelters. Such a condition of affairs obviously contains the germs of a definite danger to the public health and is a state of affairs over which authorities should have a control that appears to be entirely lacking. When local accommodation is insufficient the contractor should be under obligation to erect temporary buildings. Such buildings being temporary structures it would only be necessary that they should easily be kept clean and dry, but such simple precautions might well serve to avert serious danger to surrounding populations.

### *The Necessity for a Sufficiency of Attendants at Public Baths.*

Quite recently a boy died suddenly in the Victoria-road baths. It was proved that death was due to syncope and that no assistance would have been of any use in this special case, but the Aston Baths Committee has wisely taken the warning and has arranged for an additional assistant, so that some person can always be present when the swimming bath is in use. This is a precaution which should be taken at all public swimming baths, for the danger of accident is always greatest when one person alone is using the bath, as he may at any moment be seized with cramp or may injure himself in diving, and in either case be quite unable to call for assistance.

### *Health of the City.*

Though in a generally satisfactory condition, the death-rate for the second quarter of the year being 15·8 as contrasted with 16 in the corresponding period of 1906, and the death-rate for the week ending July 27th being only 11·9 per 1000, still the city is suffering from an excessive amount of measles and scarlet fever. The scarlet fever is of a mild type but measles has been more than usually fatal and the zymotic death-rate of 2·09 per 1000 for the second quarter is relatively too high. Everything is being done to prevent the disease spreading, but the preventive measures hitherto developed are not proving adequate.

August 12th.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Bolton's Water Supply.*

At the meeting of the Bolton town council on August 7th Dr. J. Thornley, medical officer of health of the Halliwell district of the Bolton Union, stated that the acidity of the water at present was such that it had become a great danger. Several cases of lead poisoning had already occurred. Some time ago the Local Government Board after an examination of the water said that certain measures must be taken to do away with dangerous elements. Some steps were taken but they were inefficient. Dr. Thornley considered that it was a mistake to have the water analysed by an outsider when the medical officer "was the party responsible to the Local Government Board." He advised that men should be employed to look after the pond weed at the reservoirs. An alderman and another member of the council deprecated public discussion and considered "that if Dr. Thornley had been a man of discretion he would not have opened his lips on the matter." One of them acknowledged that there had been two cases of lead poisoning but said "they did not arise from any arrangement for which they were responsible." It is certainly unwise to attempt to ignore this dangerous acidity of a public water-supply. There have been so many instances of serious outbreaks of lead poisoning from moorland gathered water that an attempt to hush up the matter seems almost criminal. Even if the true state of the case is fully made known a little wholesome alarm will only make people rather more careful to see that plenty of water is run off from the pipes before any is used for cooking or drinking. If they are left in ignorance of the risk run when this acidulated water is used after standing for some time in lead pipes more mischief will follow than any brought on by the fear of lead poisoning.

### *Platt Hall Estate.*

In a southern suburb of Manchester there is a prospect of acquiring an estate of 77 acres or thereabouts, fairly well timbered and with a house. At a town's meeting held the other week a resolution was passed affirming that it was desirable that the city council should acquire it for public use as a park if it could be obtained at a reasonable price. The matter was discussed at the council meeting held on

August 7th and it was resolved that the Lord Mayor and the Deputy Mayor should be requested to ascertain the terms and conditions on which the corporation could acquire the estate and to negotiate for its purchase if the council and Local Government Board approved. Manchester, like other large towns, grows larger and larger, and takes into itself one green oasis after another, so that the uninterrupted succession of bricks and mortar, with chimneys, each one adding its contribution to the overhanging cloud of smoke, is ever extending. It would be a misfortune if this opportunity of obtaining so extensive and valuable an open space, a true "lung," for the city were lost. It would be of untold value in the future on the score of health. Of course, the question of cost is important, but long-suffering ratepayers do not always look on both sides of a question. They forget the advantages that would accrue to the city in the diminution of sickness, and so of expense, that would be sure to result if the Platt Fields were kept as an open space instead of being covered with dwellings.

### *Scarlet Fever at Dukinfield.*

Rather a serious outbreak of scarlet fever has occurred at Dukinfield. At least 30 cases were reported a week ago. With the view of checking any further spread of the disease the local elementary schools are to be cleansed and disinfected. A similar outbreak took place some months ago and on that occasion Mr. J. R. S. Park, the medical officer, said there was no evidence, in his opinion, that the infection was conveyed by the milk- or water-supply.

### *Underfed and Badly Clothed.*

Dr. Meredith Young, the medical officer of health, has been making investigations as to the feeding of the children attending the Stockport schools. He reports that 338 children in the town's schools are underfed and urges "the authorities to provide against this state of things." But he adds that "the question of clothing, and particularly of footwear, is of more importance to the health of such children than feeding," and he goes on to say that "if there be any funds that can be diverted in this direction I feel sure it would improve the health and physique of the children far more than any feeding experiments." The consideration of the remedy for this state of things, important as it is in its bearing on the future soundness and well-being of the race, would touch too closely on socio-political questions for these columns, but one thing stands out prominently, which is that the natural dependence of the children on the parents and the responsibility of the parents for the care and up-bringing of the children seem to be more and more lost sight of. The effect on the latter is, of course, to lessen the feeling of parents that they have duties towards their children and to loosen family ties. No doubt in a very large proportion of cases the vice of drunkenness or some other form of self-indulgence cripples the family exchequer and lowers the family morale. We seem to be approaching the age, if not of incubators, of artificial mothers for the nation.

### *£10,000 Maximum.*

The University of Manchester does not appreciate the £10,000 maximum fixed by the Treasury in the place of the grant of £12,000, which had been received so long that it had come to be looked upon as income to be depended upon. It is said that no slur on the University is intended, but by the public it will be understood as a snub and will inevitably tend to lower the prestige and the prosperity of an institution which confessedly has adopted and maintained a high standard of efficiency and does not desire to be penalised by the crippling of its resources.

### *Lancashire Asylums Full.*

At Clitheroe it was reported at the meeting of the board of guardians the other week that a certified lunatic inmate was still in the workhouse as no place could be found for him in an asylum. The five Lancashire asylums had been applied to but they were all full. The man was ill and scarcely fit to be removed, but if moved it would have to be to a Yorkshire asylum, and he would have to be certified by a Yorkshire authority. This is an unfortunate position for a self-respecting county.

August 13th.

---

Central Midwives Board.—At the examination of candidates held by this board on August 1st there were 243 candidates examined, of whom 200 passed, being a percentage of failures of 17·7.

## SCOTLAND.

(From our own Correspondents.)

### *Development of School Children in Glasgow.*

Dr. W. Leslie Mackenzie and Captain A. Foster have been engaged investigating for the Scotch education department the statistics amassed by the Glasgow school board as to the physical condition of the children attending school. For purposes of investigation the 73 schools were divided into four social groups. Group A included 26 schools in the poorest districts; Group B 27 schools in the poor districts; Group C, 11 schools in districts of a better class; and Group D, nine schools in districts of a still higher class, and including four out of the five higher grade schools in the city. Under all the groups about 73,000 children have been examined. In Group A 19 per cent. of the children resided in one-roomed houses and proportionately the grouping followed is confirmed by the distribution of one-, two-, and three-roomed houses. As to the general results of the inquiry, it is found that at each age from five to 18 the average weight of the children is uniformly below the standard of the anthropometrical committee of the British Association. As regards height, up to the age of 14 years the children, both boys and girls, are distinctly below the standard, while from the age of 15 years there is considerable variation, apparently owing to the small number examined above that age. There is, however, one exception: the children aged five years in Group D are in weight practically identical with the standard and in height are a shade over it. The boys in Group A fall very much below the standard. At the age of 10 years their average weight is 10·8 pounds below the standard and the average height 2·8 inches below the standard, and at 13 years the average is 11·1 and 3·1 below the standard respectively. With regard to the girls the facts are practically parallel. The graduation in height and weight from the poorest group to the best group is very striking. As surely as a child comes from Group A he or she is likely to be smaller and lighter than the children from Group B, and so on. The average weight of the one-roomed boy is 52·6 pounds, of the two-roomed 56·11 pounds, of the three-roomed 60·6 pounds, of the four-roomed and over 64·3 pounds. The respective heights are 46·6 inches, 48·1 inches, 50 inches, and 51·3 inches. Only one conclusion is possible—namely, that the poorest child suffers most in nutrition and growth. It cannot be a mere coincidence that boys from one-roomed houses should be 11·7 pounds lighter on an average than boys from four-roomed houses and 4·7 inches smaller. In the case of girls, also, it is shown that those from one-roomed houses are on the average 14 pounds lighter and 5·3 inches shorter than those from four-roomed houses.

### *Supposed Case of Spotted Fever in Aberdeen.*

Dr. Matthew Hay, medical officer of health of the city of Aberdeen, in his report to the town council for June says: "Towards the end of the month a case of suspicious head illness was reported from Torry and was at once removed to the city hospital and the usual disinfection and other precautions were taken. The early progress of the case in the hospital did not definitely reveal the presence of cerebro-spinal fever, but within the past few days the spinal fluid has begun to show the presence of the germ characteristic of this disease. There has been no similar illness either before or afterwards in the family from which the case was removed and so far the source of the illness has not been traced. The patient, who is a boy of 15 years, had not been out of Aberdeen for some months before he took ill."

### *Opening of the Fyvie Cottage Hospital.*

This hospital, which has been closed for several months on account of repairs and improvements, was opened last week in the presence of a distinguished company which included Lady Leith of Fyvie, Colonel and Miss Lorna Burn, Mrs. Albert Leith, Miss Bennett and Miss Giffen, Fyvie Castle. The opening ceremony was performed by Lady Leith who was introduced by the Rev. Mr. Wauchope Stewart. Lady Leith referred to the generosity of Colonel and Mrs. Gordon in giving the hospital to Fyvie some 27 years ago and expressed the belief that with all the new improvements in bedrooms, operating rooms, bathrooms, together with substantial teak-wood floors, the place would be more useful and comfortable than ever. Dr. C. C. Greig (Bridgend), in proposing a vote of thanks to Lady Leith for her kindness in opening the hospital, mentioned that the cost of the large number of repairs and improvements, amounting in all to £600, had been handsomely defrayed by Lord and Lady Leith. After the opening all those present were invited inside to see over the building.

### *The Epidemic of Enteric Fever at Peterhead.*

During the past week 25 cases of enteric fever have been notified to the medical officer of health at Peterhead, making a total of 313 cases since the commencement of the outbreak. Of these, 110 have been treated in the hospital and the remainder at home. 50 cases have been discharged from the hospital as well and one has died during the week. About 140 cases have fully recovered. During the month of June three cases of enteric fever were reported in Aberdeen, one of which proved fatal. The source of infection of the fatal case was apparently Peterhead. In each of the three cases the infection was traceable to a visit to Peterhead.

### *Death of James Henderson Mackay, M.A., M.B., Ch.B. Aberd.*

The death is reported in Manchester of Dr. James Henderson Mackay. Dr. Mackay was a native of Aberdeen and was educated at the Grammar School and the University of Aberdeen. He graduated in arts in 1896 and in medicine in 1899. For a time he was on the staff of the Royal Lunatic Asylum, while for the past two and a half years he has been in practice in Manchester. Dr. Mackay's end came suddenly. After a hard day's work he retired to rest in the best of health and spirits. In the early morning he was found unconscious and soon passed peacefully away, heart failure being the cause of death.

August 12th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Health of Belfast.*

AT the usual monthly meeting of the Belfast corporation, held on August 1st, it was reported that between June 16th and July 20th 181 cases of infectious disease had been notified—viz., 24 cases of typhoid fever, 44 of scarlet fever, 22 of simple continued fever, three of puerperal fever, 14 of diphtheria, 1 of croup, 25 of erysipelas, and 48 of cerebro-spinal meningitis. The death-rate during the five weeks ended July 20th was 18·3. There is a decrease in typhoid fever and cerebro-spinal meningitis. During the week ended July 27th two cases of cerebro-spinal fever were notified, as compared with seven in the previous week. In the same period there were 12 deaths from the disease. Since the previous meeting of the committee, July 25th, five cases of cerebro-spinal fever were notified. There are still 20 cases of cerebro-spinal fever in Purdysburn Fever Hospital.

### *Rainfall in Ulster in July.*

At Seaforde, Co. Down, during July rain fell on 13 days to the amount of 2·23 inches and the total for the past seven months is 22·85 inches, which is more than in the same time in 1906 (17·93 inches).

### *The Treatment of Consumption in Belfast.*

The Local Government Board has approved of the arrangement made between the committee of the Forster Green Hospital and the corporation of Belfast, under which 25 beds are to be placed at the disposal of the corporation for consumptive patients at a charge of 35*s.* per bed, for a period of ten years. In its letter the Board says it trusts that it may lead to a larger effort on the part of the corporation for dealing with the prevalence of pulmonary consumption in Belfast, and adds, "While the Board would have been glad if the corporation had seen their way to propose a more extensive scheme for the treatment of consumptive patients, in view of the extensive prevalence of pulmonary tuberculosis in Belfast, they consider that the delay and other difficulties which might attend the negotiations for such a scheme would not justify them in withholding their approval of the present proposal."

### *North of Ireland Veterinary Medical Association.*

At a meeting of the above association, very largely attended, held in the City Hall, Belfast, on July 26th, the President (Mr. J. J. Ross, M.R.C.V.S., of Belfast) being in the chair, Professor A. E. Mettam, B.Sc., M.R.C.V.S., President of the Royal Veterinary College of Ireland, read a paper on the Veterinary Surgeon as an Officer of Public Health. Having referred to the scientific education now needed by veterinary surgeons he pointed out that his study of disease extended far beyond the cause and the course; indeed, it became a study of economics, either as affecting the owner, the municipality, or the State. With reference to his duties as an official assisting those dealing with the public health, the veterinary surgeon should be the chief inspector of meat, and should be responsible for the inspection of all cowsheds and all animals producing milk for human consumption. He should be the official to whom all practising veterinary surgeons should notify infectious diseases in their own area. He should be consulted on every occasion when buildings were being erected for animals, such as stables, cowsheds, kennels, &c. As chief inspector of meat he should be responsible for all meat exposed for sale. Both the veterinarian and the medical officer have their own places. The medical official should be responsible for the health of the community, while the veterinarian should be his chief lieutenant, taking charge of that portion of the work of the public health committee relating to animals, no matter whether they were to produce flesh for food or milk or whether they were kept for work, profit, or pleasure. Sir John W. Byers, who had been specially asked to introduce the discussion on the subject of the paper, after congratulating the members of the veterinary profession in the north of Ireland on the step which they had recently taken in forming a new society, and having spoken in terms of the warmest praise in reference to Professor Mettam's very suggestive paper, said that veterinarians and medical men had now great responsibility in their hands as regards questions of public health, and in nothing was this more apparent than in the care that was now demanded as to the purity of our food supplies, especially meat and dairy produce. He said he was convinced that to be fair to farmers, traders, and consumers things would never be right until inspection of these products was imperial, universal, and of the same type or method, done by thoroughly trained veterinary surgeons appointed by the State and responsible to the State; and municipalities should not admit into their markets meat or dairy produce which had not passed a State inspection. In America the laws of such inspection were federal and the whole arrangement was imperial in Germany. He spoke of the universal attention that was now being called in all countries to the importance of a State control of the milk-supply and quoted the very important conclusions in the second interim report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis, which showed so clearly that tuberculosis in the cow was a fruitful source of disease and death in man. With reference to the practical remark made by these commissioners: "Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the sale or the consumption of such (tubercular) milk," Sir John Byers advocated that these increased powers should be given to the State so that a uniform and universal system or line of action might be adopted both in town and country. In dealing with such serious problems of public health the medical and veterinary professions would have to work together so as to bring about a state of affairs in which not only would the cattle used in dairying be free from any acute or chronic disease, but in which the milkers and all others directly in charge of the dairies would also be clear of any form of infectious illness. This was the ideal they must all strive to obtain, and it was based upon the teaching of science and experience. Mr. J. McKinney, M.R.C.V.S., Dublin, moved, Mr. J. A. Thompson, F.R.C.V.S., seconded, and Dr. A. Dempsey supported, the following motion, which was unanimously carried:—

> That a system of inspection of meat and dairy produce should be established by the State, to be applied with equal thoroughness and impartiality in all districts; that such inspection should be conducted only by trained veterinarians and appointed by the State; that municipalities should be empowered to exclude from their markets all meat or dairy produce, whether of native or foreign origin, which had not passed the State inspection.

On the motion of Sir Otto Jaffe (ex-mayor of Belfast and member of the public health committee), seconded by Mr. H. McConnell, M.R.C.V.S., and supported by Dr. S. Agnew (medical officer of health of Lurgan) and Mr. G. L. St. George (Lisburn), the following motion was carried:—

> That in the opinion of this meeting at an early period the veterinary surgeon should report direct to the health committee and not to the medical officer of health.

Sir Otto Jaffe said that when in Belfast the veterinary surgeon was appointed a strange arrangement was come to, in so far as that official was partly responsible to the market committee and partly to the health committee. Mr. Matthew Hedley, F.R.C.V.S., of the Board of Agriculture, Dublin, moved a vote of thanks, which was seconded by Mr. W. Dawson, M.R.C.V.S., to Professor Mettam and Sir John Byers for their addresses, and these gentlemen having acknowledged the compliment the meeting terminated with a vote of thanks to the chairman. The Lord Mayor, the Earl of Shaftesbury, telegraphed regretting his inability to be present but wishing the conference every success.

### *Cerebro-spinal Meningitis.*

At the last meeting of the public health committee (August 1st) it was reported that, practically speaking, cerebro-spinal fever had ceased to exist in Belfast. In future, no returns, as have been given each week, will again appear, unless the disease should break out again. It is to be hoped the public health authorities will give a full account of the great epidemic that has occurred in Belfast, so that some advance in our knowledge of the disease may be made. It is quite apparent that the malady has simply in time worn itself out, and apparently nothing has been discovered throwing any light either on its infectiousness or on its treatment.

### *The Belfast Health Commission.*

The report of the Belfast Health Commission will probably not be ready before the end of September and it is not proposed to issue an interim report.

### *The Riots in Belfast.*

The riots in Belfast took such a serious turn on August 12th that the Riot Act had to be read and the military were ordered to fire twice with the result that two men and a woman were killed and four others received gunshot wounds. A very large number of soldiers, police, and rioters received wounds from stones, broken bottles, and batons; and it is well known that many of the rioters, for fear of being detected, do not come to hospital, but are treated at their own homes. The surgeons at the hospitals have had a new experience in treating gunshot injuries.

### *Belfast Hospital for Diseases of the Skin.*

From the report which was presented at the annual meeting of the friends and supporters of this charity, held on July 31st, it appears that 652 patients were treated during the past year, of whom 31 were intern. There is a debt of £107. A new extern department and electric department, equipped with instruments and appliances of the most modern and approved type, have been added to the hospital. The Finsen light and x ray treatment, available now in this institution, will compare most favourably with that of any other similar hospital.

August 13th.

---

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *Senile Atrophy of the Brain.*

AT the Hospitals Medical Society on July 10th M. Pierre Marie exhibited two brains from old people which showed typical physiological senile atrophy, characterised by diminution in the volume and weight and by enlargement of the sulci separating the convolutions. Depressions and hollows could be made out on these brains such as have been wrongly considered to be lesions, and on one of them there is a depression with a brownish colouration which resembles an old hæmorrhagic focus at the level of the third left frontal convolution. The brain has the exact appearance of one of the two on which Broca constructed his theory of aphasia.

### *High Frequency and High Tension Sparks in the Treatment of Cancer.*

At the Academy of Medicine recently M. de Keating-Hart said that he has tried treating cancer by the passage through the tumour of powerful sparks emitted from an Oudin's resonator. The results he has obtained have been the suppression or the relief of pain after a transient sensation of burning and the frequent arrest of hæmorrhages. The later effects, varying with the length of the sittings and the more or less advanced state of the disease, are marked by a diminution in the growth of the tumour and an improvement in the general condition of the patient.

### *Prognosis in Idiocy.*

At the annual meeting of the Society of Hypnotism (Hypnologie) and Psychology M. Voisin expounded his views on the prognosis in idiocy; he considers that complete idiocy, whether congenital or acquired, is capable of improvement. Contrary to the general opinion, acquired idiocy is the graver form and the idiot children with regular features and very few signs of degeneracy are refractory to training; some external cause has apparently come definitely to interrupt their psychical development. On the other hand, children born with even very marked stigmata of degeneration are capable of some intellectual development.

### *The Pathology of Moveable Kidney and of Visceral Ptoses.*

At the Academy of Medicine on July 23rd M. Reynier opposed the opinion of M. Lucas-Championnière that moveable kidney is caused by enteroptosis. He considered that the two affections are often connected but that they can occur independently; they are symptoms of a common cause which results from a primary functional disturbance in the nervous system. The tone of the abdominal musculature, in fact, depends on the nervous system, and it is the loss of this tone that causes the various ptoses. In the light of this etiology it is not astonishing to observe in patients suffering from these conditions mental and sensory phenomena out of all proportion to their lesions. The treatment of all these symptoms consists in the treatment of the moveable kidney either by a well-done fixation or the wearing of a suitable corset for the particular case.

### *The Pathological Significance of Shrinking of the Gums.*

At a meeting of the Pathological Society M. Ferrier has described a form of shrinking of the gums observed in persons of advanced years and generally in those with a tendency to calcification (of arteries), which is sufficiently distinct to be described as a clinical entity under the name of Fauchard's disease. This shrinking appears even in subjects whose teeth have been cleared of tartar. Bacterial growth occurs in the recesses between the gums and teeth, followed by destruction of the periosteum surrounded by the gum, secondary alveolar necrosis, and shedding of the tooth, after which the trouble clears up as the recesses at the bottom of which the bacteria grew are destroyed. M. Ferrier attributes this shrinking of the gums to the contraction in the calibre of an arteriole; in other words the commencement of a local atheroma. The loss of resistance in a badly-nourished region is an established fact. The correctness of this view is corroborated by the fact that "decalcifying remedies" have a marked preventive action on the process of the shrinking. The condition affords the practitioner an early sign of atheroma and a very useful indication for the employment of its proper treatment, and at the same time it may offer an explanation of other symptoms that the patient may present.

### *A Departmental Hospital for Villejuif.*

The general council, on the motion of M. Roussel, has consented to the purchase of land for the erection of a departmental hospital for old people at Villejuif. The contract for building works is to be put up for tender. The furnishing will be given as much as possible to workmen's associations. The sum required will be 4,285,000 francs. The State will be asked for a subsidy.

### *Urinary Lithiasis and Tuberculosis.*

At the Chirurgical Society M. Pousson recently made some observations on the coexistence of lithiasis and tuberculosis. He considers that in patients confined to bed for a long time for various tuberculous affections, especially those of bones, concretions of urates or oxalates are frequently formed in the kidney and more rarely in the bladder. This tendency to calculus formation is readily explained by the over-production of urates in these resting and over-fed patients. Secondary calculus concretions, nearly always phosphatic, are not rare in the kidneys, though they occur more often in the bladders of patients suffering from a bacterial infection in the stage of destructive suppuration. Besides these two classes of lithuric tuberculous subjects there is a third. This consists of patients who have undergone nephrectomy for tuberculous kidney disease and subsequently pass large quantities of sand in their urine, although they had passed none before the operation.

M. Pousson attributes this phenomenon to overfeeding and the tonic drugs, particularly those with a mineral base, which those patients are given.

August 12th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

### *The Medical Academy at Düsseldorf.*

THE recent opening of the medical academy at Düsseldorf was an event of some importance and was attended with considerable display. These medical academies have been already referred to in these columns and it may be remembered that they are institutions of quite recent origin having a two-fold object. In the first place they will import a new feature into medical study by introducing newly qualified men to the practical side of medicine more than is done at the universities. After the university medical curriculum has been completed and the State examination has been passed, the practical year which is required by recent regulations may be spent at the academies. Their second purpose is to supply the medical practitioners of the district with opportunities for post-graduate study. Up to the present time the only medical academy has been the one at Cologne; there was an intention of establishing a second one at Frankfort but the project failed because of the opposition of the medical profession in that city. The Düsseldorf Academy is the first for which clinics and lecture-rooms were specially built, because at Cologne the existing municipal hospitals were adapted for teaching purposes. The structural and other arrangements are described as excellent and the clinical material will certainly be abundant. A well-known surgeon, Professor Witzel, formerly of the University of Bonn, is the director of the new academy, while the teaching staff includes Professor Schlossmann in the subject of pædiatrics and Professor Lubarsch in the subjects of pathology and pathological anatomy. The medical academies at Düsseldorf and Cologne will probably be for a long time the only institutions of their kind.

### *Professor von Leyden's Valedictory Lecture.*

Professor von Leyden, who is vacating the post of ordinary professor of clinical medicine and of director of the medical clinic held by him for 32 years, was the object of many demonstrations of sympathy and esteem on the delivery of his last clinical lecture. Many of his colleagues and former assistants as well as the staff of the clinic were present in addition to the students, and representatives of each group made short speeches appropriate to the occasion. Professor von Leyden was deeply impressed by this unexpected incident, and in acknowledging the compliments paid to him by the various speakers he gave a short history of the progress of clinical medicine since the days when as a student he listened to the clinical lectures of the late Professor Schönlein. Professor von Leyden's successor, Professor His of Göttingen, will enter on his duties at the beginning of the winter semester.

### *The Hospitals of Berlin.*

The hospital accommodation in Berlin has been considerably increased during the last 12 months, especially by the completion of the new Virchow Hospital, containing about 2000 beds. Formerly it was a common occurrence for the daily newspapers to mention that owing to the crowded state of the hospitals it was necessary to refuse patients even when suffering from serious illness, and such patients had to go from one institution to another in search of a vacancy. The Statistical Office has recently published a report on the hospitals for the year 1904. There were then in Berlin 24 public and 68 private hospitals and sanatoriums, containing 9156 beds, each of which was on an average occupied during 298 days per annum. The number of beds had increased by 700 since the year 1903. With respect to the public hospitals, it is stated that 59,842 patients were discharged from them, that 9412 died, and that this relatively high mortality was partly due to the mortality in the infants' department. It must be remarked that the above statistics include only the hospitals of the city of Berlin without the newly opened Virchow hospital, and, of course, without the hospitals in the suburbs. The suburban local authorities have recently done good work in the way of hospital accommodation; some of their hospitals, such as the Charlottenburg and the Schöneberg hospitals, are constructed in complete accordance with modern requirements and their general arrangements are excellent.

### *Sanatoriums for Tuberculosis in Germany.*

According to the report of Dr. Nietner, general secretary of the German central committee for the prevention of tuberculosis, there are at present in Germany 87 public and 35 private sanatoriums for tuberculous patients, a number considerably in excess of those existing in all the rest of Europe. There are also in course of construction 11 sanatoriums containing 800 beds. For tuberculous children there are 17 sanatoriums with 650 beds and for scrofulous children there are 67 with 6092 beds. Finally, 117 Fürsorgestellen (dispensaries), of which 31 are under municipal control according to Putter's system, 67 Walderholungsstätten (places where the patients spend the day, returning home in the evening), and two rural colonies complete the organisation controlled by the committee.

### *Discredited Medical Authors.*[1]

The Union of the German Medical Press at its last meeting decided to compile a register of those authors who receive money for writing articles recommending new chemical compounds and other preparations, this being, of course, done in the interest of the chemical manufacturers concerned. In future the works of these authors will neither be accepted for insertion by the journals belonging to the union nor referred to. The first register has been issued and distributed to the members. The committee of the union hopes by this proceeding to place some restriction on an abuse which is inimical to the interests of the medical press and of the public as well.

August 12th.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

### *Prevention of Venereal Diseases.*

THE National Committee for Preventing the Spread of Venereal Diseases recently held a conference which has been much commented upon. The opinion was expressed that the examination of prostitutes requires to be thorough, as all secretions of gonorrhœal cases must be scrutinised for gonococci after apparent recovery. The segregation of prostitutes in the so-called "bordels" or places under police supervision is strongly condemned, although this system is in full operation in Budapest. No proof is given that any special advantage is obtained thereby, as the factories in which there is so much female labour counterbalance the good. Professor Neisser has asserted that he is inclined to believe that everything that excites the passions or encourages unchastity, such as alcoholic excess, suggestive theatrical performances, and obscene literature, will increase the evil and that more supervision of our factories with perfect isolation of the immoral will go far to reduce it. To prevent the spread of syphilis immediate medical treatment is essential, but whether this should be provided free of charge is doubtful. Róna thinks that every member of the medical profession should have special instruction in all the skin diseases connected with syphilis in order to recognise it early and to check its further spread at once.

### *Surgical Teaching at Budapest.*

Budapest is being resorted to by foreigners for the study of surgery, and this is becoming more evident every year. If those who go to study surgery at Budapest would first take the trouble to find out the conditions which obtain at that centre much vexation could be avoided. When it is remembered that surgeons like Professor Dollinger, Professor Réczey, Professor Herozel, and Professor Navratil have as many as 10 or 12 assistants each and that these gentlemen stand round the operating table, it will be easily understood that the spectators in the theatre reap but little benefit from their view of what is going on. The reason for this great number of assistants is that in Budapest it is not considered unethical to state that fact in a somewhat prominent way on the professional card and door-plate. As a matter of fact, the most advantageous way of studying surgery at Budapest is to take out, under one of the chief surgical assistants, a course of operations on the cadaver. This work is carried out with the personal assistance of the teacher, and in this manner a competent knowledge can be obtained. With regard to gynæcological operations, the best way to secure any return for the trouble and expense of studying at Budapest is to pay for a course of instruction under one of the chief assistants of the gynæcological surgeons, and this secures a welcome in the operating theatre. The amount of material in the hospitals of Budapest attracts a large number of students; but it is well for foreigners to remember that much time can be saved by careful selection of the methods of study.

---

[1] Reference to this valuable and determined action on the part of the Union of the German Medical Press will be found in our report of the recent meeting of the International Medical Press in London.—ED. L.

### *Myopia in Hungarian Schools.*

At a recent meeting of the Hygienic Society a report was read on an inquiry into the subject of myopia in Bihar county. About 2500 children were examined and the results of examination of the various school classes were tabulated. In the first school class the cases of myopia amounted to 12 per cent.; in the second the percentage was 8, in the third 4, in the fourth 3·3, in the fifth 1·8, and in the sixth 0·2, showing a gradually increased percentage with lengthened period of study. The reporter said that the tables demonstrated the great influence of the school in the development of myopia. For a comparison he also examined 560 pupils in private schools, where the well-to-do people send their children to learn. He found that there the percentage of myopia was only 1·4, a proof that the unfavourable conditions prevalent in public schools were the cause of the eye trouble. He observed very little follicular inflammation and never met with trachoma. There was one case of congenital cataract in a boy of 11 years who had been looked upon as idiotic, the ophthalmic affection having completely escaped the notice of the teachers. The school buildings were inspected from a hygienic point of view and condemned. Although newly constructed the seats were of an old-fashioned type and compelled a faulty position of the children sitting on them. The class rooms were comparatively dark, only one-third of the area of one large room receiving direct light from without. The heating of all the schools was also very imperfect and on account of the street noises the ventilation had to be subordinated to the comfort of the occupants of the class rooms.

August 10th.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

### *Assistant Army Surgeons.*

THE recent examination of applicants for the position of assistant surgeon in the army demonstrates the disadvantages under which the Medical Department labours on account of the failure of Congress to approve of measures of reform which would place that service on the same basis as other branches. There is nothing now in the medical service which invites young surgeons to enter it. The rank of the surgeon is inferior and the opportunities for promotion are few and far between. Of 33 candidates who were invited to appear and take the examination only 11 responded. Of these 11 who took the entire examination seven were found qualified, an unusally large proportion of successful candidates in comparison with past experience. There are now 31 vacancies in the junior grade of the Medical Department and the prospects of filling them are less favourable than for many years past.

### *Prohibiting Publicity of Treatment of Sexual or Menstrual Disorders.*

The Legislature of the State of Colorado has passed an Act to protect the public morals by prohibiting the giving general publicity to treatment and devices for the cure or prevention of sexual or menstrual diseases. The law provides that it shall be unlawful for any person, association, partnership, or corporation to circulate, disseminate, spread, print, publish, or cause the circulation, dissemination, spreading, printing, or publication of any public advertisement, announcement, publication, notice, or information of the treatment, alleviation, palliation, cure, or prevention of any sexual or menstrual disease, weakness, or condition. But this Act shall not prevent such publication or dissemination of any such advertisement in exclusively medical publications and publications designed and circulated among dealers as trade journals not designed for public inspection.

### *Progress in the Care and Prevention of Tuberculosis.*

It is a matter of surprise and congratulation that the prevention of tuberculosis and the better care of those suffering from that disease have taken such a deep and abiding hold upon the public mind and conscience. Throughout the entire United States the common people are moving with a determined purpose of exterminating the pestilence. It is interesting to notice the great variety of methods pursued to accomplish this object. In the State of Missouri societies for the prevention of tuberculosis are being formed in every town and all of these societies will be under the direction of a central organisation in order to secure harmony in their operations. The intention of the promoters of this scheme is to unite the entire people of the State in the common object of exterminating the disease in that section. In the State of Maryland a travelling "Tuberculosis Exhibit" has been organised for the general education of the people in the most approved methods of prevention and relief of tuberculosis. Besides showing charts, photographs, pathological specimens and models, the association, which has the management of the exhibit, will provide for lectures with stereopticon views where lanterns are available. In the State of Pennsylvania the immense public forests are about to be given up to the care and treatment of the tuberculous poor, the State providing simple "shaks" at the rate of a dollar per week. In the city of New York an abandoned ferry boat has been moored at a dock and made a very simple day-camp for consumptives. There is a trained nurse in charge with a regular visiting staff of physicians; the number of patients is 50 and the results obtained are in every way most satisfactory. These instances of novel methods of combating the common enemy might be multiplied indefinitely.

### *Military Hygiene in Public Schools.*

In a prize essay Colonel Hoff, of the United States Army, makes the suggestion that the American Red Cross should exert its influence to have the elements of military hygiene taught to boys in the public schools. He states that such teaching would not add much to the course, nor would it make any intellectual demand beyond that which could be met by an average student. Its value would lie in teaching the student how to take care of himself in the field, what to do and what to avoid, and would give him the rules of right living and the reasons under the stress of a campaign. Boys who have learned these facts in early life would enter the military service so enlightened in regard to the best methods of preserving good health that the ordinary camp diseases would disappear. The same writer advises that the colleges and universities should be required to recognise these hygienic studies in their curricula. Especially is this true of the medical colleges which should make an adequate knowledge of military hygiene obligatory not only for the degree in medicine but for the State licences to practise medicine. It seems to Colonel Hoff that it is peculiarly the mission of the Red Cross to secure the reform in education which he proposes.

### *The Insurance Fee Question.*

The final action of the American Medical Association on the question of fees for medical examination in insurance companies was to commit the subject to the State and county societies for such action as they may deem wise and proper. Heretofore, each physician was to fix the fee in each individual case as he might deem proper and the result was that there was no uniform charge on the part of the profession for these services. The insurance companies took advantage of this condition and succeeded in reducing the fee in many instances to a ridiculous figure. The recent action of the association makes it incumbent for local medical societies to fix the fees, and thus there will be uniformity of rates in each State or county.

August 3rd.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *Hospital Affairs.*

THE annual meeting of the friends and supporters of the Queen Victoria Homes for Consumptives of New South Wales was held on May 27th, the State Governor presiding. In the report it was stated that at the King's Tableland Home the daily average number of beds occupied was 45 and that the total number now available was 48. The daily average at the Thirlmere Home was 30 and the number now available was 31. Of 55 patients discharged, 46 were improved, five were unimproved, and four died. The average residence of discharged cases was 222 days. At King's Tableland 101 cases had been admitted to the Home and 100 had been discharged. Most of the patients had followed indoor trades and occupations. The treatment adopted in all cases was the open-air or sanatorium system on the principles laid down by Bodington, Brehmer, Dettweiler, and Walther. Wright's method of calculating the specific resistance to the bacillus by means of the opsonic index had recently received attention and observations on this method were now being carried out at the home. Increase of weight occurred in 91 per cent. of the cases treated, the amount added varying from 1 to 36 pounds and averaging 14 pounds each. The average increase in 55 arrested cases was 16 pounds.—The Premier of New South Wales has decided to comply with the request of a deputation from the Alexandra Hospital for Sick Children, Sydney, for a grant of £2000 to meet current expenses and for a sum of £5000 towards erecting nurses' quarters being placed on the next estimates. He is also prepared to increase the amount on the estimates which may be earned annually as £ per £ subsidy from £2000 to £4000, provided the hospital continues the supervision of State children taken to the hospital for survey and will admit for treatment any among them who require it.—A vacancy has occurred in the position of honorary indoor surgeon at the Royal Prince Alfred Hospital, Sydney, owing to the completion of the term of service of Mr. C. P. B. Clubbe. Applications are invited for the post.—Mr. S. A. Ewing has been appointed specialist for diseases of the ear and throat at the Alfred Hospital, Melbourne, in succession to the late Dr. J. Cox.

### *Care of Inebriates.*

The Victorian Government has completed arrangements for establishing an inebriate home at Lara, a small agricultural village some 36 miles from Melbourne, which was opened on July 1st. The New South Wales Government, on the other hand, has abandoned the project of establishing inebriate homes in the islands in the Hawkesbury River and has not yet made provision for imprisoning confirmed drunkards in the Darlinghurst Gaol, as it proposed in lieu thereof.

### *Friendly Societies and the Medical Profession.*

The eighteenth annual meeting of the Friendly Societies' Association of New South Wales was held in Sydney when the annual report stated that the membership of the 18 affiliated societies was 101,463. The total funds stood at £960,668. The amount of sick pay paid was £83,375 and the amount paid for funeral benefits was £24,049. Other figures were: amount paid for medical benefits, £87,465; total receipts, £390,465; total expenditure, £314,491; increase of income over expenditure, £75,974; and interest earnings, £34,324. The figures were described to be "indicative of a healthy condition, though not yet equal to the figures of Victoria and New Zealand." The report further stated that the relations existing between the medical fraternity and the friendly societies were assuming proportions inimical to the best interests of the societies and that the publication of the form of agreement with the friendly societies, as finally adopted by the council of the British Medical Association, "put a kind of cap upon everything." At the request of this Association a conference was arranged and after two sittings its business had been determined. The proposed agreement comprised some ten sections and several subclauses. The final paragraph in the agreement where the wage limit came in was the rock upon which it was supposed the conference would materially differ. The medical officers were resolute for a wage limit to be fixed at the rate of £200 per annum. The friendly societies' representatives were equally opposed to any wage limit. Finally a compromise was arrived at, to be referred to the various societies, as follows: first, the adoption of the principle of the £200 wage limit at joining; secondly, subsequently to joining the wage limit to be increased to £300; and thirdly, members earning above £300 to be debarred from medical attendance; this wage limit not to be retrospective. The report was adopted. The honorary secretary urged the societies to see that they were not taken by surprise by the medical men. He was strongly opposed to the wage-limit, especially in country districts. He also said that in the metropolis opposition to the British Medical Association was being organised, a new society of medical men being formed, to be known as the "Australian Medical Association."

### *Strychnine in Mistake for Quinine.*

A woman at Wallsend, New South Wales, has died suddenly after taking a powder supposed to be quinine. The Government analyst deposed that the packet labelled quinine consisted wholly of strychnine hydrochlorate and the stomach of the deceased woman contained strychnine. A son of the deceased deposed to purchasing the quinine and seeing the druggist write the label. He carried it straight to his mother, who then took some of the powder. The druggist who dispensed the powder admitted that the packet came from his shop and that the label was in his writing. He maintained that when it left the shop the packet contained quinine only. He could not possibly have dispensed strychnine hydrochlorate as he never had it in the shop, except in solution for dispensing purposes. The inquest lasted six days. In the result the coroner said that the druggist must be held responsible and accordingly committed him on a charge of manslaughter.

### *Poisoning by Carbon Monoxide.*

An inquest was held in Sydney into the death of a woman who was found dead in her bed. It was shown that an escape of gas had occurred. The Government analyst stated that the gas supplied by the Australian Gas Light Company contained over 11 per cent. of carbon monoxide on account of the addition of water gas, while the percentage in English coal gas was about 6 per cent. The carbon monoxide being odourless was very dangerous to life when an escape occurred. Dr. A. A. Palmer said that the cause of death was poisoning by carbon monoxide and the excessive percentage of it in the illuminating gas accelerated the death.

### *Action for Malpraxis.*

Dr. W. Trethowan of Perth, Western Australia, was recently defendant in an action in the Supreme Court of Western Australia and won the case. The plaintiff alleged that he sent for Dr. Trethowan to attend his son. Dr. Dawson, Dr. Trethowan's assistant, came and said that the boy had influenza. Subsequently Dr. Trethowan attended and advised his removal to hospital, where he died from typhoid fever. The patient was differently treated in the hospital. Mr. G. Cuthbert was called for the plaintiff and said that he had been subpœnæd against his will. He had been told by the counsel for the plaintiff that a certain medical man had made certain statements and he was asked to bear them out. He replied that he could not do so with truth. The judge expressed surprise at a medical man being dragged into the witness-box in such a manner. Dr. Stewart and Dr. Tafe were called but failed to respond and the case for the plaintiff closed. For the defence Dr. Dawson said that when he first saw the boy he thought that the illness was influenza, but subsequently found that it was typhoid fever. He then advised removal to hospital but the boy's mother objected. Dr. Trethowan said that when he saw the boy he regarded the case as one of typhoid fever and urged removal to hospital. The judge said that there was not a particle of evidence to show that Dr. Trethowan was either negligent or unskilful, and the jury completely exonerated both Dr. Trethowan and Dr. Dawson.

July 15th.

# Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates satisfied the examiners:—

### PRELIMINARY SCIENTIFIC EXAMINATION.

### PART I.

*Inorganic Chemistry, Experimental Physics, and Biology.*—William Daniel Arthur, Cardiff Intermediate School; Joe Edward Ashby, Epsom College; Vicente Atienza, Guy's Hospital; Cuthbert H. Attenborough, King's College; William Rawson Barlow, Middlesex Hospital; Grantley Barratt, London Hospital; Thomas Izod Bennett, Guy's Hospital; William Butterfield, South-Western Polytechnic; Thomas Philips Cole and David Arwyn Davies, Guy's Hospital; Isaac Milton Davies and John Prosser Davies, University College, Cardiff; Richard Denis Davy, London Hospital; Minnie Constance Dence, London (Royal Free Hospital) School of Medicine for Women; Macormack Charles F. Easmon, Epsom College; William Henry Edmunds, University College, Cardiff; George

Ernest Elkington, University of Birmingham; Abraham Solomon Erulkar, Guy's Hospital; Maud Frances Forrester-Brown, London (Royal Free Hospital) School of Medicine for Women; John Torbet Smith Gibson, St. Mary's Hospital; Marjory Winifred Godden, London (Royal Free Hospital) School of Medicine for Women; Thomas Chivers Graves, Royal Veterinary College; Olive Gertrude Mary Gray, London (Royal Free Hospital) School of Medicine for Women; Geoffrey Hadfield, Plymouth Technical Schools; Thomas Edwin Hammond, Cheltenham College and private tuition; Cecil Rhodes Harrison, St. Mary's Hospital; Philip Henry Henson, Epsom College; Bernard Whitchurch Howell, St. Bartholomew's Hospital; Frederic James Humphrys, St. Thomas's Hospital; John Cecil Jefferson, Victoria University of Manchester; Cecil Meredyth Jones, Cardiff Municipal Secondary School and private study; William Henry Kauntze, Victoria University of Manchester; Skene Keith, Guy's Hospital; Andrew Carey McAllister. King's College; John Finlayson Mackenzie, Guy's Hospital; Melville Douglas Mackenzie, Epsom College; Thomas Hartley Martin, University of Liverpool; William Matthews, Guy's Hospital; Philip Henry Mitchiner, St. Thomas's Hospital; John Forbes O'Connell, Epsom College; Charles Cyril Okell, private tuition; William David Owen, University College, Cardiff; Donovan Blaise Pascall, St. Bartholomew's Hospital; Richard Douglas Passey, Guy's Hospital; Cecil Joseph Herbert Pearson, London Hospital; William Agard Pocock, Cheltenham College; Arthur Leslie H. Rackham, Epsom College; Sidney Bertram Radley, Victoria University of Manchester; Noel Ravenchil Rawson, London Hospital; James Ewen Robertson-Ross, Epsom College; Samuel Pryce Rowlands, University College, Cardiff, and Tutorial School, Penarth; George William Shore and Sidney Smith, King's College; Douglas Benham Spence, Epsom College; William Steuart, St. Bartholomew's Hospital; Robert Swyer, London Hospital; Albert Joseph Tonkinson, West Bromwich Municipal Secondary School; Thomas Burges Welch, St. Mary's Hospital; Eva Muriel White, Bedford College; Cecil Leonard Williams, Plymouth Technical Schools; Thomas Davies Williams, London Hospital; and Edward Alfred Wilson, Middlesex Hospital.

*Inorganic Chemistry and Experimental Physics.*—Oscar Newrick William Brown, King's College and Westminster Hospital; George Rowland Dobrashian, Bootham School; *George Edward Genge-Andrews, Guy's Hospital; *Douglas Medlicott Gibson, St. Thomas's Hospital; *Melville Hocken, London Hospital; Richard Orthin Hilton Jones, Guy's Hospital; *James Duncan Lyle and *Harrold Winnock Parrott, London Hospital; *Cresswell Lee Pattison, St. Mary's Hospital; George Harold Pearson, London Hospital; Frederick Harold Rees, Cardiff Intermediate School; Arthur Leonard Shearwood, Whitgift Grammar School, Croydon; William Simpson, St. Bartholomew's Hospital; Winifred Christian Squires, London (Royal Free Hospital) School of Medicine for Women; Harold Eustace Thorn, St. Paul's School; and Frederick Edward Saxby Willis, Dulwich College.

*Inorganic Chemistry and Biology.*—Arthur Ernest Bullock, St. Paul's School; ‡Charlotte Grace Judge, London (Royal Free Hospital) School of Medicine for Women; Edward Athol Clarence Langton, Epsom College; Claude John Burgoyne Pasley, King's College and Westminster Hospital; and ‡Walter Salisbury, University College, Bristol.

*Experimental Physics and Biology.*—Edward Smith Abraham, University College, Bristol; Edward Bach, University of Birmingham; Henry Washington Batchelor, Berkhampsted School; Raymond Brewitt-Taylor, St. Bartholomew's Hospital; John Lloyd Davies, University College, Cardiff; John Yerbury Dent, King's College; Joseph De Silva, St. Mary's Hospital; Pattie Ruth Elliott, University College, Nottingham; Abel Evans, University College, Cardiff; William Stanley George, Guy's Hospital; Mary Isabel Hemingway, Ladies' College, Cheltenham; John Higgins. London Hospital; Charles Eric Sweeting Jackson, St. Mary's Hospital; George Battersby Jameson, Victoria University of Manchester; Gwilym Rhys Pennant and Thomas Harold Phillips, University College, Cardiff; Reginald Norman Porritt, Epsom College; †William Barwise Sauders, University Tutorial College; Aubrey John Colby Tingey, University of Liverpool; and James Vaughan-James, University College, Cardiff.

*Inorganic Chemistry only.*—‡Francis Dighton Annesley, Guy's Hospital; Lancelot Gerard Bourdillon, Tonbridge School; ‡Israel Feldman, City of London School; *†Leonard S. Kempthorne, University College; Horace Mather, Cheltenham College and Guy's Hospital; *Francis Henry Balfour Percival, St. Bartholomew's Hospital; and Arthur Richard Sharrod and Joseph Alexander Tsoi-A-Sue, London Hospital.

*Experimental Physics only.*—*Mabel Kate Bishopp, London (Royal Free Hospital) School of Medicine for Women; †George James Bowen and Frederick William Theodore Clemens, University College, Bristol; *†Ardeshir Koyaji Contractor, University College and Grant Medical College, Bombay; *†Cyril Ernest A. Goddard, University College; *†Philip Withers Green, St. Mary's Hospital; Allen Coulter Hancock, Plymouth College and Technical Schools; *†Stuart Leighton Heard, London Hospital; *†Thomas Herbert Holroyd, University of Birmingham; *†George William Blomfield James, Derby Municipal Technical College; Leslie Mordaunt Ladell, London Hospital; Ronald Guy Lyster, Berkhamsted School; *†Margaret Josephine McEnery, Birkbeck College and University Tutorial College; Henry Ray Parsloe, Plymouth Technical Schools; Alexander Frederic Potter, St. Thomas's Hospital; Frederick John Rayner Simpson, King's College; Charles Marshall Stailard, Victoria University of Manchester; †Rupert Edward S. Waddington, St. Bartholomew's Hospital; *†Godfrey Alan Walker, Birkbeck and Epsom Colleges; *Honoria Josephine Wallace, University Tutorial College; and Francis Clark Watson, University of Leeds.

*Biology only.*—Edward Nettleton Balme, St. George's Hospital; Kenneth Dobing Bean, University of Leeds; †‡Andrew John Chillingworth and Percival Courtney Cole, St. Bartholomew's Hospital; Rolf Creasy, Guy's Hospital; Gertrude Dearnley, London (Royal Free Hospital) School of Medicine for Women; †‡David Marcus Hanson, University College; Adolph Gottlob Hieber, University College, Bristol; Edward Sancton Walls Hirsch, St. Mary's Hospital; †‡G. Barrowclough Horrocks, Victoria University of Manchester and private study; †‡Francis Harry Kelly, Middlesex Hospital; William Leslie, University Tutorial College; William Guy Lidderdale, University of Durham; Reginald Walter Little, University College, Cardiff; †‡Ernest Mannering Morris, Whitgift Grammar School, Croydon; George Vandeleur Ormsby, and Stylianos George Papadopoulos, St. Bartholomew's Hospital; Guy William Parry, University College, Cardiff; †‡H. T. Ratallack-Moloney, London Hospital; Eric Graham Saunders, St. Thomas's Hospital; †‡Maitland Scott, Guy's Hospital; Julian Taylor, University College; and †Edgar William Whiting, St. Bartholomew's Hospital.

* Already passed in Biology.
† Already passed in Inorganic Chemistry.
‡ Already passed in Experimental Physics.

### PART II.

*Organic Chemistry.*—George Stanley Applegate, University College, Bristol; Edward Alfred Barker, Guy's Hospital and University College, Bristol; Thomas Beaton, University College, Cardiff; Cyril Carlyle Beatty, London Hospital; Alured C. L. O'S. Bilderbeck, St. Bartholomew's Hospital; Sydney Guy Billington, University of Birmingham; Gilbert Alan Blake, Guy's Hospital; George Francis Bradley, London Hospital; Gertrude Brooks, London (Royal Free Hospital) School of Medicine for Women; Arthur Barrett Cardew, Middlesex Hospital; Albert James Clarke, St. Bartholomew's Hospital; Irene Nancy Clough, London (Royal Free Hospital) School of Medicine for Women; John Warren Clouston, London Hospital; John Henry Cobb, University of Sheffield; Ardeshir Koyaji Contractor, University College and Grant Medical College, Bombay; Frank Cook, Guy's Hospital; Herbert William Cooke, University College, Bristol; Arnold Charles S. Courts, University College; Herbert Davies, University College; James Anthony Delmege, Guy's Hospital; Gertrude Margaret Dobrashian, London (Royal Free Hospital) School of Medicine for Women; Thomas Peters Edwards, St. Bartholomew's Hospital; Basil Franklin Eminson and Ralph Franklin Eminson, Charing Cross Hospital; David Benjamin Evans, University College, Cardiff; Eric Alfred Charles Fazan, Middlesex Hospital; James Maurice Foord. University of Leeds; James Rocheid Forrest, private study; William Charles Fowler, University College; Vincent Glendining, Guy's Hospital; Wilfrid Montague Glenister, St. Bartholomew's Hospital; Abdul Hamid Gool, Guy's Hospital; Alexander Keith Hamilton, University of Liverpool; Frederick Wood Hamilton, Middlesex Hospital; Reginald Gordon Hill, St. Bartholomew's Hospital; Robert Hamer Hodges, King's College; George Ashby Hooton, St. Bartholomew's Hospital; Herbert Leslie Hopkins, Guy's Hospital; Charlotte Leighton Houlton, London (Royal Free Hospital) School of Medicine for Women; Christopher Martin Ingoldby, London Hospital; James Moncrieff Joly, Cheltenham College and Guy's Hospital; Duncan Ince Jones, University College; Charles Dones Killpack, Guy's Hospital; Leon Levene and William Howard Lister, University College; Martin W. Littlewood, St. Thomas's Hospital; Joseph Howell Lloyd, private study; Gerald Roche Lynch, St. Mary's Hospital; Roy Kyffin Mallam, London Hospital; Geoffrey Marshall, Guy's Hospital; Henry Linnington Martyn, King's College; Pestanji Manekji Másiná, University College; Charles Edward Hamilton Milner, King's College; Patrick John Monaghan, Guy's Hospital; Harold Arundel Moody, King's College; John Grimson Moseley, London Hospital; Clement Treves Neve, St. Bartholomew's Hospital; Alfred Arthur Edmund Newth, Kings College; Joan Fraser Parker, London (Royal Free Hospital) School of Medicine for Women; Bernard Rayne Parmiter, Guy's Hospital; Hubert Charles George Pedler, University College; Sara Louisa Penny, London (Royal Free Hospital) School of Medicine for Women; James Potter, London Hospital; Camilo Antonio Prada, St. Bartholomew's Hospital; William James Aitkin Quine, private study; Edward Gordon Reeve, Guy's Hospital; George FitzPatrick Rigden, King's College and Westminster Hospital; Stanley Ritson, King's College; Ffrangcon Roberts, Epsom College; Russell Rodgers, Guy's Hospital; Frederic Sanders, London Hospital; William Henry Price Saunders, Epsom College; Edward Gustave Schlesinger, Guy's Hospital; Charles Frank Schuler, St. Thomas's Hospital; Emmanuel Prinski Scott and William Geoffrey Shaw, London Hospital; Francis Robert Bradley Skrimshire, St. Thomas's Hospital; Geoffrey Troughton Smith, Guy's Hospital; Reginald Gershom Sparkes, St. Mary's Hospital; Ernest Gerald Stanley, St. Bartholomew's Hospital; James Lennox Stewart, Guy's Hospital; Ludwig Siebert Benjamin Tasker, University College; Horatio Thomas, University College, Cardiff; Francis Richard Todd and John Tremble, St. Bartholomew's Hospital; Arthur Bayford G. Underwood, University College; William Henry Vincent, St. Mary's Hospital; Richard Trevor Vivian, St. Bartholomew's Hospital; Michel Demètre T. Vlasto, University College; Harry Bertram Walker, London Hospital; Joseph Stephen Wallace, University College; George Edgar Septimus Ward, Middlesex Hospital; Harold Percy Warner, Guy's Hospital; Harvey H. Vincent Welch, St. Thomas's Hospital; and Horace Richard Wilson, Dalston Technical College and Paddington County Council Technical Laboratory.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

A new course on school hygiene, including lectures, demonstrations, and practical work, has been arranged to begin on Oct. 16th at University College. The course will be given by Professor Henry R. Kenwood and Dr. H. Meredith Richards. It is designed to meet the requirements of school teachers, school lecturers, and those qualifying for school inspectorships and for school medical officers. A certificate of proficiency will be granted to those who qualify themselves.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Victor Schmieden has been recognised as *privat-docent* of Surgery.—*Budapest:* Dr. Eugen Kollarits has been recognised as *privat-docent* of Neuropathology.—*Erlangen:* Dr. Oskar Schulz, *privat-docent* of Physiology, has been granted the title of Extraordinary Professor.—*Giessen:* Dr. Dannemann, *privat-docent* of Psychiatry, has been promoted to an Extraordinary Professorship.—*Geneva:* Dr. R. de Seigneux, *privat-docent* of Midwifery and Gynæcology, has been promoted to an Extraordinary Professorship.—*Heidelberg:* Dr. Georg Herschel has been recognised as *privat-docent* of Surgery.—*Marburg:* Dr. R. van der Velden has been recognised as *privat-docent* of Anatomy.

**PRESENTATION TO A MEDICAL PRACTITIONER.**—Mr. Ivor Henry Davies, L.R.C.P. & S. Edin., L.F.P.S. Glasg., was entertained at dinner at the Porth Hotel, Porth, Glamorganshire, on July 31st, and was afterwards presented with an address, three silver fruit stands, and a bon-bon dish, as a mark of respect and esteem on the occasion of his leaving Porth.

**CLEANLINESS OF THE MILK-SUPPLY IN CARDIFF.**—It is gratifying to find that the public generally are beginning to realise that where milk is produced there must be cleanly surroundings. The model regulations under the Dairies, Cowsheds, and Milkshops Order require that, at the time of milking, the udder and teats of a cow shall be thoroughly clean and for neglecting to carry out this regulation a woman was recently fined 40*s.* by the stipendiary magistrate at Cardiff.

**THE WEST AFRICAN MEDICAL STAFF.**—The promotions of the following officers take effect from the dates given: Mr. W. H. Langley, C.M.G., principal medical officer in the Gold Coast from August 3rd; Mr. J. P. Fagan, deputy principal medical officer in Northern Nigeria from August 3rd; and Dr. St. G. Gray, senior medical officer in Southern Nigeria from April 19th. Dr. M. Cameron Blair, medical officer in Northern Nigeria, is promoted to be senior medical officer in Southern Nigeria from August 3rd. Dr. J. B. Tombleson, medical officer in Southern Nigeria, resigns his appointment on the ground of ill-health from August 7th. The following gentlemen have been appointed to the staff: Mr. P. F. Foran, Southern Nigeria, June 8th; Mr. W. A. Trumper, Northern Nigeria, June 29th; Mr. W. F. Todd, Sierra Leone, August 3rd; Mr. F. C. Hepburn, Southern Nigeria, August 10th; Dr. H. S. Coghill, Southern Nigeria, August 17th; and Mr. T. R. Beale-Browne, Southern Nigeria, August 17th.

**THE JAMSETJEE JEEJEEBHOY HOSPITAL NURSING ASSOCIATION.**—We learn from an article in the *Times of India* of July 6th that the committee of the Jamsetjee Jeejeebhoy Hospital Nursing Association, Bombay, has just published its report for 1906 and judging by the information supplied in our contemporary the document is evidently an unassuming record of good work performed under exceptional difficulties. In October last 18 members of the nursing staff, or about 20 per cent. of the total number, were simultaneously laid up with typhoid fever. Instead of nursing they had to be nursed, but, thanks to the devotion manifested by the remainder of the staff, the ordinary work of the establishment did not suffer to any great extent. In spite of this mischance the committee is able to announce an important extension in the nursing of the hospital. Several wards which formerly were looked after by native ward-boys and ayahs have now been placed under the supervision of trained nurses. This completes the nursing of the main hospital as well as of the extra Parsi ward. The committee also hopes to be soon able to deal with the eye and out-patients' departments and is drawing up proposals to this end for submission to Government. One of the things it has kept steadily in view is the training of native Indian nurses, Parsi and Hindu, who when fully trained are so much in demand by the general public that they command salaries which their teachers cannot afford to equal. Hitherto one of the chief troubles the committee has had to contend with has been the housing of the probationers, but the "Wadia Home for Nurses" is now approaching completion and will be ready for occupation next May. This home has been well designed and is substantially built, but before it can be used furniture must be procured at a cost of Rs. 15,000. To meet this the Government has granted Rs. 7500; for the balance the committee has to depend on "the philanthropic public of Bombay." No doubt the money will be forthcoming, as well as any additional sums that may be required. The Wadia home will not be able to accommodate the whole of the nursing staff of the Jamsetjee Jeejeebhoy Hospital. At present 28 nurses are living in a house which was acquired for the purposes of hospital extension. When it is razed, as must very soon be the case, accommodation will have to be found elsewhere. It is to be hoped that such devoted sick attendants will not be left homeless.

**MEDICAL MAGISTRATE.**—The name of Mr. Graham William White, L.D.S.R.C.S. Irel., has been added to the commission of the peace for the borough of Newport (Mon.).

**UNIVERSITY COLLEGE, BRISTOL.**—A Treasury grant of £4000 has been awarded to University College, Bristol.

**DEATHS OF EMINENT FOREIGN MEDICAL MEN.**—The deaths of the following eminent foreign medical men are announced:—Dr. Mikhael Radkevich, *privat-docent* of therapeutics in the University of Moscow.—Dr. Frederick R. Weber, professor of medicine in the Milwaukee Medical College.—Dr. Schlagdenhauffen, formerly professor of toxicology and of physics in Nancy.—Dr. Willoughby D. Miller, professor of odontology in the Ann Arbor University, Michigan. He was a medical graduate of Berlin and was well known both in Germany and in America on account of his bacteriological researches in connexion with the mouth and teeth. He also published a work on Conservative Dentistry.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *The Physical Condition of Glasgow Children.*

AN important report made by Dr. W. LESLIE MACKENZIE (medical member of the Local Government Board for Scotland) and Captain A. FOSTER (inspector of physical training) on a collection of statistics as to the physical condition of children attending the public schools of the School Board for Glasgow has been printed as a Parliamentary blue-book. The tables and diagrams on which the report is based have been compiled with the coöperation of the teachers in 73 primary and higher-grade schools in Glasgow grouped in four divisions according to the character of the districts in which they were situated. Returns were made for 72,857 children, of whom 36,883 were boys and 35,974 were girls. Dr. MACKENZIE and Captain FOSTER state that this is the most extensive investigation ever undertaken in Britain as to the heights and weights of school children in primary and higher-grade schools. The tables and diagrams may legitimately be held to be a provisional standard for future investigations.

### *The Public Health Bill.*

A committee of the House of Lords, including the Duke of NORTHUMBERLAND, the Earl of ONSLOW, the Earl of DONOUGHMORE, Lord FITZMAURICE, and Lord ALLENDALE has been appointed to examine the clauses of the Public Health Bill.

## HOUSE OF LORDS.

### THURSDAY, AUGUST 8TH.

### *The Vaccination Bill.*

THE House went into committee on the Vaccination Bill.

Lord BALFOUR of BURLEIGH moved an amendment to the effect that the obligation of making the statutory declaration required by the Bill in order to obtain exemption should in the first instance rest upon the father of the child. He pointed out that the amendment would restore the Bill to the form it was in when it was originally introduced. An amendment extending the right of making a statutory declaration of objection to each parent was subsequently introduced in the Standing Committee of the House of Commons, but on that occasion it was strongly opposed by Mr. Burns and Dr. Macnamara, the representatives of the Local Government Board.

The Earl of CREWE resisted Lord Balfour's amendment. The fact that either parent might make the statutory declaration would conduce to the convenience of parties availing themselves of the Bill.

On a division the amendment was carried by 30 votes to 25.

The Bill was reported to the House.

### *Butter and Margarine Bill.*

The House also considered the Butter and Margarine Bill in Committee.

Earl CARRINGTON moved a new clause to give the Local Government Board power after inquiry to make regulations to prohibit the use of preservatives which they thought undesirable or to limit their use in the preparation and sale of butter, margarine, or milk-blended butter.

The new clause was agreed to.

The Bill was ultimately reported to the House.

### FRIDAY, AUGUST 9TH.

*Vaccination (Scotland) Bill.*

The Vaccination (Scotland) Bill was read a third time and passed.

## HOUSE OF COMMONS.

### WEDNESDAY, AUGUST 7TH.

*An Irish Dispensary Appointment.*

Mr. VINCENT KENNEDY asked the Chief Secretary to the Lord Lieutenant of Ireland to state why the Local Government Board refused to sanction the appointment of Dr. Clarke as temporary medical officer for the Bellananagh dispensary district; how near to this district did Dr. Clarke reside; had Dr. Clarke at present any dispensary; who had been in charge of this district for the past three months, and what appointments did he hold, distinguishing those which were temporary from the permanent appointments; and would this matter have his special attention in the interest of the sick poor of the district.—Mr. CHERRY (the Attorney-General for Ireland) replied: The appointment of Dr. Clarke as temporary medical officer for the Bellananagh dispensary district was objected to on the ground that his residence was outside the dispensary district and was inconvenient for the sick poor. The nearest point to the dispensary district was about three miles and the most remote nine miles from Cavan where Dr. Clarke lives. The Local Government Board has not sanctioned the appointment of Dr. Clarke as medical officer for any dispensary district. Dr. Clarke has been acting as temporary medical officer for the Bellananagh dispensary district since June 18th last but without sanction of the Board. He has also been appointed as temporary medical officer of the Kilnaleck and Stradone dispensary districts, but the Board has had to object to these appointments on the same grounds. The guardians by their action in continuing to employ Dr. Clarke may render themselves liable to surcharge for any payments they may make for his salary. Dr. Clarke has further been appointed as temporary medical officer to the Cavan workhouse from August 7th to Sept. 4th and to this appointment the Board has given its sanction.

### THURSDAY, AUGUST 8TH.

*Enteric Fever at Bulford Camp.*

Mr. LONG asked the Secretary of State for War whether he could state how many outbreaks of typhoid fever had occurred at Bulford Camp and at what intervals; how many cases had resulted fatally; and what steps he proposed to take to protect the lives of officers and men from the grave risks to which they were exposed.—Mr. HALDANE replied: Since 1900 there have been 16 cases of enteric fever among the regular troops at Bulford—two in 1903, three in 1904, three in 1905, and eight in June, 1907. None of the cases were fatal. As regards the auxiliary forces, of whom 45,000 were encamped at Bulford in 1906, there were nine cases in the Honourable Artillery Company of which it is understood two proved fatal. Full investigations were carried out by specialist sanitary officers in the case of the outbreaks in 1904, 1906, and 1907, and though no definite cause for the origin of the disease can be traced, in each instance the available evidence pointed to the introduction of the infection from without and not to any defect in the camp area. The medical and sanitary arrangements of the camp are supervised by the principal medical officer of the Southern command and the administrative medical officer to the Tidworth district, who have the assistance of a specially qualified sanitary officer in dealing with the prevention of infectious disease amongst the troops.

*Milk Carriage in Ireland.*

Mr. HALPIN asked the Vice-President of the Department of Agriculture (Ireland) whether he would inquire into the railway system for carrying milk, seeing that the railway van was at present the only means by which long-distant milk could be conveyed from the producer to the public; whether he was aware that in some cases the van was dirty and ill-ventilated, and that along with the milk were carried hides, carcasses of meat, and live fowls; and whether he would use his influence with the railway companies to have milk carried in pure milk vans.—Mr. T. W. RUSSELL (in a written answer) replied: If by "railway van" is meant the guard's van the department is not aware that this is the only kind of vehicle by which milk is conveyed over long distances. The transit inspectors of the department have instructions to report any cases which come under their notice of milk being carried in dirty vehicles or with articles likely to taint it, and in any such reported cases the matter is taken up with the carrying company concerned. If specific instances are brought under the notice of the department they will have full inquiry made.

### MONDAY, AUGUST 12TH.

*Medical Inspection of School Children.*

The House in dealing on report with the Education (Administrative Provisions) Bill considered the clause with respect to the medical inspection of school children.

Sir HENRY CRAIK moved an amendment that the local authorities should direct a medical inspection to take place where required by the Board of Education. The burden of carrying out a medical inspection was one which the Government should not place on the local authorities without taking a large share both financially and in scientific direction. If the Government were to press the clause forward let them bring forward a detailed scheme.

Mr. E. CECIL seconded the amendment.

Mr. MCKENNA hoped that the amendment would not be pressed. It was the intention of the Board of Education to establish a medical branch for the purposes of guiding the local authorities in the new work they would have to undertake. The formation of that branch had been occupying the attention of the Board for some time past. Its duties would be to collect information, collate it, and to give such instructions to the local authorities as would enable them to carry on their duties under the clause.

The amendment was negatived without a division.

Sir P. MAGNUS moved an amendment to give the local authorities powers to institute a system of periodic measurement of the children which would afford definite information on their physical condition and development. He emphasised the fact that what he proposed was of an optional character. He did not want to detain the House by enlarging on the great value of the information that would be supplied by an anthropometric measurement of school children. Its value had been pointed out at the Hygiene Congress and at the British Association. It would give them information to know whether physical deterioration was going on, and in this connexion he would draw the attention of the House to the valuable report on the condition of school children in Glasgow which had been made by Dr. Mackenzie and Captain Foster. The results which they had arrived at were of very great importance. They were almost startling, for they showed conclusively that the weight and height and physical condition of children depended absolutely on the conditions of the homes in which they were brought up.

Mr. BUTCHER seconded the amendment. He said that what they wanted was to get at some scientific basis of knowledge as regarded the laws of health affecting, above all, the population of great towns.

Mr. MCKENNA thought that the words of the clause covered the objects which the honourable gentleman had in view. They were covered by the words "attending to the health and physical condition of the children." If the amendment were not covered by the words of the clause it would impose a burden on the public funds and was therefore by the rules of the House out of order.

The amendment was negatived without a division.

The Bill was subsequently read a third time.

### TUESDAY, AUGUST 13TH.

*The Post Office Medical Department.*

Mr. HUNT asked the Postmaster-General whether his attention had been called to the report of the Select Committee on Post Office Wages, paragraphs 43 to 47; whether the officer of the post office thus mentioned had since giving his evidence before the select committee been given a considerable increase to his salary; whether he would state the reasons leading to the additional emoluments being paid to this official after tendering such evidence; and, in view of the report, what steps were to be taken to insure efficient service in the post office medical department.—Mr. SYDNEY BUXTON (by written answer) replied: I have read the paragraphs referred to. As the honourable Member was informed, in reply to a question asked in this House on April 29th last, the increase in the salary of the chief medical officer was authorised, before he gave evidence before the committee, on the ground that the salary was not considered to afford adequate remuneration for the duties of the post. The recommendations of the select committee will receive the most careful consideration.

*Lunatics in London Workhouses.*

Mr. COOPER asked the President of the Local Government Board whether he could state the number of men and women, giving the number of each sex, who were detained in the London workhouses as harmless lunatics on account of senile decay or imbecility; if he could state whether any children and, if any, how many, were detained in the London workhouses because of imbecility or idiocy; whether he was aware that no child under five years of age could be admitted into one of the imbecile asylums of the Metropolitan Asylums Board; and whether he would consider the desirability of altering this regulation.—Mr. JOHN BURNS furnished the following written reply: The number of the insane in the London workhouses on January 1st last was 322, of whom 159 were men, 149 women, and 14 children. The nature of the lunacy from which these persons were suffering is not specified in the returns. The rule that children under five years of age should not be admitted into the institutions of the Metropolitan Asylums Board for imbecile children was made because it was felt that a trustworthy judgment cannot be formed as to the intellectual condition of very young children. The Local Government Board have, however, intimated to the managers that they would favour arrangements for the reception of children of the kind in question in such a way that they might be carefully observed by an expert before being finally drafted into an asylum.

*The Plague Statistics.*

Mr. REES asked the Secretary of State for India whether the deaths from plague in June last amounted to more than 0·2349 per mille; and whether the like figure for the six months ended June amounted to more than 3·6 per mille of the population of India; what were the losses from cholera and fever and other chief epidemics for the same period; whether the like figures were available in respect of other parts of Asia of more or less similar climatic conditions; and, if so, whether he would lay them before the House.—Mr. MORLEY replied: The honourable Member has correctly stated the mortality from plague in India as a whole during June last and the six months ending June respectively. I am unable to give the corresponding figures for other epidemic diseases, as the mortality from them is not reported month by month to me. In 1905, the latest year for which complete figures for British India are available, the mortality rates for cholera, small-pox, and fevers were 1·97, 0·32, and 19·74 per mille respectively. I have no information that would enable me to reply to the last part of the question.

### WEDNESDAY, AUGUST 14TH.

*The Administration of the Vaccination Bill.*

Sir WILLIAM COLLINS asked the President of the Local Government Board whether, in the event of the Vaccination Bill, 1907, passing into law, he would at once direct that revised notices to be given by registrars of births to persons registering the births of children containing the form of statutory declaration set out in the Schedule to the Bill, should be supplied to registrars of births in the month of September so as to enable persons desirous of taking advantage of the Act in January, 1908, to be provided with the necessary forms in respect of children born within four months of the passing of the Act.—Mr. JOHN BURNS (by written answer): I am aware that a new form of notice by registrars to persons registering the birth of children will be necessary in the event of the passing of the Bill. I am considering how far it may be practicable to meet the point suggested by my honourable friend.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASH, EDWIN L., M.B. Lond., M.R.C.S. Eng., has been appointed Clinical Assistant at the Great Northern Central Hospital, London.

BATTERSBY, JAMES, F.R.C.S. Eng., has been appointed Lecturer on Anatomy in St. Mungo's College, Glasgow.

DANVERS, H., M.D. Parma, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Assistant Physician to the Italian Hospital, Queen-square, W.C.

ELLISON, FRANCIS CHARLES, M.D. Dub., has been appointed Resident Medical Superintendent at the Mayo County Asylum, Castlebar.

KNOX, ROBERT, M.D. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer in charge of the Electrical Department at the Great Northern Central Hospital.

MUIR, GAVIN D., M.B., Ch.B. Glasg., has been appointed Resident Medical Officer at the Royal Albert Hospital, Devonport.

PENNY, SYDNEY GREENWOOD, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth District by the Penzance Board of Guardians.

THOMAS, J. H., L.R.C.P. Edin., M.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Market Harborough District of the county of Leicester.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERDEEN PROVINCIAL COMMITTEE FOR THE TRAINING OF TEACHERS.—Lecturer on Hygiene. Salary £400.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM GENERAL HOSPITAL.—Three Receiving-room Officers. Salary £150 per annum

BIRMINGHAM, QUEEN'S HOSPITAL.—House Physician. Also Obstetric and Ophthalmic House Surgeon for seven months. Salaries at the rate of £50 per annum, with board, lodging, and washing.

BOMBAY MUNICIPALITY.—Two Assistant Health Officers. Salaries Rs. 750, rising to Rs. 1000, and Rs. 600, rising to Rs. 750 per mensem respectively.

BRADFORD SANATORIUM FOR CONSUMPTIVES, Eastby, near Skipton.—Resident Medical Officer. Salary £100, with rations, apartments, and washing.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board and lodgings.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon; also Resident Casualty Officer, each for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

BURY INFIRMARY.—Junior House Surgeon. Salary £80, increasing to £90, with board, residence, and attendance.

BUXTON, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CAIRO, SCHOOL OF MEDICINE (EGYPTIAN GOVERNMENT, MINISTRY OF EDUCATION).—Assistant to the Professor of Pathology. Salary £E. 320 per annum.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £120, rising to £150 per annum, with apartments, board, washing, and attendance.

DEVON COUNTY ASYLUM.—Assistant Medical Officer. Salary £140, with board, apartments, and laundry.

DOVER, ROYAL VICTORIA HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board, lodging, and washing.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40, with board and residence.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £60 per annum, with residence, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £40 per annum, with board and washing.

EGYPTIAN GOVERNMENT, KASR-EL-AINY HOSPITAL.—Resident Medical Officer. Pay £250 a year, with quarters, servants, washing, coals, and light.

EPPING UNION.—District Medical Officers and Public Vaccinators for Parndon District, for the Parish of Roydon, and for the Parish of Nazeing. Salaries £32, £30, and £40 per annum, and fees.

GLASGOW DISTRICT ASYLUM, Woodilee, Lenzie.—Assistant Medical Officer. Salary £135 per annum, with board, lodging, &c.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

KENSINGTON GENERAL HOSPITAL, Earl's Court, London, S.W.—Senior and Junior Resident Medical Officer. Salary £60 and £40 per annum respectively, with board, washing, and residence.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, lodgings, and washing.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 a year, with rooms, attendance, board, and washing.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £80 per annum, with board, residence, &c.

MANCHESTER WORKHOUSE, Crumpsall.—Assistant Medical Officer. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon. Salary £50 a year, with apartments, board, washing, and attendance.

ORKNEY, PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £51 per annum.

PENDLETON, SALFORD UNION INFIRMARY, Hope.—Resident Medical Officer. Salary £130 per annum, with apartments and attendance.

PRESTWICH, MANCHESTER, COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150, increasing to £250, with board, apartments, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SOUTHPORT INFIRMARY.—Resident Senior House Surgeon, unmarried, for six months. Salary at rate of £90 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

SURREY, LONDON COUNTY ASYLUM, Long Grove, Epsom.—Assistant Medical Officer. Salary £180 a year, with board, apartments, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons, tenable for six months.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer, unmarried. Salary £140, rising to £160, all found.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

YORK DISPENSARY.—Two Resident Medical Officers, unmarried. Salaries £120 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Strathmiglo, in the county of Fife.

## Births, Marriages, and Deaths.

### BIRTHS.

COOKE.—On August 7th, at Fairholm, Walsall, the wife of John G. Cooke, M.B. Cantab., of a son.

COOPER.—On August 6th, at Great Portland-street, W., the wife of A. Tanner Cooper, M.R.C.S , L.R.C.P., of a son.

EVANSON-JONES.—On August 8th, at Ashton Old-road, Manchester, the wife of E. Evanson-Jones, L.R.C.P. & S. Edin., L.F.P.S. Glasg., of a son.

HARMAN.—On August 10th, at Harley-street, W., the wife of N. Bishop Harman, F.R.C.S., of a son.

HATRICK.—On August 11th, at Welland House, New Barnet, Herts, the wife of Charles D. Hatrick, M.D., of twin daughters.

KEY.—On August 12th, at Valetta, Clarendon-road, Southsea, the wife of M. Aston Key, M.B.. B.C. Camb., of a daughter.

SMITH.—On August 11th, at Walden House, Watford, the wife of G. Francis Smith, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

### MARRIAGE.

MILLARD—FOSTER.—On June 26th, at Aliwal North, Cape Colony, Philip E. Millard, M.D., to Edith Ursula, daughter of the late W. H. Foster, Esq.

### DEATHS.

BROWN.—On August 12th, aged 50 years, Walter Henry Brown, M.Sc. Leeds, F.R.C.S. Irel., M.R.C.S. Eng., of Highfield House, Headingley, Leeds.

MORISON.—At 8, Ross-road, Wallington, Surrey, on August 13th, in her eighty-second year, Margaret Gordon Maclellan, widow of Alexander Cushnie Morison, Esq., Surgeon in the Military Service of the Honourable East India Company.

WILLIAMS.—On August 11th, at 48, Prince of Wales-road, Norwich, Charles Williams, F.R.C.S.E.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

**During the week marked copies of the following newspapers have been received:**—*Gloucestershire Echo, Stowmarket Weekly Post, Daily Graphic, Daily News, Standard, Sussex News, Tribune, Daily Telegraph, Morning Post, Hereford Times, Yorkshire Daily Observer, Newcastle Daily Chronicle, Bombay Gazette, Edinburgh Evening Dispatch, Fife Herald, Justice, Black and White, Nottingham Evening News, Rand Daily Mail, Newcastle Chronicle, Free Lance, &c.*

# Notes, Short Comments, and Answers to Correspondents.

### A POINT IN POOR-LAW PROCEDURE.

WE have received some newspaper cuttings which refer to a rather curious point which has recently arisen before the Watford board of guardians. It appears that a patient in the Watford Infirmary was operated upon by Dr. James Buchanan, the district medical officer of Watford who had occasion to ask a brother practitioner to administer an anæsthetic. Dr. Buchanan accordingly applied to the board for payment of one guinea to the medical man in question, when the board riposted by asking Dr. Buchanan why he had operated upon the patient instead of obeying the instructions of the board to transfer the case to the Watford District Hospital. Some of the guardians proceeded to take a very high hand with Dr. Buchanan. One lady objected to the payment of the fee which would have been avoided if the patient had gone to the district hospital. Another called attention to the medical man's disobedience to orders; and a gentleman with a military title laid stress upon the fact that the medical man was the servant of the board. At the next meeting of the board, however, one of the guardians read a letter from the treasurer of the Watford District Hospital saying, "Pauper patients are not admitted to the hospital. The infirmary is the proper place for pauper patients," a document which showed that the alleged disobedience of the medical man was really an appreciation of the proper course to be pursued. We think that the action of the board shows an amount of distrust of their medical officer which is a little remarkable. Of course, the proper person to perform ordinary operations upon patients in the Poor-law infirmary is the medical officer of the infirmary, and the proper place for their performance is the infirmary; and the fee for the administration of an anæsthetic ought not to be grudged to the unfortunate patient; and the board ought not to attempt to sponge upon the district hospital.

### A MEDICAL OFFICER OF HEALTH AND A PRESCRIBING DRUGGIST.

AN unusual scene recently occurred at a meeting of the Stowmarket urban district council, in which the protagonists were the medical officer of health of the district, Dr. C. W. Low, and the chairman of the council, Mr. Gostling, a druggist of the town. Dr. Low reported to the council that a local druggist, whom he did not name, had failed to notify a case which he (the druggist) had recognised as erysipelas and prescribed for as such. Dr. Low submitted that this was an infringement of the Act which requires that in default of the nearest relative, every person in charge of, or in attendance upon, the patient suffering from a notifiable infectious disease shall send notice of a case to the medical officer of health. An animated discussion ensued between the chairman and Dr. Low, the former objecting to the use of the term "druggist" to denote a pharmaceutical chemist and insisting that Dr. Low had used the word contemptuously, which the latter denied. The chairman then asked whether Dr. Low thought a druggist was capable of diagnosing erysipelas and received the very proper answer that whether he had correctly diagnosed it or not, if a druggist believed a case to be erysipelas and treated it as such he was bound to notify it to the medical officer of health. The debate waxed somewhat acrimonious and it shortly became apparent that it concerned the chairman intimately, for at his urgent instance Dr. Low reluctantly informed the council that the chairman himself was the offending druggist. There was a good deal more discussion which led to nothing except a suggestion from a councillor that Dr. Low had acted rightly in reporting the matter. It is obvious that he did no more than his duty and that Mr. Gostling had failed to comply with the provisions of the Act.

### A NEW RAILWAY SALOON FOR INVALIDS.

THE London and North-Western Railway Company has forwarded to us a description of a new type of saloon that it has recently constructed for the accommodation of invalids which seems to mark a considerable advance on anything of the sort that has been produced hitherto. The saloon contains a central compartment, which is 18 feet long, for the invalid, entered by folding-doors which admit of the introduction of a bath-chair. This portion contains a fully furnished brass bedstead and a couch and lounge chairs of a comfortable aspect. The apartment has been elaborately upholstered and has been planned with a view to avoid vibration as much as possible. A lavatory adjoins the saloon and at each end of the coach are a first-class compartment with lounge chairs that can be converted into beds and a lavatory adjoining each. Every possible comfort and convenience for an invalid and his companions who desire to make a long journey seem to have been provided. Medical men having feeble or bedridden patients whom they wish to send away from home on this company's system may be glad to know of this service, which will probably be followed by the other large railway companies.

### HOSPITAL PARASITES.

THE *World* in its issue for August 13th contains a most useful article for public consumption which is headed "Parasites: A Study of Lay Ethics." The article contains a singularly straightforward statement of the main facts of the abuse of hospital out-patient departments by non-indigent persons. The writer points out the triple fraud that is daily perpetrated upon the deserving poor, the charitable public, and the medical profession, and remarks:—"For the comparatively well-to-do to abuse hospital charity is therefore, perhaps, the meanest type of fraud the resources of latter-day civilisation have yet evolved." He proceeds to express his conviction, from personal investigations, that it is not the wealthy who personally defraud hospital charity. "The legendary duchess, who, borrowing her maid's gown, attends the out-patient department in order to economise her fee for medical advice, is apocryphal. ...... The parasites on hospital charity prey vicariously. They send their servants and dependants." The writer fairly claims that a domestic servant, earning a good wage, besides her board and lodging, is not a fit subject for free medical relief, even if her employer is unwilling to assist her in obtaining medical advice. He very rightly lays stress on the evil tendency that the hospital letter system has in promoting this form of abuse. In acquitting the wealthy classes of defrauding the hospitals in person, he qualifies his verdict as follows: "If they are on economy bent a much more comfortable plan (and one very generally practised) is to call in a medical man and then not to pay the fee until a convenient season or even until active unpleasantness threatens. At whatever inconvenience to himself, the doctor can always wait." He proceeds, however, to record an amusing instance of how a surgeon did not wait, much to the discomfiture of a wealthy parasite. We are pleased to read in a widely read newspaper so able a statement of the dishonest actions to which many otherwise respectable persons will stoop in their dealings with medical men, and we trust that the message may reach at least a few of these offenders.

### WANTED—A HOME.

*To the Editors of* THE LANCET.

SIRS,—I should be glad if you could tell me of a sanatorium where a young artisan suffering from pulmonary tuberculosis and asthma could be treated for a few weeks; he can only pay about £5. His condition is steadily improving. If unable to give the information, would you ask your readers if they could do so.

I am, Sirs, yours faithfully,
August 13th. P. S. L.

⁂ As a rule, patients suffering from asthma with pulmonary tuberculosis do not do well under sanatorium treatment. We do not know of any sanatorium to which the patient could be sent for much more than a week on a payment of £5. As he is improving had he not better stay where he is?—ED. L.

◆

*Etiquette.*—We do not think that our correspondent should advertise his change of address in the newspaper, at any rate he must only do so with discretion. He should send notices round to his patients.

*Suffolk.*—We do not think that any such institution exists either in France or in Italy.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Demonstration:—Dr. Low. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**TUESDAY** (20th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Saunders: Examination of Severe Cases of Gastric Disorder.

**WEDNESDAY** (21st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.

**THURSDAY** (22nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

**FRIDAY** (23rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Ball: Some Common Symptoms of Throat and Nose Diseases.

**SATURDAY** (24th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, August 15th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 9 | 29·95 | S.W. | ... | 97 | 71 | 61 | 60 | 63 | Overcast |
| „ 10 | 29·75 | S.W. | 0·02 | 118 | 71 | 58 | 57 | 60 | Cloudy |
| „ 11 | 29·99 | W. | ... | 123 | 73 | 54 | 58 | 63 | Fine |
| „ 12 | 30·05 | W. | ... | 115 | 68 | 54 | 58 | 64 | Cloudy |
| „ 13 | 30·13 | W. | ... | 117 | 72 | 57 | 59 | 63 | Fine |
| „ 14 | 29·97 | S.W. | ... | 124 | 75 | 62 | 61 | 66 | Fine |
| „ 15 | 29·65 | W. | 0·35 | 116 | 68 | 57 | 57 | 61 | Cloudy |

## Communications, Letters, &c., have been received from—

**A.**—Dr. B. Anningson, Cambridge; Dr. A. Anderson, Rosewood, Queensland; Ancoats Hospital, Manchester, Secretary of; Messrs. Allen and Hanburys, Lond.; Dr. H. W. Armit, Lond.; Aeosan Co., Birmingham.

**B.**—Mr. W. Bryce, Edinburgh; Birmingham General Hospital, House Governor of; Birmingham and Midland Skin, &c., Hospital, Secretary of; Messrs. A. and C. Black, Lond.; Bury Dispensary, Secretary of; Bailbrook House, Bath, Medical Superintendent of; Mr. Francis G. Bennett, Great Glenn; Dr. Charles R. Box, Lond.; Mr. C. Birchall, Liverpool; Mr. T. B. Browne, Lond.; Bombay Municipal Offices, Superintendent of the Printing Department; Bristol Royal Infirmary, Secretary of; Messrs. Burroughs, Wellcome and Co., Lond.; Dr. J. F. E. Bridger, Bridgetown, Barbados.

**C.**—Dr. Sidney Coupland, Lond.; Dr. Maurice Craig, Lond.; Central London Throat, &c., Hospital, Secretary of; Mr. F. W. Clarke, Chorlton-cum-Hardy; Mrs. J. Coope, Bunwell; Dr. Henry J. Clarke, Doncaster; Chief Commissioner of the Central Provinces, India, Nagpur, Third Secretary to the; Messrs. Cuxson, Gerrard, and Co., Birmingham; "Conifers," Hampton Wick, Medical Superintendent of; Messrs. Cassell and Co., Lond.; Mr. A. M. Case, St. Margaret's-at-Cliffe; Dr. G. D. Culver, San Francisco; Messrs. Carnrick and Co., Lond.; Messrs. Harry Cox, Lond.

**D.**—Mr. A. B. Davis, Epping; Mr. G. E. Davidson, Shere; Dumfries and Galloway Royal Infirmary, Treasurer of; Derby County Asylum, Mickleover, Clerk to the; Dr. James Davidson, Neyoor, Travancore; Devonshire Hospital, Buxton, Secretary of; Dr. J. H. Dauber, Lond.; Dover Hospital, Secretary of.

**E.**—Messrs. Eason and Son, Dublin; Electrical Standardizing Co., Lond.; E. W. D.; Editions d'Art et d'Architecture, Geneva.

**G.**—Mr. E. M. Gandon, Rhyl; Guest Hospital, Dudley, Secretary of; Globe Express, Lond.

**H.**—Mr. R. B. Hope, Lond.; Mr. W. B. Holderness, Windsor; Huddersfield Infirmary, Secretary of; Dr. A. Hosetter, Rockford, U.S.A.; Mr. Charles C. Haviland, Frimley Green; Hastings Urban Sanitary Authority, Clerk to.

**I.**—Dr. W. W. Ireland, Musselburgh; Incorporated Society of Trained Masseuses, Lond., Secretary of.

**J.**—Dr. W. J. Johnson, Shefford; J. N. A., Brighton; Messrs. W. and A. K. Johnston, Edinburgh.

**K.**—Messrs. Knoll and Co., Lond.; Miss Beatrice E. Kidd, Lond.; Dr. M. Aston Key, Southsea; Dr. Henry W. King, Chester; Dr. R. G. Kirton, Cairo; Messrs. R. A. Knight and Co., Lond.

**L.**—Mr. H. K. Lewis, Lond.; Mr. J. B. Lamb, Lond.; Loughborough and District Hospital, Secretary of; Mrs. L. Lockhart Lang, Coupar Angus; Messrs. Lee and Nightingale, Liverpool; Mr. H. Lamond, Glasgow; Dr. Murray Leslie, Lond.

**M.**—Dr. Hector Mackenzie, Lond.; Mr. John A. C. Macewen, Glasgow; Dr. James H. MacDonald, Paisley; Manchester Guardians, Clerk to the; Mr. J. Murray, Lond.; Manchester Medical Agency, Secretary of; Miss Winifred Muirhead, Larbert; Mr. S. Manshard, Basle; Dr. H. Macnaughton-Jones, Lond.; Dr. A. F. Martin, Bradford; Mrs. Olive Christian Mackirdy, Lond.; Mr. G. G. R. McDonald, Wellington.

**N.**—Messrs. Nicolay and Co., Lond.; North Staffordshire Infirmary, Hartshill, Secretary of; National Dental Hospital, Lond., Secretary of; Mr. J. O. Neumann, Lond.; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.

**O.**—Professor Wm. Osler, Oxford.

**P.**—Mr. Y. J. Pentland, Edinburgh; Dr. Owen Paget, Philadelphia; Mr. C. S. R. Palmer, Lond., Mr. F. E. Potter, Lond.; Mr. Herbert J. Paterson; *The Pharmaceutical Journal*, Lond., Editor of; Dr. F. S. Pitt-Taylor, Rock Ferry; Provincial Advertising Agency, Leicester.

**Q.**—Queen Margaret College, Glasgow, Secretary of; Queen's College, Galway, Registrar of.

**R.**—Dr. W. Forbes Robertson, St. Abb's; R. J. E.; Messrs. Richardson and Co., Lond.; Rochdale Infirmary, Secretary of; Royal Albert Hospital, Devonport, Secretary of; Messrs. Reynolds and Branson, Leeds; Royal Victoria Eye, &c., Hospital, Dublin, Registrar of.

**S.**—Dr. Anton Sticker, Berlin; Mr. W. G. Sutcliffe, Margate; Sheffield University, Registrar of; Seltzogene Patent Charges Co., St. Helen's; Southport Infirmary, Secretary of; Messrs. W. H. Smith and Son, Nottingham; Mr. A. Skardon, Lond.; Messrs. G. Street and Co., Lond.; Salford Union, Clerk to the; Seamen's Hospital, Greenwich, Secretary of; St. Peter's Hospital for Stone, &c., Diseases, Lond., Secretary of; The Scientific Press, Lond.; Sanitas Co., Lond.; Mr. J. Sampson, York; Stockport Infirmary, Secretary of; Mr. G. Smith, Aberdeen; Mr. W. E. Sargant, Lond.; Scholastic, Clerical, &c., Association, Lond.

**T.**—Professor J. J. Thomson, Cambridge; Dr. John H. Tonking, Camborne; Mr. H. Bell Tawse, Nottingham; Taunton and Somerset Hospital, Taunton, Secretary of.

**U.**—University of London, Principal of.

**W.**—Dr. George T. Western, Lond.; Dr. Samuel West, Lond.; Messrs. W. Wood and Co., New York; *The World*, Lond., Editor of; Wills, Ltd., Lond., Secretary of; Waverley; Messrs H. Wilson and Son, Lond.

**Z.**—Messrs. Zimmerman and Co., Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. B. G. Atkinson, Long Clawson; A. M. P.

**B.**—Dr. F. Bryan, Earls Colne; Mr. H. Burrows, Lond.; Mr. H. Butterfield, Northampton; Dr. R. Baker, York; Messrs. J. L. Bullock and Co., Lond.; Dr. Brooks, Llandrindod Wells; Dr. W. Bethune, St. Tudy; Surgeon-General G. Bainbridge, I.M.S., Clevedon; Lieutenant F. E. Bissell, R.A.M.C., Hoddesdon; Bayer Co., Lond.; Brighton, Hove, &c., Dispensary, Secretary of; Dr. W. Bickerton-Edwards, Seven Sisters; Mr. A. E. Barclay, Higher Broughton.

**C.**—Dr. J. H. Collier, Bristol; Mr. F. H. Cooke, Birch; C. A. D.; Miss A. M. Collier, Lond.; Mr. Chaffers, Keighley; Dr. F. B. Connihan, Krugersdorp; Cardiff Infirmary, Secretary of.

**D.**—Mr. H. Davies, Marazion; Dr. Y. Dawson, Southborne-on-Sea; Mr. R. Davis, Lond.; Messrs. W. Dudley and Son, Wellingborough.

**E.**—Mr. J. Evans, Maidstone; Mr. J. E. Eltoft, Pontypool; Dr. A. Edington, Leytonstone; Mr. F. G. Ernst, Lond.; Mr. J. Edwards, Liverpool; E. A. F. W.

**F.**—Mr. F. P. Flood, Cefn Coed; Dr. A. C. Ferguson, Thirsk; F. R.; F. W.; Mr. F. T. Fagge, Llanfairfechan.

**G.**—Dr. S. A. Gill, Formby; Mr. W. Griffiths, Blaenavon; Grimsby and District Hospital, Secretary of; Messrs. J. and W. Griffin, Walsall; Messrs. R. W. Greeff and Co., Lond.; G. D.; Dr. P. Goold, Macroom; Mr. E. Gooch, Lond.; Dr. J. Gardner, Preston.

**H.**—Mrs. A. Hilleary, Bude; Mrs Spencer Howard, Lond.; Hastings and St. Leonards, &c., Hospital, Secretary of; Mr. P. Howe, Ashton-under-Lyne; Herefordshire General Hospital, Hereford, Secretary of; Hospital for Sick Children, Lond., Secretary of; H. D. M. C.; Messrs. Haasenstein and Vogler, Geneva; Dr. W. Nevill Heard, Swanage; Mr. F. Harry, Lond.

**J.**—Dr. W. W. Jones, Brighton; J. A. C.; J. W. S.; J. P. L.; Mr. J. F. Jefferies, Goleen; J. W.; J. H. B.

**L.**—Dr. R. A. Lambert, Swindon; Messrs. W. Le Lacheur and Son, Lond.; Dr. D. Ligat, Lond.; Staff-Surgeon G. Ley, R.N., Portsmouth; Locum Surgeon, Coxhoe; Locum, West Croydon; Leeds Tuberculosis Association, Secretary of.

**M.**—Mr. J. Moir, Boscombe; Messrs. J. Menzies and Co., Edinburgh; Messrs. J. Menzies and Co., Glasgow; Macclesfield General Infirmary, Secretary of; Dr. Mortimer, Seven Kings; Dr. J. Munday, Lond.; Monmouthshire Asylum, Abergavenny, Clerk of; Messrs. Maple and Co., Lond.

**N.**—Northern Medical Association, Glasgow, Secretary of.

**O.**—Mr. C. A. P. Osburne, Old Catton; O. S.

**P.**—Mr. J. Power, Gosport; Lieutenant-Colonel F. F. Perry, I.M.S., Lond.; P. H. S.; Dr. N. Panton, Lond.; Mr. R. F. Pawsey, Barnsley.

**R.**—Messrs. Raimes and Co., York; Rousay Parish Council, Clerk to the; Royal Ear Hospital, Lond., Secretary of.

**S.**—Dr. H. K. Smyth, Selukwe; Messrs. Salamon and Co., Rainham; S. G.; S. D. S.; Smith's Advertising Agency, Lond.; Sabella Motor Car Co., Lond.; Mr. G. F. Smith, Watford; Messrs. Spiers and Pond, Lond.; Dr. H. Sinclair, Maesteg; Messrs. W. H. Smith and Son, Manchester; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Messrs. W. H. Smith and Son, Lond.

**T.**—Mr. P. Templeton, Liphook; Captain F. T. Thompson, I.M.S., Rawal Pindi, India; T. H. B.; T. J.; Mr. J. Thin, Edinburgh.

**W.**—Dr. A. Walker, Mid-Calder; Mr. J. T. Ainslie Walker, Lond.; Messrs. W. J. Wilcox and Co., Lond.; Captain Forbes Winslow, R.A.M.C., St. Leonards-on-Sea; Mr. W. A. Wharram, Leeds; Dr. W. H. O. Woods, Aldermaston; W. H.; Mr. C. H. Wilson, Ballycastle; Messrs. Wykes and Co., Leicester; Mr. A. H. Wade, St. Albans; Weston-super-Mare Hospital, Secretary of.

---

EVERY FRIDAY.

# THE LANCET.

PRICE SEVENPENCE.

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... ... | 0 8 2 | Three Months ... ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.

# A Lecture

ON

# THE PRINCIPLES OF VACCINE-THERAPY.

*Delivered before the Harvey Society of New York*

BY SIR A. E. WRIGHT, M.D. DUB., F.R.S.,
SOMETIME PROFESSOR OF PATHOLOGY, ARMY MEDICAL SCHOOL, NETLEY; DIRECTOR IN MEDICAL CHARGE OF THE DEPARTMENT FOR THERAPEUTIC INOCULATION, ST. MARY'S HOSPITAL, LONDON, W.

*(Concluded from p. 427.)*

WE have next to make a detailed study of the curves of immunisation which are obtained by the inoculation of bacterial vaccines and to make acquaintance with the laws which govern the output into the blood of the opsonins and other bacteriotropic substances which are produced in the organism in response to an *iotus immunisatorius*.

## DETAILED STUDY OF THE CURVES OF IMMUNISATION WHICH ARE OBTAINED BY THE INOCULATION OF BACTERIAL VACCINES.

Such a record as is furnished by the immunisation chart reproduced in Fig. 1 gives an inadequate, and, be it noted, a quite fallaciously inadequate, account of the events which occur in the blood after the inoculation of bacterial vaccines.

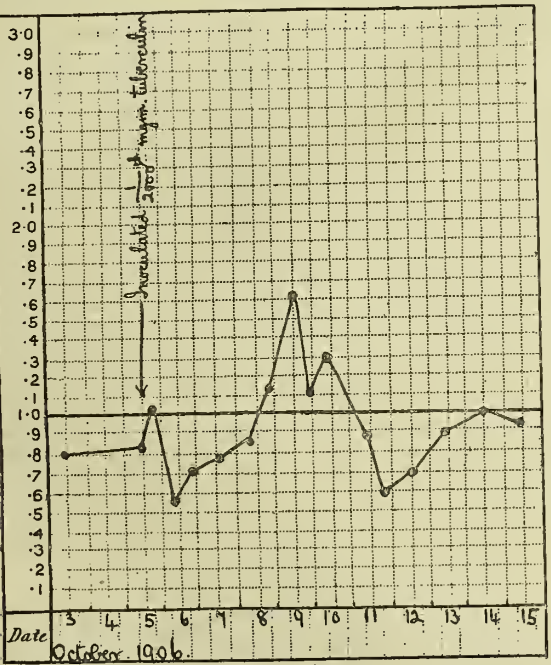


Fig. 2.

Curve showing the changes in the opsonic power of the blood which followed upon the inoculation of $\frac{1}{2000}$ milligramme of tuberculin into a patient suffering from tuberculous cystitis.

When, instead of testing the blood after inoculation at intervals of from a week to ten days, as was done in the case of the patient whose immunisation chart has just been considered, the blood is tested from day to day, it is borne in upon us that the augmentation of the bacteriotropic power—or, let us rather phrase it, the rise in the bacteriotropic pressure—of the blood is generally preceded by a depression. It is borne in upon us also that the rise which is achieved by inoculation is only a transient rise, and that the bacteriotropic pressure generally declines after the interval of a few days, sometimes sinking away until it reaches the point at which it started, in other cases running along for a time at a level only a little above the original base line. I have spoken of the sinking away of the bacteriotropic pressure as the "negative phase" and of the rise of pressure as the "positive phase" of the reaction of immunity. And I have tried to delineate in words the whole oscillation by speaking of "the ebb" (the *negative phase*), "the flow" (*positive phase*), "the backflow" (subsequent decline of the curve), and the "sustained high tide of immunity."

This phrase describes only the larger features of the curve. Where more frequent and in particular where earlier blood examinations are made another practically constant feature reveals itself. This is the transient initial rise preceding the negative phase. We may think of this as of a wavelet which arrives before the ebb which precedes the main wave of immunity. This wavelet and its position in the general scheme of oscillation is shown on the record below. (Fig. 2.)

It is not to be assumed that the form of curve, as set forth in the chart above, is universally conformed to. Where a dose of vaccine which is only just sufficient to produce a result is administered the negative phase is elided and there is registered only a positive phase. The curve in such a case neither rises so high nor does it maintain itself so long above the base line, as in the case where a larger quantum of vaccine has been administered.

Where an excessive dose of vaccine is administered—meaning here by an excessive dose a dose whose inoculation produces severe constitutional symptoms—the negative phase is proportionately accentuated and prolonged. Where the quantum of vaccine is immoderately large the bacteriotropic blood pressure may be reduced for a period of weeks. The advent of a positive phase may often in such a case be awaited in vain.[1]

*Chronology of the different phases of the curve of immunisation.*—Having now learned the features of the curves which are obtained after the inoculation of different quanta of bacterial vaccines we may further study the chronology of the successive incidents. The traditional view—a view which would seem to have been derived from experience with vaccinia—is that a period of ten days is always required for the establishment of active immunity. Largely owing to the fact that this view was adopted by Pasteur, it became part of the routine religion of bacteriologists, animals and men being subjected to test inoculations or to reinoculation on the expiration of a fixed period of ten days. So far as I know Haffkine was the first to claim that a condition of immunity was achieved already within 24 hours after the inoculation of a vaccine. He put forward this claim in connexion with his plague vaccine, basing his contention on the statistical results of anti-plague inoculations undertaken respectively in the Byculla Gaol in Bombay and in the village of Undhera. Some years afterwards, the matter having in the meantime been advanced a step further by the publication, under Haffkine's auspices, of evidence pointing to the successful inoculation of patients who were already in the incubation period of plague—I obtained in the course of a study of the changes effected by antityphoid inoculation in the bactericidal power of the blood evidence of development of increased bactericidal power in the blood on the day subsequent to the inoculation of moderate doses of antityphoid vaccine. Following upon that I obtained in connexion with my first therapeutic inoculations of staphylococcus vaccine evidence of increased phagocytic response on the day subsequent to inoculation. One would have thought that the achievement of an immunising effect within so short a period as 24 hours would have constituted a record. We have, however, during the last 12 months obtained in very numerous cases conclusive evidence of an augmentation of the opsonic power of the blood within an hour after the inoculation of tubercle vaccine, and also trustworthy witness of associated clinical improvement within that time in connexion with the inoculation of tubercle vaccine in an infection of the eye. We have also, in connexion with the treatment of furunculosis by inoculations of staphylococcus vaccine, obtained trustworthy evidence of clinical improvement within an hour after inoculation. The augmentation of the opsonic power and the clinical improvement which are here in question were, as you will appreciate, correlated, in the case where very small doses of vaccine were employed, with the development of the ordinary positive phase, and, in the case where moderate doses of vaccine were employed, with the development of that feature in the curve which was referred to above under the designation of the initial rise.

---

[1] It may be interesting in this connexion to note the followin points. 1. Immoderate negative phases due to over-dosage rarely come under observation except in the case of patients who are new to inoculations. After a prolonged series of inoculations it is the rule (but by no means an invariable rule) to find that a large surplus of vaccine over that which is required to raise the bacteriotropic pressure of the blood can be tolerated. 2. Where by inadvertence an excessive dose of vaccine has been administered it is unnecessary indefinitely to await the return of the bacteriotropic pressure to the normal. In such a case the desired rise can practically always be obtained by reinoculating, as soon as all constitutional symptoms have disappeared, with a minimal dose of vaccine. 3. The initial rise which has been referred to in the text may come into observation also in connexion with the inoculation of an immoderate dose of vaccine. It may therefore be provisionally assumed that such initial rise is the response of the organism to the fraction of the total dose which is immediately absorbed.

### Question as to whether it would not be possible by Piling one Inoculation upon another to Achieve a Larger Output of Antibacterial Substances and in Association with this a Positive Phase of Longer Duration.

It will be every man's—at any rate, every beginner's—thought that it ought to be practicable to achieve a larger output of antibacterial substances, if not by the employment of larger doses of vaccine, then assuredly by piling up inoculation upon inoculation. I have already discussed this question elsewhere,[2] and have pointed out that, while it may be possible in connexion with certain vaccines and the employment of submaximal doses—using the term submaximal doses here to denote doses smaller than those which would give maximal immunising response—to obtain cumulation in the direction of the positive phase, such a result can with other vaccines—and in particular with tubercle vaccines—very rarely, if ever, be obtained. Where this situation confronts us the proper policy would appear to be to treat each inoculation as an independent event, following up one inoculation by another as soon as the effect of the antecedent one is passing off.

### Question as to whether it is Expedient to Employ in Successive Inoculations Progressively Increasing Doses of Vaccine.

Close kin to those primitive ideas which suggest that the immunising response *must* increase proportionately with the dose of vaccine employed, and that failing this it *must* be possible to obtain an increased immunising response by piling one inoculation upon the other, is the idea that it *must* be possible to achieve a greater yield of protective substances by employing in successive inoculations doses of vaccine increasing by geometrical progression. In point of fact, experiment shows clearly, not alone that no advantage is reaped from such progressive augmentation of the doses of vaccine, but that such a system of dosage must inevitably culminate in disaster. Indeed it is obvious, on *a priori* considerations alone, that where the dose of vaccine is progressively augmented a point must sooner or later be arrived at when the immunising power of response will give out. I would therefore put it to you that the proper principle of dosage in connexion with any series of inoculations is never to advance to a larger dose until it has been ascertained that the dose which is being employed is too small to evoke an adequate immunising response. I regulate in practice the dosage of bacterial vaccines for therapeutic purposes in accordance with the following scheme. Where an examination of the patient's blood taken 24 hours before inoculation shows a subnormal index, and examination of his blood taken 24 hours after inoculation shows that the index has been considerably reduced, I take it that the smaller dose would have been appropriate. Where examination of the blood 24 hours after inoculation shows that the index has been raised, and where after the expiration of an interval of a week or ten days the index has fallen back to what it was before inoculation—the patient having experienced throughout nothing in the form of constitutional disturbance—I take it that a larger dose might appropriately have been administered. Where in association with a slight initial fall after inoculation the index is, after the expiration of a week or ten days, found to stand higher than it was at the outset, I take it that an appropriate dose has been administered.

### Question as to the Site which Ought to be Selected for the Inoculation of a Bacterial Vaccine.

A whole array of observations point to the local production of bacteriotropic and vaccinotropic substances generally at the site of inoculation. We have, in the first place, the observation that an infinitely greater yield of antitoxins—and it would seem also of antibacterial substances generally—is achieved in horses by the subcutaneous as contrasted with the intravascular method of inoculation. We have, further, the observation, in connexion with antityphoid inoculation, that seemingly a more effective protective reaction is induced in patients who show considerable local reaction at the seat of inoculation than in those who suffer from severe constitutional symptoms apart from any appreciable local reaction. We have further observations to the effect that local immunity may be acquired and retained apart from the requirement or retention of general immunity. If we may build—as it would seem that we may—upon the aggregate of these observations, it would logically follow that the site of every inoculation which is undertaken for therapeutic purposes deserves to be very carefully considered in connexion with the site of the focus of infection which is to be influenced. We may speculate as follows. Where protective substances pass into the blood through a channel which does not lead through the focus of infection—let us, for the purpose of fixing our ideas, suppose that focus to be situated in a lymphatic gland—the newly elaborated protective substances will come into operation upon that focus only after they have been diluted by the whole volume of the blood. Where, on the contrary—if I may so express it—the inoculation has been made "up stream" from the focus of infection—i.e., in some part of the lymph watershed which drains through the focus of infection—the protective substances which are produced at the site of inoculation may be expected to come into application upon the focus of infection in a comparatively undiluted condition.

Pending the time when the place of origin of the bacteriotropic substances which appear in the blood after inoculation shall have been definitely set at rest by some *experimentum crucis*,[3] I have made some tentative therapeutic experiments on the relative efficiency of inoculations undertaken up stream from the focus of infection as compared with inoculations made in regions which were not so related to that focus. I feel satisfied that those experiments—though they at the same time indicate that one and the same portion of tissue tires out on too frequent inoculation—have furnished results conformable to those which might have been expected to follow from the theory of the production of bacteriotropic substances at the site of inoculation. To take only one case out of many, I was much impressed by the fact that the theory of the local production of protective substances suggested a procedure which successfully arrested, after all other methods had failed, the spread of a tuberculous process which long defied treatment by the ordinary method of inoculation. This successful result was obtained in the case of an ulcer which, though it had completely healed in the middle, was spreading outwards in the form of a ring of indurated tissue. Its arrest and definite cure were achieved when—executing a strategic move—I inoculated the tubercle vaccine in a number of different points disposed circle-wise around the extending ring.

### An Acquaintance with the Physiology of the Immunising Response is not a Sufficient Equipment for an Immunisator.

Up to this point we have been dealing with the physiology of immunisation and the nature of the immunising response. For the successful treatment of bacterial disease by methods of immunisation something more is required. We must realise the conditions under which bacteria cultivate themselves in the organism. We must understand in what circumstances bacterial products or, as the case may be, bacteria are conveyed into the blood stream from local foci of infection. We must appreciate how the organism reacts to such '*auto-inoculations*.' And we must understand how to bring the leucocytes and bacteriotropic substances which are the instruments of immunisation into operation upon bacteria which are cultivating themselves inside the organism but outside the blood stream.

### Conditions which Obtain in the Foci of Bacterial Infection.

We may conveniently begin with the study of the conditions which obtain in foci of bacterial infection. I have already often pointed out that the foci in which bacteria cultivate themselves are in every case '*foci of lowered bacteriotropic pressure*,' and that the deficit of antibacterial substances in such foci can be accounted for by the fact that bacteriotropic substances are absorbed whenever blood fluids come in contact with bacteria, and by the fact that in the case of foci which are cut off from the blood stream the conveyance of bacteriotropic substances to the focus of infection by the lymph stream can only rarely keep pace with the afore-mentioned absorption. This premised with regard to the conditions which are common to all bacterial foci, I may here conveniently direct attention to special conditions which obtain (*a*) in infections of serous membranes where serous effusion has taken place, (*b*) in abscesses, (*c*) in sinuses, and (*d*) in association with brawny swelling of the subcutaneous tissues.

---

[2] Clinical Journal, May 16th, 1906; Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix.

[3] I would throw out in this connexion the suggestion that the production of protective substances at the site of inoculation would be definitely set at rest if after the inoculation of a bacterial vaccine into a limb it were shown that an increase of protective substances in the blood could be achieved by either massage and the application of a Bier's bandage.

(*a*) *Conditions which obtain in the case where bacteria are growing in, or in contact with, serous effusions.*—These are well exhibited in connexion with tuberculous peritonitis. Here, as my fellow worker, Douglas, and I have already shown, the ascitic fluid has in every case a much lower opsonic index than the circulating blood. It follows that the bacteria which are cultivating themselves in, or in contact with, such ascitic fluid are not exposed to the full bacteriotropic pressure of the circulating blood. We have here, as I have already pointed out, an explanation of the success which has attended tapping, and in particular laparotomy, in connexion with tuberculous peritonitis. That success is satisfactorily accounted for by the replacement of a stagnant lymph which has forfeited much of its antibacterial virtue by a fluid of higher efficacy freshly derived from the circulating blood. Manifestly we should be neglecting a very important element in the treatment, if while aiming at the destruction of bacteria in a serous membrane by processes of immunisation we were to fail to take into account the fact that the bacteria which are the object of our attack are cultivating themselves under a lowered bacteriotropic pressure.

(*b*) *Conditions which obtain in abscesses.*—In abscesses the conditions are more complicated. Here we have to take into account not only the absorption of bacteriotropic substances by bacteria, but also another factor which does not come into consideration in the case of ordinary serous effusions. This factor is the liberation of a tryptic ferment from the leucocytes. Such liberation occurs, as Opie has shown, whenever these formed elements disintegrate in pus. It is clear that as soon as—under the influence of autolysis or bacterial action—leucocytes have disintegrated in an abscess in numbers sufficient to abolish the opsonic and antitryptic power of the surrounding fluid, not only the normal bacteriotropic defence, but also the leucocyte defence will be thrown out of gear. I have neither the time nor the data to discuss with you here certain important but incidental issues which suggest themselves in this connexion, in particular the issue as to whether the liberation of tryptic ferment in the abscess —which Opie has brought into association with the destructive and burrowing action of pus—may not also account for the paralysis of all phagocytic effort which sooner or later overtakes the leucocytes in every focus of suppuration and for the frequent sterilisation of the contents of an abscess. It is, however, incumbent on me to point out to you that where we are aiming at the destruction of the bacteria in a suppurating focus by the agency of opsonins and leucocytes, and are aiming at the same time at the safeguarding of the tissues from the digestive action of the pus, it would be futile to attempt this task without making provision for the replacement of the tryptic and non-opsonic pus fluid by an antitryptic and opsonic fluid freshly derived from the circulating blood.

(*c*) *The conditions which obtain in sinuses.*—The conditions with which we have to deal in a sinus where that sinus is freely discharging pus are, I take it, essentially similar to those which prevail in an abscess which is discharging without emptying itself. In other words, we have a pus fluid which possesses a low opsonic power, and which exerts upon the tissues a digestive effect—a digestive effect which makes itself manifest to the eye in the case of a discharging sinus in the sodden and unhealthy appearance of the skin around the orifice. In the case of a choked sinus we have to deal with conditions which might be compared to those which would obtain in a well if the water which originally flowed into it had deposited an insoluble element in such a manner as to choke up all the conduits of supply. We can easily conceive how, no the walls and floor of such a well, forms of life might maintain themselves which would be quite incompetent to penetrate into the surrounding soil, or to hold their own in the face of a copious output of water. A dry sinus is, if I understand the situation aright, analogous to just such a choked well, the obstacles to the inflow of lymph being, on the one hand, the density of the granulation tissue, and on the other hand, the lining membrane of fibrin which clothes the walls of the sinus. If these are in reality the conditions under which bacteria maintain themselves in a sinus, we shall need for their dislodgment something more than a mere increase of the bacteriotropic power of the blood and circulating lymph.

(*d*) *The conditions which obtain in "brawny swelling."*—Next in order we have to consider the case where we have a focus of bacterial growth in tissues which are affected with 'brawny swelling.' I take it that in brawny swelling we have conditions which are, in the respect that the bacterial growth is cut off from the blood and lymph stream, analogous to those which have just been under consideration in connexion with sinuses. It is in the nature of a minor difference only that in brawny swelling the bacterial growth is isolated from the blood and lymph stream by the clotting of the lymph in the lymphatics, while in the case of a dry sinus the isolation of the bacteria is brought about by the clotting of the lymph on the surface of granulation tissue.

### Therapeutic Principles which Emerge from the Consideration of the Conditions which Obtain in a Bacterial Focus.

A strict regard for the logical development of my subject-matter would perhaps dictate that I should at this point embark upon the study of the phenomena of auto-inoculation, reverting afterwards to the consideration of the therapeutic measures which may be employed for dealing with the difficulties which are created (*a*) by the absorption of bacteriotropic substances in the bacterial focus; (*b*) by the liberation of tryptic ferment that takes place when leucocytes are broken down; and (*c*) by the obstruction of the lymph flow. It will, however, perhaps be more convenient if I discuss the therapeutic measures by which we may deal with these difficulties while the situation which we have in each case to confront stands out clearly before your minds. The general principles which ought to inform all our therapeutic measures are the following:—*We must provide for the conveyance of bacteriotropic substances into the focus of infection. In the case where an accumulation of stagnant fluid in the focus of infection effectually prevents the entrance of bacteriotropic substances we must as a preliminary measure draw off the fluid which occupies that focus. In the case where there are other obstacles to the free streaming of lymph through the focus of infection we must remove those obstacles.*

(*a*) *Conveyance of bacteriotropic substances into the focus of infection.*—The douching of the focus of infection by a stream of lymph fresh from the blood-vessels can in the case where the tissues are uninjured and the lymphatic channels are unobstructed, be effected by determining by the agency of heat or any other rubefacient a larger blood-supply to the region affected. It can also—as in Bier's method—be effected by banking up the blood in the veins in such a manner as to increase the hydraulic pressure in the capillaries.

(*b*) *Removal of stagnant fluid from the focus of infection in the case where this prevents the lymph which transudes from the blood-vessels finding proper access to the infecting bacteria.* —In the case where the lymph can effectively make its way through the focus of infection, permeating every part of it, access of the bacteriotropic substances to the infecting bacteria will manifestly be provided for by the activation of the lymph stream quite apart from any operative interference. In such a case the stagnant fluid which occupies the bacterial focus will—whether for good or for ill we must afterwards consider—be driven on into the general circulation by the *vis a tergo* of the activated lymph stream. Where this method of dispersion is inapplicable, or where for any reason it is contra-indicated, the evacuation of the stagnant fluid by operative measures will obviously be desirable. In the case where we have in an abscess a tryptic fluid which is eating its way into the surrounding tissues[4] such evacuation will not only be desirable but imperative.

---

[4] It is perhaps worth noting that the fact that an abscess gives fluctuation does not by any means furnish sufficient warrant for concluding that it contains a tryptic fluid and that operative measures must be resorted to. Again, even where the contents of an abscess have by the disintegration of leucocytes already acquired tryptic powers, it may still be practicable to abolish that tryptic power and to effect resolution by leading into that abscess cavity a sufficient quantum of antitryptic lymph.

Where we elect to employ the method of evacuation as distinguished from the method of dispersion our choice will lie between simple incision, incision followed by dry cupping—as advocated by Klapp—and evacuation by aspiration. This last method has, I submit, an advantage over all others in the respect that it does away with all scarring and minimises both the risk of the entrance of bacteria from without and the risk of auto-infection of the edges of the wound. It also secures more effectively than any method of incision and drainage what is in the case of an abscess the obvious desideratum, to wit, the filling up of the evacuated cavity with an antitryptic and opsonic lymph which will both inhibit bacterial growth and arrest further digestive destruction of the tissues.

(c) *Removal of obstacles to the free streaming of lymph through a focus of infection.*—We have seen above that a deficient outflow of lymph and the formation of a lining of fibrin on its walls are in the case of a sinus favourable to the survival of the infecting microbes. I am accustomed to combat these conditions by introducing into every dry sinus a solution of 0·5 per cent. citrate of soda and 5 per cent. sodium chloride.[5] It will be understood that the citrate of soda prevents coagulation and scabbing by decalcifying the lymph, and that the salt, acting by osmosis, causes fluid to transude from the blood-vessels. Under the influence of this application a clear lymph wells out from every choked sinus, and the local conditions rapidly improve. The situation in the case where we have a carbuncle or brawny swelling of the subcutaneous tissues being, in the respect that the lymph stream is obstructed, essentially similar to those which have just been considered, it must be treated on the same principle. I may perhaps in this connexion make brief reference to a case of Ludwig's angina which came not long ago under my observation. The patient, a middle-aged man, had in the first instance developed what was taken for an indolent furuncle in the parotid region. When, after considerable delay, this was incised no trace of pus was met with, and the tissues were found to be everywhere dry and infiltrated. They remained in this condition and the wound showed absolutely no disposition to heal. Two weeks later the patient, who up to that time had been taking out-door exercise, was suddenly taken seriously ill, and the brawny swelling, which up to that time had been limited to a patch on the left cheek, spread rapidly round under the jaw from one ear to another. A surgeon now carried a series of vertical incisions deep down into the indurated tissues. Twenty-four hours afterwards the patient had lapsed into a condition of low delirium, and the local conditions showed no sign of improvement. When brought to see him I could not, even at the bottom of the gaping incisions, find sufficient moisture to fill the loop of a platinum needle. Film preparations obtained by pressing cover-glasses against the sides of the wound showed very abundant streptococci, and only here and there a leucocyte. Blood drawn from a vein at the elbow with the intention of making a culture clotted instantaneously in the syringe. It was immediately clear that what was most urgently required in this case was, not that further means of antibacterial defence should be furnished to the patient but that such means of antibacterial defence as were already at his disposal should be brought into application upon the streptococci in the focus of infection. It was, with a blood so viscid and coagulable as was that of this patient, quite inconceivable that any lymph should transude into his tissues. It was inconceivable, also, that any transuded lymph should not clot in his lymphatics. Influenced by these considerations, large doses of citric acid were prescribed. 60-grain doses every three hours were prescribed. Six hours after the treatment had been begun lymph began to ooze into the wounds, and by next morning all the wounds had begun to bleed. The administration of citric acid was now suspended. A culture of infecting microbes having now been obtained the opsonic index of the patient's blood was determined. That opsonic index working out at 1·8, and very distinct amelioration having taken place in the patient's symptoms, inoculation treatment was postponed. There was not afterwards any occasion for immunising intervention, the patient making continuous and rapid progress to complete recovery. There is, I think, a lesson in this case which we shall do well to take to heart in connexion with all conditions where the access of lymph to the infected tissues is difficult.

## AUTO-INOCULATIONS.

Up to the point at which we have now arrived the reaction of immunisation has been considered exclusively in relation to the incorporation of bacterial vaccines. A moment's consideration will, however, make clear that where, in association with a bacterial invasion of the organism, bacteria or bacterial products pass into the general lymph and blood stream intoxication effects and immunising responses similar to those which follow upon the inoculation of bacterial vaccines must inevitably supervene.

You will immediately discern that it must be by the agency of such auto-inoculations that nature achieves curative effects in bacterial infections. You will discern also that the man who proposes to combat bacterial infections by methods of immunisation must needs be familiar with the conditions under which auto-inoculations occur, and with their effects on the organism. In the absence of such familiarity the immunisator will inevitably lose his way when he sets himself (*a*) to supply the place of auto-inoculations by artificial immunisation, or (*b*) to supplement auto-inoculations where these are inadequate, or (*c*) to place a check upon auto-inoculations where these are overtasking his patient's powers of immunising response.

(*a*) *Types of infection and conditions in which auto-inoculations occur.*—We may conveniently begin by inquiring in what types of bacterial infection and under what conditions auto-inoculations take place. You will, of course, immediately discern the position of affairs in connexion with the contrasted types of 'generalised' and 'strictly localised' infections which were considered in connexion with the expectant method of treatment. In the former class of infections auto-inoculations are occurring in continuous series; in the latter they are conspicuous by their absence. In the case of the type of localised infections which are associated with intermittent constitutional disturbance we have a class of infections which is, in the respect that we have here intermittent auto-inoculations, intermediary between the other two. The auto-inoculations which have been in question up to this point are, let it be noted, what we may speak of as '*spontaneous auto-inoculations*.' In addition to these we have to consider also *artificially induced auto-inoculations*.

Taking our departure from an illuminating observation of my collaborator, Dr. J. Freeman, in connexion with the effects produced on the blood by the massage of a gonococcal joint, we have at St. Mary's Hospital made a systematic study of the conditions under which auto-inoculations can be produced in persons affected with localised bacterial infections.

We have been able to show that auto-inoculations follow upon all active and passive movements which affect a focus of infection, and upon all vascular changes which activate the lymph stream in such a focus. Evidence has been obtained of the production of auto-inoculations by massage and extirpation operations affecting tuberculous glands; by passive extension, massage, and divers surgical operations affecting tuberculous and gonococcal joints; and by scraping operations undertaken in connexion with tuberculous caries and staphylococcal osteomyelitis. Again, evidence has been obtained of the production of artificial auto-inoculations in phthisical patients when they were called upon to breathe deeply and when they were examined by percussion and auscultation. We have also in connexion with a laryngeal affection seen an auto-inoculation supervene upon reading aloud. Again, we have obtained evidence that auto-inoculation may follow upon walking exercise in the case of patients affected with tuberculous disease of the lungs or of the bones or joints of the lower extremity or with severe tuberculous epididymitis. We have also obtained evidence that in the case of patients with spinal caries auto-inoculations are induced by a change from the recumbent to the sitting posture and from the sitting to the erect posture. Lastly, we have evidence that auto-inoculations are produced both by active and passive hyperæmia (application of hot fomentations and of Bier's bandages) to limbs affected with tubercle and streptococcus respectively.

## ASSISTANCE WHICH CAN BE OBTAINED FROM ARTIFICIAL AUTO-INOCULATIONS IN THE DIAGNOSIS OF OBSCURE CASES OF LOCALISED BACTERIAL INFECTION.

Let me for a moment here digress from the consideration of the therapeutic problem to consider the assistance which may be derived from the induction of artificial auto-inoculation where a problem of diagnosis confronts us. Rightly understood, all methods of bacteriological diagnosis in which we arrive at the nature of the infection by a process of induction from a measurement of the bacteriotropic content of the blood are methods which have as their aim the detection of the changes which are produced in the blood by the agency of auto-inoculations. The following three examples will suffice to make this clear. The agglutination test in typhoid fever—whose authorship was claimed by Widal on the plea that the increased agglutinating content of the serum was something other than the result of an immunising response evoked by an auto-inoculation—is now by common consent recognised to be a test which depends—as Gruber, with his collaborators Durham and Grünbaum, from the very first discerned—on the detection of products of immunity produced in response to an auto-inoculation. "The thermostable opsonin test," whose diagnostic value was first demonstrated by Reid and myself, furnishes in like manner evidence of an immunising response to a foregoing auto-inoculation or, as the case may be, to an inoculation of the corresponding bacterial vaccine. Exactly the same thing holds true of the "absorption of complement test" recently so extensively exploited by Wassermann.

---

[5] A convenient form of prescribing this is as follows :—℞ Sod. citrat., grs. iii.; sod. chlorid., grs. xxv. Ft. pulvis. Signa.—Dissolve in one ounce of boiling water and when cool apply as directed.

It will be clear that in all these cases diagnosis has perforce to wait upon spontaneous auto-inoculation. Such spontaneous auto-inoculation may, as we have seen in connexion with localised infections, be indefinitely deferred. It therefore marks a distinct step in advance when we come to realise that we can, in the case where the focus of infection is accessible, supply the place of the spontaneous auto-inoculation which makes default by the induction of an artificial auto-inoculation.

Let me say in this connexion that we have, by the agency of massage, active muscular movements, Bier's bandaging, or, as the case may be, other methods of artificial auto-inoculation, combined in each case with the measurement of the opsonic index before and after such event, obtained diagnostic results which have up to the present in every case been borne out by the subsequent history of the case. I would note here—for it is germane to the subject-matter under discussion—that we have had recourse to auto-inoculations associated with measurements of the opsonic index not alone for the preliminary diagnosis of the bacterial infection but also for the purpose of obtaining information with regard to the progress of the patient. Where an artificial inoculation can no longer be induced in a focus which previously could be influenced we are entitled to conclude that the focus of infection is extinct. Where an auto-inoculation can still be induced we may be assured that the focus of infection is still aglow.

## Discussion of the Comparative Merits of Treatment by Artificially Induced Auto-inoculations and Treatment by the Inoculation of Bacterial Vaccines.

It has, I take it, by this time come home to us all that we have in spontaneous auto-inoculation, in artificially induced auto-inoculation and in the inoculation of bacterial vaccines the three great agencies by which immunising responses can be evoked in the organism. Comparing first the immunising effects which are achieved by auto-inoculations taken generally with those which are achieved by the inoculation of bacterial vaccines it may, I think, be laid down with confidence that the former method of immunisation is far more expensive—expensive in the sense that the patient obtains a much smaller yield of protective substances for an equivalent of intoxication. Quite a number of other considerations come into account where we have to elect between treatment by artificial auto-inoculations and treatment by the inoculations of bacterial vaccines.

First in order comes the question of an eventual risk of disseminating living bacteria in the organism. It will be appreciated that the employment of auto-inoculations, since here, of course, living cultures are exploited, can never be entirely dissociated from this risk. There is no such risk where we operate with sterilised bacterial vaccines.

Next in order of importance comes the question of dosage. It will be plain that in all auto-inoculations we operate not only with living cultures but with unmeasured doses. Where we have to deal with a very considerable focus of infection, or, failing this, where in connexion with a smaller focus the irrigation with lymph is very searching and unduly prolonged, there will be washed into the general blood and lymph stream an excessive dose of the bacterial products.

Where, on the other hand, we have to deal with a small focus of infection, or where in the case of a larger focus irrigation with lymph is continued for too short a time, too small a vaccinating dose will come into application.

Again, where by reason of a gradual restriction of bacterial growth effected by immunisation, or where by reason of a repeated draining off of bacterial products under the influence of Bier's treatment or of massage, diminishing quantities of bacterial products are available in the focus of infection, there will come into application diminishing doses of vaccinating elements, while there may quite well be required, for the maintenance of adequate immunising responses, undiminished, or, as the case may be, increasing, doses of these elements.

Lastly, we have to keep in view, on the one hand, the fact that methods of auto-immunisation are applicable only in the case of foci which are superficially situated or are positioned in the extremities; and, on the other hand, the fact that the demands which are made upon the patient's time and the work which is thrown upon the controlling physician are, in the case where auto-inoculation methods are employed, much more serious than in the case where inoculations with measured doses of bacterial vaccines come into application.

Let it be noted in conclusion that the issue as between treatment by auto-inoculation and treatment by the inoculation of bacterial vaccines which has just engaged our attention reveals itself upon consideration to be largely an academic issue.

Whether we set out to activate the lymph stream on purely empirical principles, as Bier does with his bandaging, or the ordinary surgeon with his hot fomentations, or the masseur with his massage, or the radio-therapist with his radio-therapy, or the physician with certain of his drugs and hypodermic injections; or whether, as immunisators, we employ these methods with the sole intent of conveying bacteriotropic substances from the blood into the focus of infection, there will in each case be achieved in addition to the local effect which was intended also an unsought artificial auto-inoculation. That auto-inoculation may produce quite unintended effects; unintended effects in the form of an amelioration in bacterial foci remote from the seat of application of the bandage are not unfrequently obtained in connexion with Bier's treatment. Unintended effects are seen also in connexion with massage. I have, in connexion with the massage of gonorrhœal joints, seen such effects both in the form of amelioration and in the form of aggravation of the condition of untreated joints.

It equally holds true that when as immunisators we apply a Bier's bandage, or massage, or any similar device, thinking only of its auto-inoculating effect, there will in each case be achieved, in addition to the general immunising effect which was aimed at, also an unintended beneficial local effect caused by the conveyance of antibacterial substances into the focus of infection.

## Question as to whether Inoculations of Bacterial Vaccines may be undertaken in Bacterial Infections which are associated with Spontaneous Auto inoculations.

When the question as to the possibility of inoculating bacterial vaccines with safety and advantage to the patient in septicæmic infections, and in general in those types of infection which are associated with spontaneous auto-inoculations, comes up for discussion we are confronted with the *a priori* objection that, inasmuch as the vaccinating bacterial products are here already circulating in the blood, producing an intoxication, it would be plainly irrational to expect from the incorporation of further bacterial elements anything other than an aggravation of that intoxication.

To this argument two different rejoinders can be made. On the one hand, the objector may be confronted with the favourable results of actual experiments in which bacterial vaccines have been inoculated in septicæmic infections. On the other hand, an endeavour may be made to bring it home to the objector that recourse to the inoculation of bacterial vaccine in septicæmic conditions is not the irrational proceeding that it might at first sight appear.

I may conveniently here address myself to this last task, leaving for future consideration the results which have been actually obtained by inoculation in septicæmic disease. Let me in this connexion hark back to what was said in an earlier part of this lecture on the subject of the probable place of origin of the antibacterial substances. If I am right in supposing that the bacteriotropic substances are manufactured in the tissues at the seat of inoculation it will be obvious that the conditions for successful immunisation will be less favourable when the vaccinating elements are thrown into the circulating blood than when they are inoculated directly into the tissues. In the latter case they will come into application upon the tissues in a concentrated form, while in the case where they are introduced into the circulation they will come into application upon the tissues only after they have been diluted by the whole volume of the circulating blood. It is accordingly not irrational to assume that there would be a possibility of a septicæmic patient deriving in this respect advantage from the inoculation of bacterial vaccines. Let us suppose it granted that from the point of view of his immunisation such a patient might derive advantage. There would still remain the objection that the inoculation of bacterial vaccines might aggravate his intoxication. The rejoinder to this objection is, I think, suggested by the consideration that local toxic effects on the tissues—such as are produced by the subcutaneous inoculation of vaccines—and a local elaboration of bacteriotropic substances—such as we infer to follow upon inoculation—would be inexplicable apart from a holding back of the toxic substances in the tissues. Conformably with this a much smaller intoxication effect would result from the incorporation of an aliquot quantum of vaccine into the tissues than from the inoculation of that same quantum of vaccine directly into the blood stream. I would put it to you in view of these considerations that the question as to whether vaccine-therapy can or cannot be successfully employed in connexion with septicæmic disease is a question which ought not to be prejudged. It is a question which can be decided only by experiment.

With this discussion I have at last brought to a close my exposition of the main principles of vaccine-therapy so far as these are at present clear to me. You will, perhaps, expect me to say in conclusion one or two words on the subject of the results which have been achieved by the application of this method in actual practice.

### ON THE RESULTS WHICH HAVE BEEN ACHIEVED BY VACCINE-THERAPY.

The evidential methods which an author can employ to establish the efficacy of a new treatment are, as consideration will show, the following: (*a*) he can publish examples of refractory cases successfully treated; (*b*) he can publish—where such become available—examples of desperate cases successfully treated; (*c*) he can—where he has treated a sufficiently large number of cases—publish the complete series, giving the particulars of each case and the results of the treatment; and (*d*) he can—if he should be fortunate enough to enlist the interest of other workers—commit it to these to furnish definite proof of the efficacy of his method.

Let me try to bring out to you the strength and weakness of each of these evidential methods.

The evidential value of a number of refractory cases successfully treated lies, as you will discern, in this: that where success has been achieved in connexion with a number of such cases the idea that the results can be due to spontaneous cure may be dismissed. There attaches, however, to this class of evidence always a possibility of doubt, inasmuch as, even when the author is citing a consecutive series of successful cases, the reader will find a difficulty in believing that these were typical cases. He may incline to the view that all the cases cited may have been exceptionally fortunate cases where nature was in each case good enough to step in to effect a spontaneous cure.

In the case where the author has cited desperate cases successfully treated somewhat similar criticisms apply. It will be manifest that if the cases cited by the author were in reality, as he deems, cases in which a cure could not possibly have been effected by the unassisted efforts of nature, the successful event of these cases furnishes complete proof of the efficacy of the treatment. It must, however, always be borne in mind that, in the absence of the evidence of his own eyes to the desperate condition of the patients, the reader may find it easier to believe that the author was mistaken in regarding his cases as desperate, than to believe that that author's treatment can have been effectual in desperate cases.

Quite other are the criticisms which would apply to a statistical record of the event of treatment in a consecutive series of cases. It is, I think, not open to doubt that, apart from any incidental value which it might derive from the inclusion of refractory or desperate cases, such a series of cases would acquire value only if it were placed over against a series of quite similar control cases. Now a series of untreated cases such as would serve the purpose of controls cannot in practical life be obtained. For such a series of untreated controls there would therefore have to be substituted, as the only possible alternative, a series of cases treated by another method, and by another practitioner. Now if this were done the scientific issue would immediately be confused, not only by doubts as to the comparability of the two series of cases, but also by the question as to whether the therapeutic method which was applied in the control cases was hurtful, innocent, or beneficial, and above all it would be confused by the question of personal competition. If you will consider what confusion would in this way be introduced into the issue which we are here concerned to resolve, you will, I think, understand the motives which influence me when I say that I do not propose, either here or elsewhere, to supplement by any attempted statistical proof that presumptive proof of the efficacy of vaccine-therapy which I claim to have already furnished by the citation of numerous refractory and desperate cases successfully treated by the inoculation of bacterial vaccines.

And if you have completely entered into my thought you will appreciate that if I have in this lecture restricted myself in the main to an exposition of the principles of vaccine-therapy, leaving over so short a time to the discussion of the practical results which have been achieved, this has not been without set design. You will understand that it has been done because I felt that, if I could enlist your interest in the method of vaccine-therapy, if I could show you upon what principles it proceeds, and if I could induce here a scientific worker and there a scientific worker to embark upon the task of mastering and carrying out patiently the somewhat delicate technique which is, in my opinion, essential to the proper exploitation of vaccine-therapy, I might perhaps be taking the shortest way to procure for you a verdict on the practical efficacy of the method which should be free from the fallacies which attach to any 'author's account.'

Let me, in conclusion, for I may hereby perhaps induce others to make proof of the method, attempt very briefly to summarise for you my personal experience of the practical results of vaccine-therapy. You will, of course, appreciate that no one formula could possibly apply to all the various forms of infection which are encountered. It will be well for us to commence with the type of bacterial infection which presents the simplest therapeutic problem.

#### (*a*) *Type of Infection where a Single Species of Micro-organism has Penetrated into the Interior of the Body and has established itself in one or more Foci without causing any considerable Destruction of Tissue or Constitutional Disturbance.*

Typical examples of this type of infection are to hand in the case where tubercle bacilli have effected a lodgment in lymphatic glands, and in the case where staphylococci have penetrated into the subcutaneous tissue causing as yet only suppurative (furuncular) as distinguished from necrotic (carbuncular) changes. In this type of infection all but uniformly successful results have in my experience been achieved by vaccine-therapy. In the case of furunculosis those results are achieved within a period of a few days. In the case of tuberculous infection of the lymphatic glands the period required has varied, according to the extent of the infection and the individual patient's power of immunising response, between five weeks and 18 months. It has on the average ranged about six months.

What applies to tuberculous infection of the lymphatic glands applies in a general way also to tuberculous infection of the testicle, and to simple tuberculous infection of the kidney and urinary passages. It applies also—but on this question I speak with a reserve imposed upon me by a very restricted experience—to early cases of tubercle of the lungs.

#### (*b*) *Ulcerative Type of Infection.*

In my experience this type of infection—a type which is met with in connexion with the breaking down of nodules in the deeper tissues, and in connexion with the penetration of superficial infections into those tissues—does not differ with respect to its tractability to vaccine-therapy from the type of infection last considered, except only in the case where secondary infections have supervened. If anything—given the case where secondary infections have either been avoided or been successfully combated—an open ulcer is more tractable to vaccine-therapy than a focus of infection in the deeper tissues which has not yet found vent, or a focus which has not yet penetrated to the lymph-bearing stratum below. It will be clear that as soon as such communication has been effected the lymph stream which has been tapped in the deeper tissues will well up through the floor of the ulcer, coming in contact as it does so with the infecting micro-organisms.

### (c) *Infections of the Skin.*

Infections of the skin fall naturally into two categories. Where the infected skin is comparatively dry and scaly and non-vascular we are dealing with a form of infection which is, in my experience, extremely intractable to vaccine-therapy. A typical example of such an intractable type of skin infection is furnished by the superficial scaly form of lupus which has from the point of view of its superficial resemblance to psoriasis been, very appositely, denoted '*lupus psoriasis*.' Where the microbes affect a region of the skin which is vascular, or where, as in staphylococcal sycosis, the microbes penetrate deep into the skin, we have forms of infection which are very tractable to vaccine-therapy.

### (d) *Infections of Mucous Membranes and of the Glands and Ducts which stand in Connexion with Mucous Membranes.*

Infections of mucous membranes are, in my experience, very readily influenced by vaccine-therapy. Many very successful results have been obtained in connexion with the most various infections of the middle ear, antrum, nasal sinuses, dental alveoli, and salivary glands; also in connexion with coli infections of the intestinal mucous membrane and gall-bladder; and again in connexion with many different infections of the uterus, urinary bladder, and urethra.

I would direct your special attention to two points in connexion with these infections. The first relates to the question of mixed infection. It will be plain to consideration that where we are dealing with bacterial infections of mucous membranes which normally harbour on their surface numerous species of bacteria, the restriction of the numbers of the peccant micro-organism—a restriction which can readily be achieved by vaccine-therapy—is often followed by a multiplication of some other competing form of micro-organism. My second point relates to the case of bladder infections. Here we have generally, in addition to the infection of the mucous membrane, to deal with a bacteriuria. Now it does not by any means follow that the extinction of the infection in the mucous membrane and the abatement of the cystitis—results which are generally readily obtainable by vaccine-therapy—will be followed up by a cessation of the bacteriuria. This last-mentioned result, however, has, be it noted, already been obtained by the agency of vaccine-therapy in a considerable percentage of the cases which I have treated.

### (e) *Infections of Sinuses.*

In my experience very successful results are obtained in these cases when the inoculation of bacterial vaccines is combined with the course of treatment by local lymphagogues which was suggested when we were considering the treatment of sinuses.

### (f) *Mixed infections.*

Before discussing the results which have been obtained by vaccine-therapy in connexion with mixed infections an introductory word may perhaps be appropriate. While the suggestion that mixed infections must be expected in suppurative processes occurring in connexion with surfaces which harbour microbes may quite well be universally acceptable, as not breaking in upon any accepted belief; the suggestion that the question of mixed infection must perforce be considered in connexion with every case of phthisis, lupus, tuberculous caries, tuberculous cystitis, and tuberculous ulceration will, in the very nature of things, be unacceptable to many clinicians. Such a suggestion will be felt to call in question both the clearness of vision of those who in connexion with these diseases have clamoured for anti-tuberculous remedies only, and the critical acumen of those who, without taking into account the fallacies which are incidental to clinical methods, confidently undertake to adjudicate on anti-tuberculous remedies by the observation of their clinical effects upon cases where in addition to the tubercle bacillus other pathogenetic microbes are at work.

Be it acceptable or unacceptable, there is no escape from the fact that practically every case of suppurating lupus is complicated by staphylococcus infection, and that the majority of aggravated cases of lupus are complicated by a streptococcus infection. What holds true of lupus holds true, *mutatis mutandis*, of every tuberculous affection to which microbes can find access.

Having appreciated the magnitude and the far-reaching nature of the issues involved in the treatment of mixed infections we may come to the question of the results achieved in these cases by vaccine-therapy. We have two cases to consider.

(α) *Case where vaccine therapy is directed to the destruction of only one of the infecting microbes.*—In a few instances—notably in two cases where there was found in association with an atypical furunculosis a mixture of streptococci and staphylococci—the extinction of one of the microbes under the influence of the corresponding vaccine has indirectly led to the extinction of the other. This event is, however, extremely exceptional. In most cases the employment of vaccine-therapy directed to the destruction of a single species of microbe leaves the other species quite unaffected. It may even—and this applies in particular to surface infections of mucous membranes or ulcers—conduce to the multiplication of the other—i.e., the originally competing microbe.

(β) *Case where vaccine therapy is directed to the destruction of all the infecting microbes.*—Where in cases of mixed infection measures are taken to immunise the patient against each of the different infections very successful results have been achieved. Successful results have been achieved notably in the case of lupus, cystitis, and endometritis. While naturally the task of the immunisator is more laborious and more intricate in the case where two or three different vaccines are employed, it would seem that the organism of the patient does not find the task of responding to a series of different vaccines (always supposing that each of these is administered in appropriate and properly interspaced doses) more difficult than the task of responding to one variety of vaccine only.

### (g) *Generalised Infections.*

In association with my fellow-workers I have up to the present treated by vaccine-therapy some half-dozen cases of Malta fever and an equal number of cases of streptococcal septicæmia. In each of the cases of Malta fever the course of the disease would seem to have been favourably influenced—the clinical improvement occurring in each case in association with an increased development of antibacterial substances in the blood. In the cases of streptococcal septicæmia the results have been as follows: In two cases—one of these being a case of malignant endocarditis—a complete cure was achieved, in each case in association with a very satisfactory immunising response. In a third case—also a case of malignant endocarditis—the high temperature which had lasted for three months before vaccine-therapy was resorted to came down to the normal under the influence of the inoculations, the patient making an excellent immunising response. In this case death by cardiac complication occurred on the fourth day after defervescence. In three other cases of streptococcal endocarditis the patient succumbed, having in each case failed to make any immunising response to the inoculations.

---

University of Cambridge.—The General Board of Studies will proceed early in the Michaelmas term to appoint to a University lectureship in botany which will be vacant by the resignation of Mr. A. W. Hill. The annual stipend is £100. Applications should be made to the Vice-Chancellor before Oct. 11th.—The dates for the examination in sanitary science are: Part I., Wednesday, Oct. 2nd; and Part II., Monday, Oct. 7th.

The Royal Cornwall Infirmary, Truro.—The annual meeting of the subscribers of this institution was held at Truro on August 12th. The medical report stated that during the past 12 months 417 in-patients had been admitted, a decrease of 56 compared with the preceding year; 1057 out-patients had been treated compared with 1165 in the previous twelve months. The financial statement was satisfactory and showed that a legacy of £1000 had been received from the executors of the late Mr. W. Jackson. The report added that 119 patients had been sent to the convalescent home at Perranporth. Mr. G Petherick has recently given a complete x ray apparatus to the infirmary. The meeting decided, with the approval of the medical staff, to provide a private nursing institution in connexion with the infirmary.

# A Clinical Lecture

ON

# STRICTURE AND TRAUMATISM OF THE VERMIFORM APPENDIX.

## WITH A NOTE ON FOREIGN BODIES IN THE APPENDIX.

*Delivered at St. Thomas's Hospital on May 30th, 1907,*

By WILLIAM HENRY BATTLE, F.R.C.S. Eng.,
SURGEON TO THE HOSPITAL.

Gentlemen,—A narrowing of the lumen of the appendix is very commonly met with when it is opened after removal for symptoms of disease. A small part may be involved or nearly the whole length. Again, there may be found more than one stricture which has interfered with the escape of the contents of the appendix. These strictures may be divided into two great classes—the organic, where there is gross change in the appendix narrowing its lumen, and the functional, in which the appendix is not grossly diseased. In the first class the stricture is most frequently due to ulceration of the mucous membrane, which has subsequently healed and the scar contracted. In a less common variety the stricture is due to a cellulitis of a segment of the appendix, where the mucous membrane is not destroyed. In this case the fibrous tissue is between the mucous membrane and the peritoneum. In a third variety the narrowing of the appendix may be due to the contraction of peritoneal adhesions or to the presence of pathological processes (e.g., carcinoma of the cæcum) which have secondarily involved the appendix. The cases in which the lumen of the appendix is narrowed in one place, though the organ is healthy, fall into two great classes. In the first the appendix is kinked or bent, which functionally narrows its lumen, though it is not obviously diseased. Oblique insertion of the appendix into the cæcum also comes under this head. In the second class the appendix is pressed from without, and its contents dammed up, as in carcinoma of the cæcum.[1]

It may be stated that cases of stricture are not often found without a complication of chronic inflammation of the wall, so that the appendix with a strictured lumen and a stiffened wall is very greatly hampered in its attempts to empty itself. An appendix so circumstanced is especially liable to trouble, for a recrudescence of inflammation may cause a complete closure of the passage and a rapid accumulation of inflammatory fluid and pus beyond, which will escape by ulceration or gangrene of the wall of the appendix, giving rise to the most serious inflammation of the peritoneum with which we have to contend. A definite organic stricture is found in more than half the cases accompanied by local suppuration in the surrounding peritoneum. Less acute processes may be followed by the formation of a distended appendix beyond the stricture into a mucocele or empyema of subacute character.

### Clinical Signs.

You will naturally want to know the signs, if there are any, which enable us to recognise a strictured appendix before removal from any other form of disease of that part. In the majority of instances it is impossible because a single attack of appendicitis due to stricture resembles one caused by inflammation of the part having a different cause, but when you are confronted with an attack which is more severe than others which have preceded it, whilst the others had given evidence of increasing severity, as they increased in number, then you will not be far wrong if you venture the opinion that the appendix is strictured. Some will have had vomiting as an initial symptom, whilst in others the pain will have been severe, whilst frequently there will be no local swelling noticed until the latest and most severe attack. Not uncommonly you will find in the situation of the appendix a thickening or lump which indicates the point where inflamed omentum became adherent to the appendix and closed a perforation which had occurred in it, as usual, beyond the stricture. In these cases the stricture was probably situated towards the distal end of the appendix.

It is of interest to note the severity of the stricture in some cases in which the appendix is removed after a single attack of inflammation. The patient may positively affirm that the attack from which he has just recovered is not only the only one he has had but that he has never had any trouble before in the abdomen. This may be confirmed by the friends through ignorance of the real facts of the case.

There is here a long appendix which I removed on April 30th from a man, aged 19 years. It is, as you can see, tightly strictured at the proximal end, and at the time of removal was tensely distended with about five drachms of fluid fæcal matter and inflammatory products, so that it extended like a bent fore-finger from its origin to an attachment in the retrocæcal fossa. Here it was buried and firmly bound down by old adhesions. Not far from the proximal end was a patch of lymph underneath which was the discolouration of impending gangrene. All muscular contractility seemed to have gone from this appendix, and when emptied the walls were thin, soft, and flaccid. This was 20 hours after the commencement of symptoms and shows the result of excessive distension. Here it was quite apparent that there had been pre-existing trouble about the appendix of which we could get no history. It was stated that he had had "abdominal chills," but never any pain with them. A more accurate history was obtained later, making it very probable that the patient had made light of his troubles during "the chills" for fear of alarming his parents; and that they were ignorant of the true facts of the case. Indeed, from his account he had suffered a good deal during the previous two and a half years. The first attack of definite abdominal trouble lasted a week and was called "typhoid"; a more severe illness had occurred five months before the removal of the appendix, but before and since this illness he had suffered considerably at times from "stomach-ache," especially on exertion. You can imagine the effect on the peritoneum of this quantity of fluid had it escaped into the peritoneal cavity; luckily we were able to prevent this and the case ran a normal course.

Several cases could be cited which show this want of proportion between the extent of the disease and its apparent duration. One of them was that of a medical man who is a careful and unprejudiced observer. In November, 1904, he had an attack of pain in the abdomen running down to the penis and groin but not followed by any alteration in the character of the urine. It lasted a few hours and he did not take his temperature. On Friday, March 3rd, 1905, he had another attack lasting longer. Next day his temperature was 101° F. and on the day after that 99°. He had no vomiting in either attack but much pain, whilst during this illness he had noticed some swelling. On the former occasion he went about doing his visiting but this time he was not permitted to do so. He came to see me on the 7th and presented a tender swelling of about the size of the forefinger just above Poupart's ligament on the right side. When the appendix was removed on March 16th it was found adherent to surrounding parts, whilst the omentum was attached to, and covered, a recent perforation. It was unusually thick-walled and when opened we found in it a stricture which almost obliterated the lumen to within three-quarters of an inch of the extremity, beyond which was the perforation. This stricture was about three-quarters of an inch long. He has had no abdominal pains since.

### Concretions and their Effects.

In connexion with the subject of stricture of the appendix it would, perhaps, be well to discuss briefly the causation of such a condition, more especially from the point of view of the possibility of traumatism as an exciting cause. For this purpose we must consider the various bodies which form in, or enter, the appendix from the large bowel. The husband of one of my patients advised his wife to have the appendix searched after removal for anything she had lost during the preceding six months. Certainly the list of things which find their way into it is a very large one, but we may exclude from it, so far as our purpose to-day is concerned, the intestinal parasites It is not usual to find foreign bodies forming part of a concretion; when they do so the combined result is generally that of an ordinary concretion. These concretions are composed of fæcal matter which has undergone a hardening and excited a secretion of mucus from the surrounding glands. In experimentally isolated loops of intestine a somewhat similar process can be seen. Structurally, these calculi sometimes have for a nucleus some foreign body, but much more commonly a harder fæcal mass, which grows by the inspissation of mucus, &c., deposited on it by the tubular glands. It is very probable that most of them are formed as the result of the action of micro-organisms, as in the case of gall-stones. This outer coating of moister, fresher material offers to the organisms which are present, or which gain access from the cæcum, a suitable nidus for their growth.

---

[1] Battle and Corner: Surgical Diseases of the Appendix, &c., p. 41.

The presence of a concretion is therefore a danger and a pretty sure indication of the advisability of the removal of the organ. They are most common between the ages of 15 and 30 years, the period of the greatest frequency of appendicitis, especially in its more severe forms. "It is well known that such lymphoid structures as the tonsils may become tough and fibrous, without the occurrence of any acute inflammatory attack. So will it be to some extent with the appendix, and the results of such chronic inflammatory change will be, at least, impairment of the completeness of peristaltic action. As a result, cæcal contents may enter the interior of the appendix from above, and the material already in that organ will be imperfectly expelled. This may be aided or produced by the anatomical way in which the appendix is inserted into, or originates from, the cæcum. And the common state of affairs is to find a functional stenosis of the lumen such as that arising from kinking or obliquity of the appendix—i.e., not an intrinsic but an extrinsic stricture. The retained appendicular secretion will later become inspissated. The presence of concretions in calculi may therefore be regarded as evidence of some pathological change."[2] Such a concretion may remain quiet and this is especially so in older people, in whom lymphatic nodules atrophy, the glandular secretions become more scanty, and, we may add, the mode of life less active. In these circumstances the concretion may become quite dry and inert. Their size varies considerably, probably those the size of a cherry-stone are the most common. When I was a student it was taught by some that the cherry-stone was frequently found in the appendix and some of us called it "the trap to catch a cherry-stone." Examination has, however, proved their invariably fæcal origin.

The number of concretions that may be found in any appendix is uncertain; although one is usual I have seen as many as five. To consider that the presence of one of these in an appendix abscess will obviate any necessity for removal of the appendix is, therefore, a mistake. You cannot tell how many are left behind, for they are very rarely faceted. Moreover, it by no means follows that the appendix which remains is not a source of danger on account of its diseased condition, quite independently of the escaped concretion.

The appendix removed from the patient operated on during Tuesday afternoon, May 14th, at the request of Dr. Hector Mackenzie, is a good example of the termination of some of the cases of this kind, where a concretion is associated with a strictured appendix. At the operation the signs of "suppuration" and peritonitis were immediately visible, yellowish, thin, very offensive pus escaping at once on the opening of the peritoneum. The appendix could be felt lying in adhesions to the outer side of the cæcum. To get at these it was necessary to enlarge the wound. The tip of the appendix was lying in front of the right kidney and presented at its apex a gangrenous opening in which a concretion of the size of a cherry-stone was engaged. In order to remove the appendix it was divided between forceps at its proximal attachment, then the meso-appendix separated towards the tip, vessels being clamped as they showed. The attachment to the cæcum was very close and firm in parts and the appendix had to be separated as from a solid bed. When opened up it was found to be a good deal thickened in all its coats, whilst the lumen was very much diminished in size by fibrous contraction which extended from within an inch of the tip upwards towards the cæcum for about half an inch. In the distal part there was the concretion which had not been able to effect its escape, whilst the lining membrane was changed into a gangrenous ulcer which had perforated the wall. In this instance a smaller concretion was found outside the appendix floating in the pus.

Here the concretions were retained in the end of the canal by the stricture, which had been the result of extensive inflammatory changes, not confined simply to the site of the stricture or to the mucous membrane. As the concretion grew in size, and the inflammatory exudation became organised into fibrous tissue and contracted, there came a time when the outer surface of the concretion, crowded with bacteria, came into firmer contact with the mucous membrane surrounding it without possibility of escape from the embrace, and ulceration with quick bacterial invasion of the surrounding parts ensued, ending in gangrene and perforation, a process not unlikely to have been hastened by the impossibility of escape of the inflammatory exudation and pus which would distend the part beyond the stricture. Probably the larger concretion completely blocked the strictured lumen whilst the smaller one was forced towards the tip, as it was the one to escape when the ulceration gave way. This patient has done well. A similar condition results if the concretion is kept in by swelling of the mucous membrane to its proximal side whilst fluid accumulates beyond.

### THE EFFECT OF EXTERNAL INJURY IN PRODUCING APPENDICITIS.

A very interesting question is the influence of the presence of a fæcal concretion in determining an attack of appendicitis after injury. Dr. H. Kelly collected a series of 50 cases in which it was alleged that an attack resulted as a consequence of injury.[3] "In the majority of cases pain was complained of immediately or else within a few hours. It is noticeable that whenever an interval of weeks or months elapsed between the accident and the well-defined symptoms of appendicitis there were more or less well-marked symptoms of continuous digestive disturbance or, on the other hand, there was a history of repeated attacks following the injury and before the patient came under observation for appendicitis." "In 40 out of my 50 collected cases the appendix deviated in some way or other from the normal and 30 out of the 40 abnormal appendices were noted as containing concretions; in seven of the remaining which were without a concretion there was evidence of old adhesions; of the last three, one was flexed on itself, one was cystic, and one was unusually short and wide. No case has as yet appeared in which it has been shown that an injury *ab externo* has produced an appendicitis in a previously normal appendix."

The importance of this question will probably be more evident to all when the new Employers' Liability Bill with its more comprehensive compensation clauses comes into operation, for it is not unusual to find acute appendicitis as well as more serious conditions, such as perforations of the digestive tract, ascribed by the domestic servant to strain or to overlifting. Now how much more will this be the case when the statement may carry with it a large sum for compensation to the sufferer or her friends. Cycling and motoring have been freely accused of causing appendicitis, but there is nothing in my experience that is so potent a factor in developing that condition, when latent, as the riding of a motor bicycle. Here, again, there is pre-existing disease of the appendix.

In some instances the concretion contains some foreign substance which has been caught up and hidden in the hardening mass after its entrance into the appendix. In all probability many a wanderer beyond the valve of Gerlach is swept back again by a gush of fluid from the irritated chamber into which it has intruded so unexpectedly and passes away with the stream outside, leaving no evidence of its visit.

### INCREASE OF DISEASE OF THE APPENDIX IN RECENT YEARS.

There can be no doubt in the minds of those who have been at all intimately concerned in the surgical work of our hospitals during the last 25 years that appendicitis is much more common in every one of its manifestations than it was at the commencement of that period or even half-way through it. The increased number of people who are now enabled to live to the age when its manifestations are most common, in consequence of the greater efficiency of public hygiene and the care of infant life, will not account for it. We used to see a limited number of cases of acute peritonitis which were called idiopathic, when no post-mortem exaimnation was made, but those examined were almost invarably found to be dependent on gross lesion of the appendiix. Dr. Samuel Fenwick only found 19 cases of disease of the appendix in the post-mortem records of the London Hospital over a period of 40 years preceding 1884. The number of cases of acute peritonitis has increased, but the naked-eye appearances are not changed as regards the disease of the appendix on which that affection depends. Yet it is more especially in connexion with the milder attacks that there is a change—and a very marked change indeed. It is no use saying that the cases were overlooked, that is to reflect on the diagnostic acumen of men like Peacock, Murchison, Bristowe, Ord, and Payne amongst the older physicians, and to some extent also upon the members of the staff to whom the care of the medical cases is now entrusted. It is very easy to make the charge, "They were overlooked," but the facts are against the truth of it. We are therefore compelled to the only conclusion that is possible, and that is that disease of the appendix is a much more constant source of trouble now than it was; in 1893 the name "appendicitis" appears for the first time in the hospital reports, only three cases being tabulated under that head, whilst last year the number was nearer 250. Cases of perityphlitis were tabulated in the medical report but were not numerous.

---

[2] Op. cit., p. 52.

[3] Kelly and Hurndon, p. 806.

Why is this? We may take it the human body as a germ-carrying organism is much the same now as it has been from the earliest time; also that the bacillus coli of the individual with its potentiality for mischief has been much the same through the ages as the specimens which are captured in the digestive canal or in the peritoneum surrounding an inflamed appendix at the present day. That it was in past times a very virulent organism may be taken for granted, for cases of fulminating appendicitis were known years and years ago and have doubtless caused the hanging of more than one innocent person on the accusation of poisoning.

### SOME THEORIES OF CAUSATION.

There is a general agreement amongst pathologists that appendicitis is a disease caused by the action of the germs which should normally be confined to the interior of the intestinal tract. It is only when they gain admission to the tissues outside the epithelial lining of the tract that they become dangerous and cause inflammatory changes. Is there anything in our way of living or in the food which we eat that can in any way account for the fact that they pass this epithelial barrier more frequently now? Has anything been introduced during the last 30 years or so which can be pointed to as a possible cause? We do not eat anything like the same amount of meat as our forefathers of a century ago did nor are our dinners as a rule so long. We cannot, therefore, blame butchers' meat, as some appear anxious to do, although the amount eaten may be out of proportion to the exercise taken. There is in the museum of the Royal College of Surgeons of England a small lump of solder which was found in the appendix of a soldier during the South African war, but this is probably an example of the evil of the hurried bolting of tinned meat, and the foreign body would have been detected in ordinary circumstances.

Through the kindness of Mr. Eisenmann I was enabled to make some inquiry into the value of the opinion that the enamel of cooking vessels was a likely source for particles which might perhaps lodge and damage the mucous membrane of the appendix. It has been stated that the enamelled ware has changed its character; that in the first instance it was very good, but the price was high. There was a great demand for a lower-priced article and soon this want was supplied, only the lining enamel was of inferior quality and apt to chip and crumble away during the preparation of food. A paper[4] had an article on this subject by Dr. Villaret of Posen, who, after an investigation of the subject, came to the conclusion that there was no evidence of detachment of particles which would do any harm.

The question for solution is whether there is anything which could produce a superficial lesion and yet give but little evidence of its action—something which is universally liable to be taken by old and young, rich and poor, by the child just able to move about and by the octogenarian, by the cottager on the hill-side and by the prince in the palace; something which is generally spread over the surface of the civilised earth, and something which is not likely to attract the attention of the person taking it. At one time I thought perhaps it would be found that some of the harder samples of wheat might during the process of grinding produce siliceous particles which could resist the action of the gastric juice and cause trouble in this way. Mr. Jago, the well-known expert on wheats and flour, kindly called and talked the question over with me; he considered that even the hardest of Arabian wheats are finely ground by the rollers now used and the product satisfactorily screened. Some time ago Mr. J. Bland-Sutton[5] wrote an interesting paper on foreign bodies in the intestines and gave an account of the care which was exercised in the mills to exclude foreign substances. Before wheat is passed over the rollers it is passed over magnets, which extract from it all pieces of iron which have found their way into it during its journey from the field to the mill. Other foreign bodies are also extracted.

### A POSSIBLE CAUSE FOR THE FORMATION OF STRICTURE.

The question then presented itself, Is it possible that during the process of grinding the flour some foreign substance has been or can be introduced? I have been informed that roller-milling was started in Austria many years ago and that in the first instance porcelain rollers were employed; it was then taken up in America and steel or iron rollers were substituted; that the primary rollers are fluted in order that they may exert a more crushing effect on the hard wheat which is ground by them; and that in a variable time this fluting is worn away and a fresh roller has to be put in. There is a difference of statement as regards the durability of these rollers, which it is difficult to understand, excepting on the supposition that they vary much in their hardness. Of course, there is an immense amount of flour put out by every mill as a result of the work of any two of these fluted rollers in comparison with the fragments of steel or iron which would come away at the same time. Moreover, these fragments would necessarily be widely scattered, and if of any appreciable size only present in the flour which had been passed through the larger screens. I imagine that a small, irregular particle of steel or iron escaping from the faulty or worn roller might pass into the digestive tract by the mouth, it would escape destruction in the alimentary canal, and, when it had passed through the ileo-cæcal valve, fall downwards by its own weight, going sometimes into the opening of the appendix. In any situation it would come into contact with mucous membrane and probably be washed on again by the fluid contents of the part and disappear. This would not be unlikely to happen in the appendix, for a muscular contraction would follow as a reflex result of the localised irritation caused. Some abrasion of epithelium if the foreign body had lodged between folds of the mucous lining might be expected. Increased secretion of mucus would be the result and again the foreign body might be carried away in the right direction and disappear. Sometimes this abraded surface would not heal, and unusual exertion or a stretching of the cæcal wall as a result of over-eating would throw a strain on the part. The abraded surface would give the bacteria their opportunity and the added strain cause them to spread more widely when they had passed the breach. Even then the parts might recover and the patient be unaware of anything wrong, but following on the inflammation with abrasion of the mucous membrane would come fibrosis with its resulting contraction, possessing unusual importance in a canal with such a small lumen.

It is interesting to note that this lesion of the appendix is never constant in position like stricture of the urethra. Sometimes it is at the orifice, more commonly at the distal extremity, and this in appendices which resemble one another very closely and are not deformed or displaced. Of course the extent of the disease varies very much in different individuals, as does also the number of strictures. Having this theory in mind, a look-out was kept for a possible body of the kind imagined, it being thought that perhaps one might be found which had escaped expulsion, but for a long time without success.

A boy, aged 13 years, was in Leopold Ward from Feb. 21st to March 11th, 1905, for abdominal pains of 14 months' duration, worse after walking. He also gave a history of dysuria. A careful examination was made of the urinary system by means of the x rays, &c., but nothing abnormal was found in it or in any other part of the body. Advice was given against operative interference, although his mother was very anxious that something should be done. He was readmitted on March 15th because his mother brought him back, saying that he had been much worse. An attack of pain had come on after his return home and he had been sick and giddy with it. It was definitely on the right side of the abdomen, and although not severe enough to double him up, still it had been very bad and paroxysmal. There was nothing discovered to indicate the source of the pain, but at the request of his mother the abdomen was explored on March 17th. As a thickening could be felt in it and nothing else presented any abnormality the appendix was removed. It was pelvic in position but not adherent.

---

[4] Deutsche Medicinische Wochenschrift, Jan. 1st, 1904.

[5] THE LANCET, Oct. 24th, 1903, p. 1149.

It contained a soft fæcal concretion in the distal part and a slight inflammatory thickening in the wall to the proximal side of it. Two calcified glands were removed from the mesentery of the small intestine. When the appendix was examined microscopically superficial erosion of the mucous membrane was found. In the concretion was a small irregular fragment of iron, the nature of which was confirmed by Mr. J. E. Adams, then surgical registrar.

We had in this case the early stage of the formation of a stricture, the abrasion of epithelial membrane with a thickening outside, and a foreign body which had been regarded as likely to produce such a condition if it were ever present in the appendix. Had it done so? The condition of affairs is very like that of someone who visits a friend's house and finds from the disarrangement of its contents evidence of attempted burglary. He searches about for a possible intruder and finds a man he has suspected for some time as a man likely to do such a thing if given the chance. The man who was discovered would deservedly be given in charge on suspicion and further inquiries made. A medical man who knew that I was interesting myself in the question of foreign bodies of this kind when under surgical treatment in London produced a piece of metal which he had found in his bread at lunch. It was of somewhat similar kind.

A statement was recently made on the authority of an American physician in an English paper that appendicitis was caused by white flour. The reasons given were the following. When white milled flour was introduced into the cities of a certain State appendicitis began to be prevalent, but it was not yet found in the country. As it became cheaper it was introduced into the villages and appendicitis became common there, yet the negroes escaped. When, however, the flour became so cheap that it was more profitable to buy it than to grind the corn at home, then negroes began to suffer from appendicitis.

It must not be forgotten that the greater prevalence of appendicitis was heard of first in the United States, from which so much of our flour comes, before we saw much of it, and it had been a good deal written about before the reason for doing so was apparent by any increase of the disease in this country. A few years ago windmills were conspicuous in every landscape in England and our corn was ground between stones in the districts where it was grown. It can no longer be ground by the old methods at a profit and flour mills are only to be found in the towns, worked by machinery. But most of our supply comes ready for the market from beyond the seas and it is mostly ground up by metal rollers. The frequency of the disease in certain districts and families would be accounted for by the delivery of flour to that part by a certain baker who would get his flour from regular agents, who in their turn would patronise certain mills. The particles caused by the breaking up of a roller in consequence of a flaw or imperfect material would flow therefore to a definite area of distribution.

Such particles as I have imagined to come from the rollers would necessarily be comparatively few if the amount of flour is considered on the output of any large mill. They would not do harm in the stomach or intestine, but when they did lodge in the human appendix would be dangerous from the small size of its lumen. The remedy would be the use of magnets to withdraw such particles from the flour on its way from the rollers to the bags, for although such fragments might not pass the screens through which the finer qualities pass, they might penetrate some of the others, and various qualities might be mixed again by those through whose hands they went on their way to the consumer.

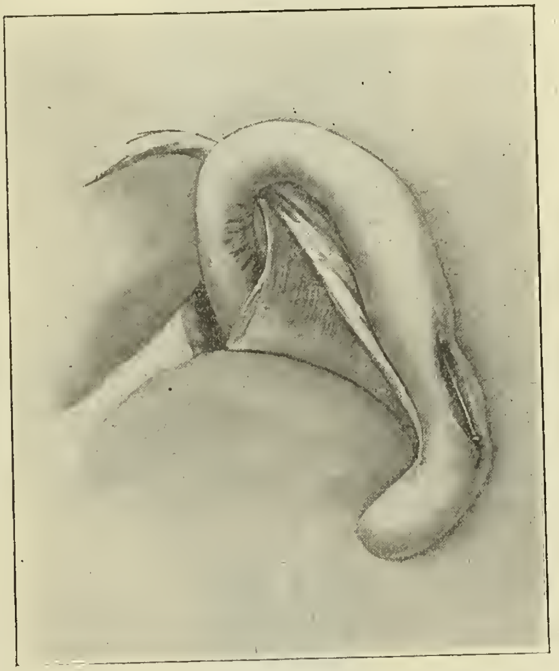
## A NOTE ON FOREIGN BODIES IN THE APPENDIX VERMIFORMIS.

The behaviour of a foreign body in this part of the digestive system naturally varies very much according to its nature and size, and it is interesting to observe the history of some cases in which even so-called "innocent" bodies have been found, such as hairs. At times, then, the visitor does not present irritating qualities and is tolerated, no reflex action being excited, or perhaps there is some stiffening of the appendix as a result of previous inflammation, and it cannot give response to the stimulus which it has received, and so clear itself of the intruder.

Dr. J. A. Macdougall[6] of Cannes has related an instance which is the best I know showing the disturbance excited by the impaction of an irritating foreign body in the appendix. A Frenchman, aged 30 years, who never previously had any abdominal trouble, was whilst dressing in the morning conscious of some uneasiness in the lower abdomen on the right side. Jokingly he told his wife that he had an "*appendicite*," but as the crampy feeling quickly passed away so did his thought concerning it. An hour after his midday meal, when walking in the street, he was seized with such intense abdominal pain that he became rapidly collapsed. He was greatly affected, as evidenced by his complaints, by the pale, clammy state of his skin, by his anxious, drawn face, by his quick, feeble pulse, and by the intense rigidity of the muscles of the right iliac fossa. Six hours later, after a dose of morphine, the severe pain returned with great vital depression, so that one physician did not think it was worth while to do any operation. The state of the appendix appeared to be normal and so did everything around. "Its proximal third was, however, harder, thicker, and firmer than the rest of the organ, but it bore on its surface no evidence of any notable lesion. On examination after removal it was discovered that a grain of barley still encased in its outer husk was lying transversely to the axis of the appendix with its sharp and pointed extremity buried in the submucous and muscular tissue and stretching—without perforation—the peritoneal covering of the organ." He regarded it as a case of true appendicular colic and considered the personal element was a very important one in the case.

Dr. Mitchell has written[7]: "The appendix would seem to act especially as a trap for pointed bodies and for small heavy objects like shot or bullets. Conspicuous amongst pointed bodies are pins, which are the commonest and at the same time the most dangerous of all foreign bodies."

FIG. 1.



A pin in the vermiform appendix, which perforated it by ulceration and caused a fatal peritonitis. (From a specimen in the museum of St. Thomas's Hospital.)

Pins enter the appendix head first as they have come along from the stomach, but they cannot escape in the same way, and perforate by ulceration the wall of the appendix sooner or later, producing localised abscess or more frequently a fatal peritonitis[8] (see Fig. 1, from a specimen in the Museum of St. Thomas's Hospital). In a large proportion of these cases hepatic abscess has been a complication.

Of the heavier bodies which enter the appendix by far the most common are shot pellets, obtained through the hurried or careless eating of rabbits or game. If the shot remains free in the appendix it apparently causes no injury; probably when incorporated with a concretion it chiefly produces an effect by the increased weight which it adds to it. The history of one such case is as follows. A woman, aged 60 years, was seen for the first time on Feb. 22nd, 1906, and the appendix removed. She was a stout patient with a history of bilious attacks, and jaundice on one occasion. Four days before operation severe abdominal pain came on when sitting quietly in church, ascribed to colic from eating dressed crab on the previous evening. The abdomen was greatly distended and motionless. Operation for general purulent peritonitis was performed. There was much very offensive pus. The appendix, a large one, was lying to the outer side of the cæcum and presented an extensive gangrenous perforation. There was a large concretion made up of fæcal material in which were five shot (No. 5½ or 6) and a metallic particle. Some of them were marked by contact with the bones of the animal or bird struck (see Fig. 2). The specimens are now in the museum of the Royal College of Surgeons of England. It was stated that this patient was a somewhat hurried eater, also easily flurried.

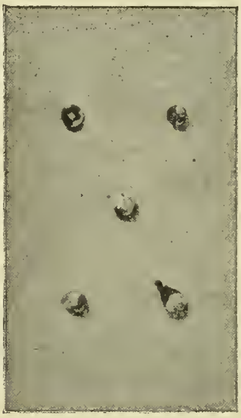
---

[6] THE LANCET, Feb. 21st, 1903, p. 506.

[7] Johns Hopkins Hospital Bulletin, 1894.

[8] It is of interest to recall that the first case of disease of the appendix known, the one recorded by Mestivier in 1759, was caused by a large pin, which had produced ulceration and peritonitis.

FIG. 2.



Five shot found in a concretion lying in a gangrenous and perforated appendix. (From the museum of the Royal College of Surgeons of England.)

Kelly and Huindon give a reference to a paper by Hevin [9] who says, "A great quantity of shot are sometimes noticed collected in the intestines, especially in the cæcum and appendix, without having caused the slightest inconvenience." One wonders if the subject had undergone the old-fashioned treatment for supposed intussusception. The same authors refer to a case by Holmes, where 122 robin shot were found in the vermiform appendix.

FIG. 3.

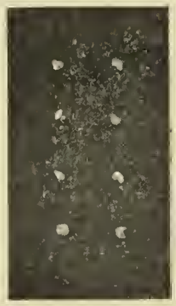
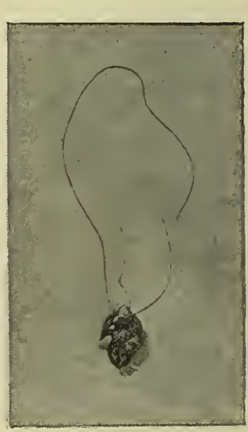


Fig-seeds found in a concretion in an inflamed appendix.

Apple-pips, grape-seeds, and other vegetable substances are apt to find their way past the valve of Gerlach and may be found loose or incorporated in a concretion. The illustration (Fig. 3) (taken from a specimen in the museum of the Royal College of Surgeons of England) is of some fig-seeds which formed part of a concretion, the history of which is as follows. The patient was a muscular and active man, aged 35 years, who came under observation in 1906. There was a history of a definite attack of appendicitis, with marked pain in the iliac fossa, but no vomiting, two and a half years before. He was in the house from 10 to 14 days and found that any attempt to lift the right leg occasioned pain. He was unable to do much for six weeks afterwards, and almost ever since had had aching in the appendix region after exertion. The appendix was 4½ inches long, covered in with peritoneum, and having an S-shaped curve over the brim of the pelvis, up and then down. The tip was buried in the wall of the cæcum. On section there was evidence of former inflammation and the distal one-third was diminished in size. A small concretion was present containing portions of fig-seeds. The patient was very fond of figs. The presence of the irregular broken seeds appears to have made the concretion more irritating than is usual.

Hairs are occasionally found forming the nucleus of a concretion and may be obtained from many parts of the body. Bitten off ends of the moustache in men, hair from the head in females, and sometimes a bristle from a tooth-brush. In 1790 [10] it is recorded for the first time that a hair was found forming a nucleus to a concretion within the appendix, and it is interesting to note the effect produced by such hairs when in that part of the intestinal canal.

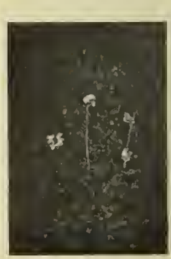
FIG. 4.



Hairs caught in a concretion removed from a gangrenous appendix which caused fatal peritonitis. (From a specimen in the museum of the Royal College of Surgeons of England.)

In Fig. 4, taken from a specimen (No. 2559 D) in the museum of the Royal College of Surgeons of England, the hairs are fine and long. They are mainly two in number and caught by concretions which were in a gangrenous appendix at the time of removal. The patient was a little girl, aged three and a half years, under my care in St. Thomas's Hospital, with extensive purulent peritonitis, which proved fatal, in April, 1904. The hairs evidently came from the head of the child.

FIG. 5.



Four minute concretions with two fine hairs attached, removed from an appendix which appeared healthy but had given rise to symptoms of appendicitis. (From the museum of the Royal College of Surgeons of England.)

In Fig. 5 the longer of two hairs was a stiff bristly hair, the origin of which was doubtful. (No. 2559 G, museum of the Royal College of Surgeons of England.)

---

[9] Mémoire de l'Academie Royale de Chirurgie, 1743, tome i., p. 640.

[10] Encyclopédie Méthodique.

A woman, aged 24 years, was admitted under my care into St. Thomas's Hospital on Jan. 25th, 1904. She stated that for three and a half years she had suffered from recurring attacks of pain in the right side of her abdomen. These attacks had been of a more severe character of late. During an attack she was feverish, felt sick, and had severe pain in the right iliac region. She had had very numerous attacks of this nature and stated that she had never been free from pain for more than a few hours during the last three weeks. When the appendix was removed it appeared normal, but contained a short dark hair with follicle attached. The following is the description of the specimen in the museum catalogue: "Four minute concretions, in connexion with two of which there is a fine straight hair, the longer of which is $\frac{3}{8}$ in. long."

In a third case the hairs were apparently swallowed during the course of the patient's occupation, although the man denied it. They were not human hairs. (See Fig. 6, from the museum of the Royal College of Surgeons of England.)

FIG. 6.

Small fæcal concretions, one of which contained numerous bristles, removed from an inflamed appendix. (From the museum of the Royal College of Surgeons of England.)

A youth, aged 19 years, a photographer's assistant, was admitted on April 13th, 1907. He stated that three years ago he first had pain in the iliac fossa which lasted for about three weeks. About six weeks ago he again had pain in the same part; it came on suddenly and lasted for about three days; it then became better, but the patient kept having attacks of pain for about two and a half weeks; the attacks came on about four or five times a day and lasted for about from half an hour to an hour. He was not sick but suffered from constipation. The pain was always localised to the right iliac fossa. On examination there appeared to be more resistance to pressure than normal, but there was no tenderness. The appendix was found at the operation (on April 17th) to be three and a half inches long, hanging over the pelvic brim. The meso-appendix was very vascular but without adhesions. The lumen was patent and the mucous membrane was catarrhal. Several soft fæcal concretions were present, as was also a considerable amount of soft fæcal matter. There were numerous multi-coloured bristles in one concretion (? camel's hair brush).

In a fourth case there were several minute hairs mixed up in a concretion; they were probably human and might have been bitten off from the back of the hand. The patient, a boy, aged 13 years, had his appendix removed on March 30th, 1906. Six months before he had had an attack of abdominal pain, most severe over the appendix region. He had had other attacks since lasting from seven to ten days. A sort of aching over the appendix region since the first attack which ceased for a day or two and then returned. Seven weeks ago he again had a more severe attack. When apparently better and told to get up the pain returned at once on walking about. Some thickening could be felt in the region of the appendix. The appendix formed part of the wall of an old abscess cavity, retrocæcal, it had a recent catarrh in the upper part and a half-inch concretion in the distal part, its lower pole causing gangrenous ulceration with irregular perforation close to the tip. The concretion was hard and contained a few short hairs. Probably in all these cases the hairs of the stiffer kinds projected beyond the concretions which held them and caused spasmodic attacks of pain as a reflex effect of irritation of the mucous lining of the canal. The lumen of the canal is of such a comparatively small size that the ends of the hairs must have been almost constantly in contact in some part of it.

---

# An Address

ON

# THE NATURE AND MANAGEMENT OF HYPERTROPHY OF THE HEART.

*Delivered before the Æsculapian Society,*

BY ALEXANDER MORISON, M.D. EDIN., F.R.C.P. LOND. & EDIN.,

PHYSICIAN TO THE GREAT NORTHERN CENTRAL HOSPITAL.

GENTLEMEN,—Muscular textures, whether somatic or visceral, if not exhausted and overthrown by too sudden and violent a call upon their reserve power, slowly but certainly endeavour to adapt themselves to fresh demands upon their energy. While this is a general law, it appears to find expression more emphatically in some individuals or organisms than in others. The nutritive powers in some persons—cellular, hæmic, and neural—are greater than in others, if we may judge from the greater hypertrophic increase of over-exercised organs in them as compared with a similar increase under like circumstances in others. The right arm of every village blacksmith does not attain the same size, although one may forge the same number of horse-shoes, as his neighbour whose muscular development exceeds his own. Some factor in his nutritional power falls short, or he has come into the world with a smaller amount of the hypertrophable material. The quantity of such material is fixed in most organs at birth. This fact has a certain interest as it perhaps helps to explain the more easy attainment and maintenance of compensatory hypertrophy in some patients as compared with others. It was shown by my old teacher, Professor Kölliker of Würzburg, that in organs which do not add *new growth* to hypertrophy there is no increase in the number of the elements in an enlarging organ, but an increase in the size of the individual elements. He proved this by the simple process of counting the fibres and noting their individual increase and his contention has never been disproved, although it has been disputed.

This is the great distinction between the increase in size of the cardiac as compared with the uterine muscle. In the latter organ the muscular texture, dealing with a special office of a temporary if recurrent kind, shows an increase in the number of its elements, and the office once performed the new growth returns as we know by involution, that is, by the degeneration and absorption of the added elements, to its original proportions and, presumably, to the original number of its elements.

With all increased exercise of an organ there is an increased blood-flow towards it, and in the arteries of the gravid uterus this increase is manifested by a notable increase in the size of the blood vessels which, as in the case of the other muscular elements, can only be accounted for by an increase in the number of the muscle cells constituting the muscular coat of the vessels.

It has been thought by some that with this actual increase in the number of the organic and vascular muscular elements there is also an increase in the size of the uterine nerves, but there is reason to doubt the correctness of this conclusion in the main as regards the latter. They certainly look larger and are more succulent or swollen in appearance, but there is not sufficient evidence of an increase in the number of the neural elements. It is a point which I investigated with some care in a series of lectures which I delivered in Edinburgh in 1897 and 1898 on the innervation of the viscera. In the course of that investigation I made some observations which appeared to me to account for the adequacy of the original nerves to supply the greater area of distribution in the gravid uterus, by the possession of a remarkable degree of coiling or tortuosity by these nerves in the virgin state, which is undone or paid out in great measure in the gravid uterus, and which returns to the original degree of tortuosity after parturition. The mode of ultimate distribution to the muscle elements in the uterus is on the usual lines of triradiate nuclear points, that is, by dichotomous dispersion. It is possible that in this ultimate distribution there may be some additional production of nerve fibres to supply the added muscle cells, which, of course, must degenerate with the disappearance of these added elements, but on this point I cannot speak positively, and know of no positive results obtained by others. The absence of such peripheral production of nerve fibres would, however, argue the exercise of muscular power without innervation, and that is contrary to all probability. There is certainly no apparent increase in the number of nerve fibres in nerve *trunks*.

In the case of the enlarged heart there is apparently no new muscle produced. Its overgrowth is on the lines of its normal increase from childhood to adult life, and while the coronary vessels gape more in the hypertrophied than in the normal heart there is no such increase in their size as in the vessels of the uterus. While the cardiac nerves, moreover, possess tortuosity, this is not so marked as in the uterus, and there is no evidence that there is any actual increase in their size or in the amount of nerve tissue in the hypertrophied as compared with the normal organ. The peculiar system of fibres in the heart known as the tract of His, and which has been so exhaustively studied by Tawara and others, appears, so far as our present knowledge goes, to show neither increase when the rest of the heart is hypertrophied nor degeneration under circumstances in which one would *a priori* expect to find it. Its function is supposed to be solely the conduction of muscular contraction from the auricles to the ventricles, but an adequate knowledge of the functions of this interesting tract is not yet possessed by us.

When the heart, dealing with an obstacle in the normal and easy transmission of blood, hypertrophies in just proportion to the additional work thrown upon it, it is said to be "compensated." That is, the inadequacy of the normal heart to deal with an abnormal obstacle is said to be made good by its additional growth and power. It can easily be understood that such a condition of "compensation" is one of a more or less uncertain state of equilibrium between obstacle and heart power, and this uncertainty is proportionate to the character of the obstacle. Thus, one has met with cases of mitral regurgitation of moderate degree which have not been incompatible with a long and active life. I have, for example, had a patient under my care, well over 70 years of age, whose history established the fact of cardiac valvular lesion at the age of 14 and who had, nevertheless, reached his venerable age as an active warehouseman without accident. On the other hand, an early aortic regurgitant lesion could not be expected to be compensated for so long a period, and peripheral or renal causes of cardiac disablement and hypertrophy would likewise tend within a shorter time to tip the balance of compensation deathwards.

The earlier writers, like Hope, regarded hypertrophy as a disease. Writers of a later period, like Sir James Paget, regarded hypertrophy as invariably conservative and beneficial, and there is a good deal to be said for both views in certain circumstances. It may be admitted that the latter view is, generally speaking, the more correct, but there are certain conditions in which the compensatory hypertrophy oversteps the limits of beneficial increase. This is, no doubt, because the degree of embarrassment in the circulation is of more than average severity. Yet mere bulk of cardiac muscle may, I think there is reason to believe, become an intra-thoracic annoyance, a factor adding to the disablement both of heart and lung. In such circumstances hypertrophy ceases to be advantageous and becomes an aggravated incident by its excessive proportions which, with Hope, I am inclined to regard as a disadvantage and therefore a disease or cause of disease.

We know that there are certain characteristic differences in cardiac hypertrophy as it affects various portions of the heart under the influence of different lesions. Dextral valvular lesions are of rare occurrence, but (as in the left heart) induce hypertrophy which, however, never adds a mechanical factor of increased embarrassment from its *bulk*, even when well marked, as it frequently is, in cases of congenital malformation. Pulmonary obstructive (emphysematous) and constrictive mitral valvular disease may likewise alter the shape of the heart characteristically and induce considerable dextral hypertrophy; but here also the condition must be regarded as altogether beneficial to the propulsion to the circulation. The uncomplicated hypertrophy of mitral regurgitant disease may be placed in the same category, while the gradually diminishing hypertrophy due to peripheral obstacles rarely attains dimensions which can justly cause it to be regarded as a diseased state. The latter may cause subjective discomfort, such as vertigo, or even favour cerebral hæmorrhage and death, but, as a disabling incident in the actual propulsion of the blood, such hypertrophy does not play a part. The organ indeed under these circumstances, however powerful its walls, frequently occupies a comparatively small amount of space. Clinically, the area of cardiac dulness is not usually extended in these cases and post mortem the heart frequently exhibits the condition of so-called concentric hypertrophy, which is merely hypertrophy without dilatation. It is the cor bovinum, the hypermyotic heart, which exemplifies that degree or condition of cardiac hypertrophy which ceases, as I think, to be beneficial in compensation, and becomes from its bulk an added intra-thoracic embarrassment to the circulation of the blood. By cor bovinum is meant a heart hypertropied in a degree beyond the average. Personally, I prefer the term "hypermyosis." The hypermyotic heart is indicative not only of a high nutritional index on the part of the individual manifesting it but also of a high degree of impediment to the normal action of the heart. In so far, therefore, as hypertrophy is proportionate to impediment we must regard even hypermyosis as conservative and beneficial in intention, if not in effect. That it is not beneficial in effect may, I think, be legitimately argued.

This condition of hypermyosis is met with chiefly in two kinds of case—namely, (1) when the aortic valve is incompetent and the organ has to deal with a circulation in which the driving systemic chamber contains blood both during systole and diastole—in which systole is difficult and diastole distensive, from the in-rush of auricular and regurgitation of aortic blood; and (2) when, whatever the valvular lesion, the cardiac muscle itself is tethered directly to the pericardial sac, and through the agency of the latter to the chest wall or to neighbouring organs. In these cases of adherent pericardium likewise systole is rendered difficult and disastole fixed or checked. In both classes excessive impediment provokes excessive effort in many cases and excessive effort induces excessive hypertrophy.

The effect of excessive effort is, naturally, exhaustion, and in the production of this result several factors, hæmic, neural, and muscular, are operative. The blood formation of such patients is disturbed by the passive congestion of the chylopoietic and excretory viscera and the quantity of the circulating fluid has to be carefully regulated on account of the difficulties which beset its circulation. Broken sleep, often in the orthopnœic position, with the general muscular fatigue entailed, involves also a weakening of cardiac force from the neural side, while the essential irritability of the heart muscle itself suffers from these indirect causes and from the additional effort it has to put forth to forward the blood-flow in circumstances of an engorged and disordered coronary circulation. These circumstances alone may in great measure account for the fact that a patient frequently dies at a vigorous period of life and reveals on post-mortem examination a large and powerful heart muscle without manifest degeneration which one would, *a priori*, regard as capable of adapting itself much longer to the additional labour thrown upon it by the mechanical lesions which underlie the cardiac hypermyosis. The lungs, moreover, are not merely respiratory organs. Inspiration and expiration have a definite effect upon the circulation of the blood. This is well seen in the so-called pulsus paradoxus—the regular succession of small and large waves—which occurs when respiratory action is exaggerated in connexion with heart disease. This pulsus paradoxus was, indeed, at one time regarded as diagnostic of adherent pericardium, but we now know that it may occur when the heart is labouring at a disadvantage, quite irrespectively, of such pericardial tethering. When, therefore, we have a large hypermyotic heart, whether tethered or free, by its mere bulk it encroaches upon pulmonary space and hampers the respiratory scope both of lungs and diaphragm when inclosed in an unyielding chest wall.

In the young, in whom the ribs and cartilages are soft in proportion to their youth, we find that as the heart increases in size the chest wall in a measure yields before its increasing bulk and under the influence of its more powerful and heaving muscular action. In these circumstances a so-called "bulging" of the præcordia is gradually established. Nor is this bulging only found when the chest wall imprisons a large and powerful heart, but also when pericardial effusion or intrathoracic tumour add distension to the normal contents of the thoracic cavity. As I argued in a paper which I read before this society last year on pericarditis in childhood the heart in these circumstances requires more room to act in, and, as I shall state presently, such room ought in certain circumstances to be provided by the surgeon under the guidance of the physician, and has been so provided with benefit. But the excessive bulk of the heart may be dependent upon conditions transient in their nature and it therefore becomes a matter of the first importance to diagnose aright between hypertrophy and dilatation of the heart when one or other of these conditions plays the major part in any given case.

The hypertrophied heart which comes under medical observation except for some such purpose as life insurance is usually one in which dilatation is present in addition to hypertrophy. When this is not the case the chief distinction from the heart of dilatation rests on its more forcible palpable impulse and the absence of dyspnœic symptoms or symptoms of dyspnœa induced by such exercise as should normally not have this result. The area of cardiac dulness, moreover, is usually most extensive when the heart is dilated, and when this is so in a high degree there may be much intercostal pulsation, with the chief apical point of impulse displaced in various degrees beyond its usual distance from the mid-sternum.

When the evidence of dilatation of the right side of the heart is well marked we also have the signs of venous reflux into, or engorgement of, the cervical veins and usually well-marked epigastric pulsation, with in some cases actual rhythmical pulsation of the liver. The auscultatory signs also help us, for the general signs of cardiac dilatation as distinct from hypertrophy to which I have referred are usually associated with an accentuation, single or reduplicated, of the cardiac second sound as compared with the normal or with the second sound as met with in the well-compensated hypertrophied heart.

The cases in which the differential diagnosis between the hypertrophied heart with a measure of dilatation and the dilated heart in which hypertrophy plays a minor rôle are most difficult. They are, in my experience, cases on the one hand, of adherent pericardium with valvular lesion, and on the other, cases usually of mitral valvular disease without such adhesions. There are those who question the importance of pericardial tethering as a seriously aggravating incident in these cases, but I am not one of that number. I agree with those who consider such adhesions as one of the chief incentives to that hypermyosis to which I have already referred, as taking the hypertrophic increase of the organ beyond the pale of beneficial processes. In both these classes of cases we may have urgent dyspnœa, a wide area of percussion dulness, and frequently a double mitral bruit at the apex anteriorly, becoming single in the paravertebral groove posteriorly. Both may be associated with the paradoxical pulse in proportion to the degree of dyspnœa and amount of expansile lung, and both may show an unaltered situation of the heart on changing the posture of the patient to the right or left, as the case may be. In young subjects we may gain some probability of the existence of the more permanent state of tethered hypertrophy from that bulging in the præcordia to which I have already referred, especially when the underlying lesion is mitral rather than aortic.

When treatment is followed by amelioration we may also legitimately draw a conclusion from the skrinkage of the area of cardiac dulness, which is more manifest in untethered than in tethered cases, and this variation may be corroborated by skiagraphic inspection. When hypertrophy predominates, as it does in many cases of adherent pericardium, a diastolic impulse perceptible to the palpating hand may at times be perceived, and to this sign Hope attached much diagnostic importance, and Brauer has recently emphasised its value. We must, however, in many of these cases rest satisfied with the probable correctness of our diagnosis, for, even with the greatest exercise of care in coming to a conclusion on the point, we know that error is possible. I am myself inclined to attribute most importance in these circumstance to the relative fixity or alteration of the palpable and percussible signs, in periods of relief or improvement, as compared with the conditions found during the acme of disordered action. These considerations interest us at present in view of the remarks I propose making on the *treatment* of the conditions concerned.

*Prognosis.*—The prognosis of a compensating hypertrophy is influenced by many considerations. In the *child* the nature of the lesion, the general nutrition of the patient, and purely mechanical factors are the guiding data. In these circumstances every additional mechanical impediment gains in prognostic importance and the high degree of hypertrophy associated with many cases of adherent pericardium and the comparative short life of most young subjects early affected with endo-pericarditis lends importance to the pericardial element in the prognosis of the hypertrophied heart of childhood. In the adult, in addition to the muscular and hæmic data, we have the influence of the neural factor, by means of which shock, anxiety, and imperative labour additionally tax the heart already labouring at a disadvantage, while with advancing life peripheral arterial embarrassment and the affection of other organs such as the kidneys furnish considerations which have a bearing on prognosis.

*The management and treatment of the hypertrophied heart.*—That the disabled heart, sufficiently "compensated" by the hypertrophy provoked by its condition, may efficiently do its work for lengthened periods in circumstances of considerable stress and strain, is a common experience. The importance of the neural factor in the maintenance of an undisturbed cardiac action has also been mentioned. It follows, therefore, that no more injudicious course can be taken with the patient than that of rendering him "nervous" about the condition of his "heart," or so hedging him about with restrictions as to suggest that little lies between him and dissolution. Yet this is the tendency of that nauseating detection of various minor degrees of dilatation which has not been unknown in the practice of medicine within recent years, and which would probably have affected the welfare of patients more had the diagnosis been more frequently correct.

The avoidance of strenuous exertion, especially in aortic cases, is of course desirable, and the care of the patient imperative if intercurrent disease or great emotional distress beset him; but, given a reasonable observation of precautions in such contingencies, the more rapidly the patient forgets he has a "heart" the better for him, and the less illumination as to his condition which the physician affords him the better—certainly for the patient. For the physician who acts thus it may not be so well, for the anxiety of friends may hurry him to some source of physiological enlightenment which may not enhance the reputation of the previous adviser more prudent in the interest of the patient than of his own interest in dealing with a public whose anxiety alone is greater than their ignorance.

The disordered action or insufficient force of the heart already hypertrophied, of course, demand attention by rest of mind and body, regulation of food, the cardiac tonics indicated, whether hæmic, neural, or muscular, or these combined, and later graduated exercises by baths, gymnastics, or walking. But as time advances and hypertrophy increases, giving way later to dilatation, and we have a large ineffective organ pulsating in the thorax and crowding neighbouring organs directly and indirectly, and refusing to be reduced to order even by the bolder therapeutics of blood-letting and heroic doses of the cardiac stimulants, the question arises whether anything else can be done to render cardiac action more easy and to relieve the patient for a longer or shorter period.

We are all aware of the baneful influence upon the circulation of removeable accumulations within the chest, such as serum, pus, air, or blood, accumulations, that is, which by their pressure "crowd" the heart and hamper it in its easy and free movement. Relief may also be obtained when the invading mass is solid. I have now under my care in the Great Northern Central Hospital a girl, 13 years of age, who has a large glandular tumour in the upper portion of the left chest anteriorly, associated with signs of much interest which I shall relate on another occasion. It pressed upon the trachea and bronchus and necessitated the constant maintenance by the patient of the orthopnœic position. As the sufferer was not cachectic I thought it possible that the tumour might be hydatid, though probability pointed to its solid nature. I therefore asked my colleague, Mr. Ewen

Stabb, to explore the chest by costo-chondral resection. About two inches of the second and third left rib-cartilages were resected and the patient, at the time I write, now reclines comfortably, and avers she can both breathe and swallow more easily, and does so.

One might legitimately, therefore, surmise *a priori* that when the central organ takes the initiative in congesting and encroaching upon the lungs, relief of intrathoracic pressure by costal resection might also in some cases be beneficial. This view, if you remember, was that which I put forward in a paper on "Pericarditis in Childhood" which I read before this society last year and which was later published in THE LANCET.[1] It is, indeed, a view which I have advocated for several years, but without convincing others, possibly because I have not boldy put it into practice. The same timidity, however, has not been exhibited in Germany, where Brauer, of whose work I was until recently unaware, has successfully treated several cases of adherent pericardium by causing surgeons to remove a sufficient amount of costo-chondral surface in the præcordia, and his example has been followed in Holland by Wenckebach in one case. I cannot now give the details of these cases, but it will suffice to relate (1) that the operation was not difficult, as one would expect; and (2) that the general effect in improving the action of the heart and in promoting an easier circulation was obtained by the procedure. All these cases were diagnosed as adherent pericardium, although the sac was not opened, and in some of them costo-pericardial adhesion under the surface removed was not found. The pericardial tethering was, therefore, assumed to be elsewhere, that is, pleuro-pericardial. This fact also, however, has interest, for the question arises whether mere cardiac bulk is not a disadvantage in these circumstances and whether, therefore, the justification does not arise for attempting to relieve pressure by the removal of a portion of the ribs and cartilages in the præcordia, in obedience to the indications given by the præcordial bulging of children, even when it may be assumed that actual pericardial tethering is absent. I think personally, we shall soon be justified in this matter in following John Hunter's advice to Jenner when the latter was too timid to vaccinate but thought he might do so with safety. "Why think?" said Hunter; "do it." I believe we shall also in this matter be able to "do it" with safety and with benefit, both to patients and to our own reputation.

# PANCREATITIS DUE TO DIRECT EXTENSION OF A MALIGNANT GROWTH OF THE GALL-BLADDER ALONG THE COMMON BILE AND PANCREATIC DUCTS.

BY A. W. MAYO ROBSON, D.SC., F.R.C.S. ENG.,
HONORARY SURGEON TO THE DREADNOUGHT HOSPITAL;

AND

P. J. CAMMIDGE, M.B. LOND., D.P.H. CANTAB.

THE following case appears to us to be of sufficient interest, both from a clinical and pathological point of view, to make it worthy of being reported.

The patient, a man, aged 61 years, was seen by one of us in consultation with Dr. Carter on the evening of March 2nd, 1907. He was extremely ill and it appeared clear to both his medical attendants and his friends that unless something could be done to relieve him he had not long to live. He gave the history that he had been perfectly well up to 13 months previously, when he began to have some abdominal pain on the right side beneath the costal margin. Although he was able to go to business, he had to leave off work from time to time on account of more severe seizures of pain, the attacks resembling, and, in fact, being diagnosed as, gall-stone seizures. From the time of his first attack of pain he began to lose flesh and in November, 1906, after a more severe attack than usual, jaundice supervened, but it cleared up in a fortnight. Three weeks before being seen he had had another severe attack followed by jaundice, which, however, had now subsided. With the jaundice the abdomen became swollen and very tender on the right side. For one week he had had some fever of an irregular type, associated with occasional shivering attacks and vomiting. At the time of the consultation he was markedly emaciated and very feeble, the abdomen was distended, but no fluid thrill could be felt. There was great tenderness on the right side of the abdomen, apparently due to local peritonitis, so that it was impossible accurately to palpate the region; nevertheless, gentle pressure revealed a distinct swelling which reached below the level of the umbilicus. It was hard, distinct, tender, and rounded and was apparently a distended gall-bladder. Above this swelling could be felt a hard nodule at the edge of the liver. The skin was deeply jaundiced, the urine was dark, and the fæces were pale. There was no œdema of the legs and no evidence of ascites could be found. Immediately after the abdomen had been examined the patient had a shivering attack and the temperature went up at once to 104° F. A diagnosis was made of suppuration in the gall-bladder, possibly associated with gall-stones and probably with malignant disease. An exploratory operation was recommended, and, although it was thought that the patient would be too ill to bear any extensive operative procedure, it was hoped that pus might be evacuated and so give relief.

Analyses of specimens of urine, fæces, and stomach contents were made on March 3rd with the following results.

*Urine.*—Reaction, acid; specific gravity, 1·020; albumin, *nil*; sugar, *nil*; acetone, *nil*; diacetic acid, *nil*; indican, *nil*; bile, a well-marked reaction; urobilin, *nil*; urea, 2·7 per cent.; chlorides, 0·4 per cent.; phosphates, 0·3 per cent.; microscopically, squamous and transitional epithelium; "pancreatic" reaction (C), many fine crystals, soluble in 33 per cent. sulphuric acid in ten seconds (Fig. 1).

*Fæces.*—Appearance, soft, grey-brown, solid; reaction, alkaline; stercobilin, traces; microscopically, many fat globules, a few fatty acid and soap crystals, some undigested muscle fibre; organic matter, 91·5 per cent. of the dry weight; "total fat," 39·6 per cent.; "neutral fat," 31·8 per cent.; "combined fatty acid," 7·8 per cent.; organic matter, not fat, 51·9 per cent.; inorganic ash, 8·5 per cent.

*Stomach contents.*—Reaction to litmus, acid; congo-red reaction, deep blue; phloroglucin vanillin reaction, pink; lactic acid, traces; albumin, a well-marked reaction; albumoses and peptone, a well-marked reaction; mucus, a large amount; dextrin, a well-marked reaction; sugar, *nil*; blood, *nil*; bile, *nil*; microscopically, much glairy mucus, many fat globules, some starch granules, many sarcinæ, some yeast cells, a few bacilli. Quantitative examination: total acid, 0·12 per cent.; total chlorides, 0·32 per cent.; inorganic chlorides, 0·22 per cent.; physiologically active hydrochloric acid, 0·10 per cent.

The conclusions drawn from the above results were stated as follows:—

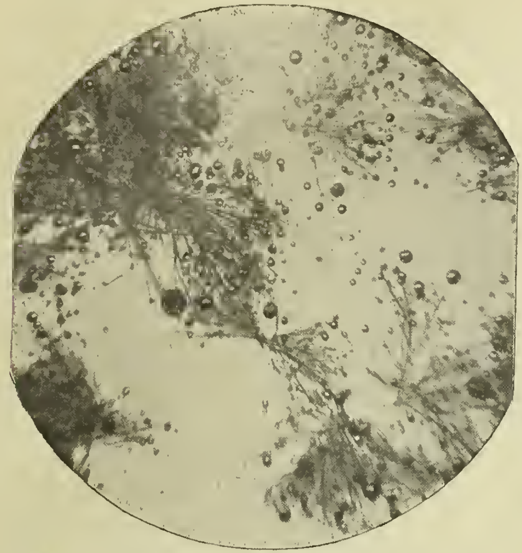
> The large amount of bile pigment in this specimen of urine shows that there is some serious obstruction to the free flow of bile into the intestine. The positive result of the "C-pancreatic" reaction points to there being active degenerative changes in the pancreas, probably of an inflammatory nature, and suggests that the cause of the obstruction to the bile flow is also interfering with the functions of the pancreas. The character of the pancreatic reaction, the presence of traces of stercobilin in the fæces, the normal proportion of physiologically active hydrochloric acid, and the presence of free hydrochloric acid in the vomit are against the obstruction being due to malignant disease of the head of the pancreas and suggest a diagnosis of impacted gall-stones in the common bile-duct. The excess of unabsorbed fat in the fæces, together with the fact that this excess is entirely due to "neutral fat," tends to confirm the diagnosis of there being some interference with the functions of the pancreas. The excess of fat is, however, not so marked as is usually seen in malignant disease of the head of the gland and points to the defective digestion being due to an inflammatory lesion of the pancreas. The results of the analysis of the stomach contents are against a diagnosis of primary malignant disease of the pancreas or stomach, but the microscopical characters and the presence of lactic acid suggest that there is probably some stagnation of the stomach contents.

The pathological analyses therefore pointed to there being a considerable degree of pancreatic inflammation associated with, and secondary to, obstruction of the common bile-duct and since the evidence available did not favour this being due to a malignant growth of the head of the pancreas it was inferred that it arose from the most common cause—namely, an impacted biliary calculus in the pancreatic portion of the common bile-duct. The presence of free hydrochloric acid and the normal proportion of physiologically active acid found in the stomach contents also tended, according to the investigation of Moore and his fellow-workers, to contraindicate a diagnosis of cancer elsewhere and favoured the opinion that the

---

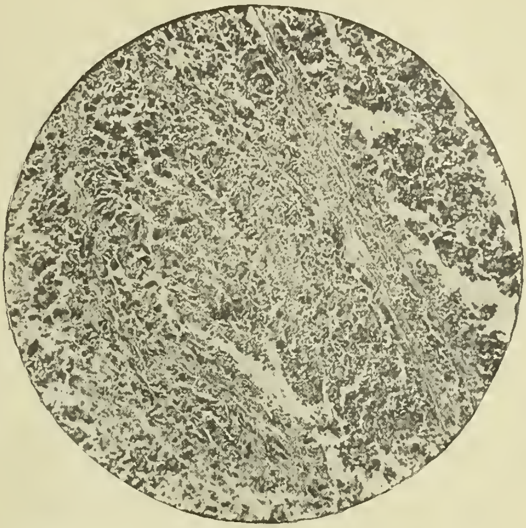
[1] THE LANCET, July 28th, 1906, p. 209.

FIG. 1.



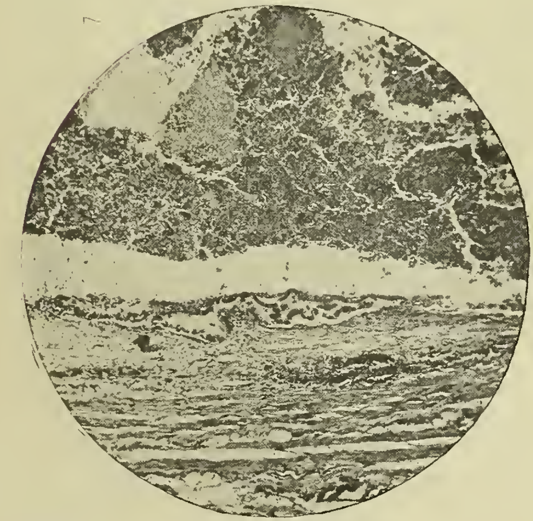
Crystals obtained from the urine by the "c-pancreatic reaction." (× 200.)

FIG. 2.



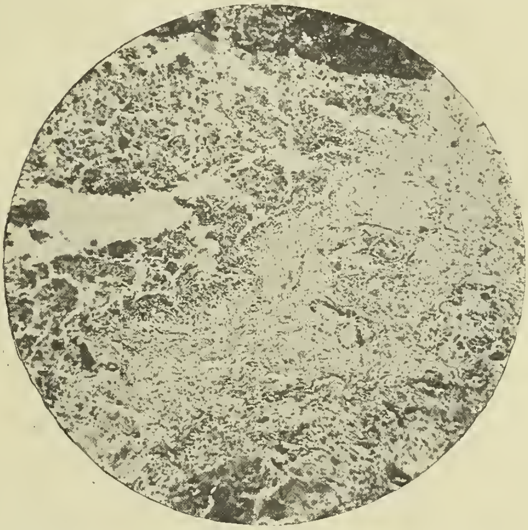
Section of the primary growth in the gall-bladder. (× 50.)

FIG. 3.



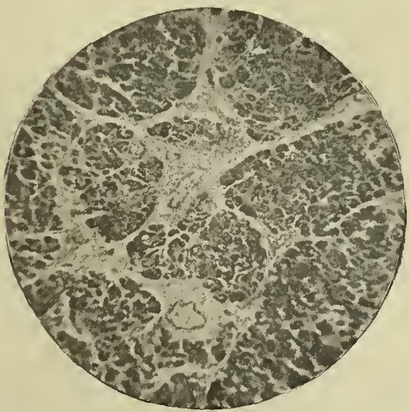
Section of the wall of the common bile-duct (below) and contents (above). (× 50.)

FIG. 4.



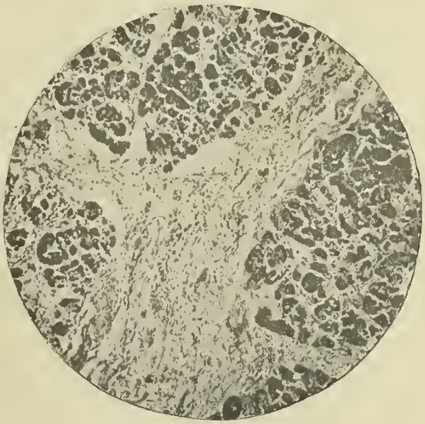
Section of the duct of Wirsung and adjoining tissue, showing the contents of the former and the penetration of the wall by the growth. (× 50.)

FIG. 5.



Section of the head of the pancreas midway between the duct of Wirsung and the periphery, showing interstitial pancreatitis and deposits of growth. (× 50.)

FIG. 6.



Section of the head of the pancreas near the periphery, showing advanced interstitial pancreatitis but no deposits of growth. (× 50.)

obstruction was of a simple nature, but as in two other cases of growth blocking the common bile-duct high up we had found both free hydrochloric acid and a normal proportion of physiologically active acid in the material regained from the stomach after a test meal we did not lay much stress on this point. In both of these cases, however, we had failed to find any trace of stercobilin in the fæces, and there was not only a very large excess of "neutral fat" but the fæces also contained a high proportion of "combined fatty acid," so that the presence of stercobilin in this instance, together with the other results of the chemical examination of the fæces, inclined us to take the view that the obstruction was probably due to gall-stones. The only point not readily explained on this hypothesis was the evident stagnation of the stomach contents, but it was assumed that this was due to dilatation of the stomach from some independent cause.

The patient was removed to a nursing home, and on March 4th an exploratory operation was performed, a vertical incision being made over the centre of the tumour. Pus was soon reached and it was found that the abscess walls were composed of broken-down growth. A drainage-tube was inserted and the wound was closed as it was quite clear that nothing further could be done. The patient was temporarily relieved by the evacuation of the pus, but his pulse, which was very feeble before the operation, in a few hours became very rapid, and he only survived until the following day.

A partial post-mortem examination was made 18 hours after death, permission only being given for an examination to be made through the operation wound. The drainage-tube was found to lead into an irregular cavity, lined with soft friable material, which occupied the position of the gall-bladder, no trace of which could be found. The growth was intimately adherent to the pylorus, first part of the duodenum, and colon, so the stomach, duodenum, colon, liver, and pancreas were removed *en masse* for more detailed investigation. Dissection showed that the walls of the cavity varied from three-quarters of an inch to one inch in thickness, except anteriorly, where they consisted of a thin layer of inflammatory exudate. Above and behind it was bounded by the liver, while below it was adherent to the colon and pyloric extremity of the stomach. The line of demarcation between the liver substance and the growth was somewhat irregular but could be easily traced. No metastatic growths could be discovered in the liver. An examination of the interior of the stomach and intestine showed that the walls of the pyloric canal and the first two inches of the duodenum were adherent to, and invaded by, the growth. In several places fungating masses protruded into the lumen of the stomach and duodenum, but no penetration of the walls of the colon had taken place. The common bile-duct could be traced through the head of the pancreas and along the left margin of the growth to its upper extremity, where it was lost as a distinct canal, although the presence of bile-stained material indicated the direction in which it passed. The duct was found to be dilated and filled with soft, bile-stained material throughout its length. The head of the pancreas did not appear to be invaded by the growth and could be easily and cleanly separated from it. The pancreas, and especially the head of the gland, was larger and harder than normal. On section no evidence of any secondary deposits could be detected by the naked eye. On dissecting out the duct of Wirsung it was found to be dilated and to be filled with bile-stained débris, similar to that seen in the common bile-duct, for one and a half inches from its duodenal opening; beyond that it was filled with white opaque material free from any trace of bile.

*Histological examination.*—Preparations made from the walls of the cavity in the liver showed masses of columnar cells, arranged in more or less regular columns and alveoli separated by delicate strands of fibrous tissue (Fig. 2) Sections of the common bile-duct showed that its lumen was occupied by masses of columnar cells and amorphous débris. Many of the cells were deeply stained with bile. In some places continuous strands of five or six cells could be seen. The walls of the duct were thickened and infiltrated with patches of small round cells. In places irregular masses of columnar cells could be seen penetrating the walls (Fig. 3). Sections of the duct of Wirsung and adjacent tissue in the head of the pancreas showed that the lumen of the duct was filled with bile-stained columnar cells and débris similar to that found in the common bile-duct. The walls of the duct were irregular and much thickened. Patches of columnar cells were found in the fibrous tissue of the walls and lying in the fibrous strands separating the neighbouring pancreatic lobules (Fig. 4). Preparations made from the head of the pancreas in various situations showed well-marked interstitial pancreatitis of the interlobular type, the lobules being separated by wide strands of fibrous tissue, which in places invaded the periphery of the lobules. Scattered in the interlobular tissue were small irregular patches of columnar cells, some of which occurred as solid masses, while others were grouped about a more or less distinct lumen. The latter, however, could be readily distinguished from the normal interlobular ducts by the atypical arrangement of the cells and the absence of any limiting membrane or duct wall. No direct invasion of the head of the pancreas by the growth appeared to have occurred and the patches of growth were most numerous in the neighbourhood of the duct of Wirsung (Figs. 5 and 6). Sections of the body and tail of the pancreas showed no marked overgrowth of interstitial tissue but the cells of the parenchyma were swollen and granular, having the histological characters seen in cloudy swelling.

The post-mortem examination thus proved that the cavity opened at operation was due to a columnar-celled carcinoma of the gall-bladder which had invaded the stomach and first part of the duodenum and was adherent to the colon. The obstruction of the pylorus caused by the growth accounted for the vomiting that occurred during life, and also explained the evidences of stagnation of the stomach contents found in the pathological examination. The destruction of the upper part of the common bile-duct, and the presence of a mass of disintegrated growth in its remaining section, were undoubtedly the cause of the jaundice, but the bile-stained character of the cells in the lumen of the duct and the presence of stercobilin in the fæces showed that some bile was able to find its way along the duct into the intestine, the obstruction thus not being absolute as it is in most cases of primary cancer of the head of the pancreas.

The most interesting feature of the case is the condition of the pancreas and the duct of Wirsung. The latter was filled with débris similar to that found in the common bile-duct, and as the part of the pancreatic duct nearest to this was stained with bile it was evident that not only had masses of cells passed from the common duct into the duct of Wirsung but that a certain amount of bile had also followed the same course. According to Opie the passage of bile into the pancreatic duct is a cause of acute pancreatitis, and although there were well-marked evidences of inflammatory changes these were not of the acute type, and during life there had been none of the symptoms usually associated with acute pancreatitis. Recent experiments by Flexner have tended to show that the active constituent of bile giving rise to inflammation of the pancreas is the bile salts, and that when these are modified by prolonged stay in the ducts or diluted with colloid material they cause chronic inflammation and not an acute fulminating lesion. This is probably, in part, the explanation of the pancreatitis found in the case under consideration. But in addition we have also to take into account the obstruction to the free outflow of the pancreatic secretion caused by the blocking of the ducts and the irritation of the gland by deposits of growth within its substance. The much more advanced stage of the lesion found in the head of the gland is possibly to be explained by its earlier invasion by the growth and its more direct contact with the bile passing from the common bile-duct into the duct of Wirsung, but it has also to be borne in mind that malignant disease of the gall-bladder very frequently follows irritation by gall-stones and that chronic pancreatitis is also most commonly the result of the passage of biliary calculi along the common duct. The fact that there was advanced fibrosis of the head, while the body and tail only showed the characters of catarrhal pancreatitis, with no marked increase of fibrous tissue, lends support to the view that the affection of the head of the gland was of much earlier date than the disease of the body and tail of the organ.

The absence of any direct connexion, either macroscopically or microscopically, of the growth with the pancreas, the more numerous deposits of growth in the neighbourhood of the duct of Wirsung, and the absence of deposits elsewhere suggest that the involvement of the pancreas was by way of the common bile and pancreatic ducts. So far as we are aware this direct method of extension has not as yet been described and is a cause of pancreatitis of which we have no previous knowledge. It was no doubt rendered possible by the soft friable character of the growth, but as cancer of the bile-ducts may be of a similar nature the possibility of such an occurrence has to be borne in mind in making a diagnosis of pancreatitis.

The examination of the urine, fæces, and stomach contents in this case suggested obstruction of the common duct with secondary chronic pancreatitis, and the histological examination afforded abundant evidence of the correctness of these conclusions, thus once again demonstrating the usefulness of these methods when carefully and correctly carried out. The inference as to the simple nature of the cause of the obstruction was, however, proved to be incorrect, but the condition was so anomalous and outside our previous experience that a correct conclusion was practically impossible.

An examination of the stomach contents for free and physiologically active hydrochloric acid has proved of assistance in two cases of malignant disease of the head of the pancreas, but in this instance the results of this examination were misleading, as they had been in the cases of growth of the common duct previously mentioned. We are therefore of opinion that while the absence of free and physiologically active hydrochloric acid may afford useful confirmatory evidence in suspected cases of cancer of the head of the pancreas, their presence, even in considerable amount, is not of any diagnostic value, especially when the growth is situated in the common duct or gall-bladder.

The case is clinically interesting as showing how closely cancer of the gall-bladder may simulate cholelithiasis, if the disease be associated with suppuration. The intermittency and severity of the attacks of pain for 13 months, without jaundice, suggested the presence of gall-stones in the cystic duct, and the last severe seizure, followed by jaundice, made it appear probable that a calculus had passed into the common duct. Although no gall-stones were actually found, either at the operation or later, it is quite possible that cholelithiasis may have been the original cause of the disease, and this is rendered probable by the presence of more advanced inflammatory changes in the head of the pancreas than could be accounted for by the recent invasion of the gland by malignant disease from the duct of Wirsung. The nodular character of the growth felt before operation and the reported loss of flesh and strength led to a suspicion of cancer, but the well-marked signs of suppuration gave the impression that some relief, and possibly something more than relief, might be given by the evacuation of the abscess.

On several occasions it has been the good fortune of one of us to operate under similar circumstances and to find the disease to be simple, the operation leading to complete and perfect recovery, but in this case it became at once apparent on opening the abdomen that merely temporary relief was all that could be hoped for.

Our experience in other cases of cancer of the pancreas has shown that an inflammatory condition is apt to supervene as a complication in a certain proportion of cases, and unless this is borne in mind it may lead to errors in diagnosis and to useless operation, for it must be acknowledged by all who have had experience of such cases that primary cancer of the pancreas is a hopeless disease however it may be treated.

# CALCULI IN THE APPENDIX.[1]

By D. T. BARRY, M.D. R.U.I., F.R.C.S. ENG., D.P.H.,
DEMONSTRATOR OF PHYSIOLOGY IN QUEEN'S COLLEGE, CORK.

BEING at present engaged with Professor J. J. Charles in a little research work on the structure of the appendix my attention was directed to the subject of calculi and other bodies found in this organ by finding four small stones in one of the specimens submitted to me by Dr. D. P. Fitzgerald, our assiduous demonstrator of anatomy.

There seems to be no definite understanding as to the exact nature of these bodies, but that they are not always of the same kind is certain. Before attempting a classification I will give the results of a rough analysis of those specimens and a few extracts from recent literature on the subject. The appendix in this case was somewhat fusiform in shape, having a bulging middle and contracted ends. Microscopically the distal end for quite half an inch from the tip presented no lumen and no trace of glands or of lymphoid tissue. Between this and the distended site of the calculi a portion intervened containing a plug of mucus in the lumen, a fairly regular set of glands, and showing some inflammatory changes. The distended portion showed atrophy of the mucous membrane and thinning of the muscular coat. The proximal end contained a plug of mucus. The calculi were four in number, each about two millimetres in diameter, dark brown in colour, smooth, and facetted. Allowed to fall on a plate they gave a ringing sound in no way differing from that given by a small gravel pebble of the same size. While engaged in this latter pastime I lost one of the precious stones.

The next step in the examination was to macerate one with a dilute solution of sulphuric acid and to test the surface layer microscopically and chemically for cholesterin. These tests were negative. Gmelin's test for bile pigments and Pettenkofer's test for bile salts also gave negative results. Further examination showed that the stones were composed chiefly of calcium phosphate with a small amount of organic matter.

To quote briefly from a few recent investigators :—

Howard Kelly[2] states : "Gall-stones, also, which formerly were supposed to enter the appendix frequently are exceedingly rare; but they are often so closely simulated by enteroliths that a chemical analysis is necessary for their exclusion. The clinical evidence in some of these cases so strongly supports the gall-stone theory as to leave no doubt in the mind of the observer." McAdam Eccles[3] maintains that calculi in the appendix are always enteroliths and always formed *in situ*. Walsham and Spencer[4] state : "The appendix may contain true fæcal concretions or coprolites. Enteroliths proper where the fæcal constituents and inspissated mucus are mixed with calcareous material derived from the inflamed wall, like tonsillar concretions and rhinoliths, are more rare, while foreign bodies, such as fruit-stones, &c., are still rarer." Roberts[5] remarks: "They [gall-stones] cause trouble by lodging in the vermiform appendix.' Lediard of the Cumberland Infirmary recently writing in THE LANCET describes a case on which he operated. The patient showed the usual signs of an acute appendicitis and there was no previous history of gall-stones or a symptom pointing to them. In the appendix were found 11 small black stones, and they were found to consist of cholesterin and bile pigments. Murchison[6] expresses strong doubt of the presence of gall-stones. Osler,[7] in reference to gall-stones in the intestine, remarks : "Courvoisier's statistics give a total of 131 cases, in six of which the calculi had a peculiar situation as in a diverticulum or the appendix." He also states : "The lumen of the appendix may contain a mould of fæces. Concretions, enteroliths, coproliths are also common."[8]

It is only by numerous analyses with careful reports of the separate cases met with that we can allay the uncertainty prevailing in connexion with this subject. It is important to arrive at some conclusion as to the different types of bodies found with the relative frequency of each. It will be seen from the above quotations that there is a confusion of terms. One concludes, for instance, that concretions, fæcal moulds, enteroliths, and coproliths are all distinct things, while in addition the terms stercolith and coprolite are used. Would it not be well to use the term fæcal mould for those masses of inspissated fæces somewhat resembling a date-stone in appearance and containing the usual percentage of inorganic matter found in fæces? The term "enterolith" might well be employed for other forms where the inorganic material preponderates.

To my mind, a very important consideration in these cases is the condition of the appendix itself. If gall-stones migrate from main gut to appendix we should expect to find, according to the size and number of the stones, a patent lumen with more or less destruction of the mucous membrane over which the stone has passed. The case reported by Lediard,[9] where 11 gall-stones seem to have thus migrated one after the other, must surely have presented some interesting features in structure to which no reference is made. The case here reported by me showed changes exactly corresponding to formation *in situ* and to formation as a result of increased inorganic matter accompanying inflammation.

In conclusion, I would express an opinion that, excluding parasites which have been found on a few occasions, bodies in the lumen of the appendix may be classified under the following heads, which I give in the order of frequency of their occurrence: (1) fæcal moulds as defined above; (2) enteroliths with or without a foreign body as a nucleus; (3) gall-stones; and (4) true foreign bodies.

---

[1] A note read before the Cork Medical and Surgical Society on March 20th, 1907.

[2] The Vermiform Appendix and its Diseases (Saunders).

[3] THE LANCET, March 14th, 1903, p. 703.

[4] Theory and Practice of Surgery, 1906.

[5] Theory and Practice of Medicine, 1905.

[6] Clinical Lectures on Diseases of the Liver.

[7] The Principles and Practice of Medicine, p. 568.

[8] Op. cit., p. 519.

[9] THE LANCET, Jan. 12th, 1907, p. 83.

Cork.

# A CASE OF APPENDICITIS EXCITED BY A CLOVE, THE APPENDIX BEING THE SOLE VISCUS IN A HERNIAL SAC.

By W. HAL BARNETT, M.B., B.S. LOND.,

AND

J. W. SCOTT MACFIE, B.A., B.SC., M.B., B.CH. EDIN.,

HOUSE SURGEONS TO THE RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

THE patient who is the subject of this note was a man 58 years of age, who was admitted to the Radcliffe Infirmary and County Hospital on May 5th, 1907, complaining of a tense and painful swelling in his right groin. The history of the case was as follows. For quite 20 years the patient had suffered from a rupture in the right inguinal region, which he controlled by the use of a truss during the daytime. He was never inconvenienced by this and when, as occasionally happened, the bowel came down he was easily able to return it. One morning, however, about a week before his admission, he awoke to find that a swelling had come down, which, unlike his usual rupture, was hard and painful. He thought, however, that it must be the rupture and tried to reduce it as usual. This he was unable to do, but he nevertheless applied his truss on top of it and went about his daily work. At first the swelling, though painful, did not cause him any considerable inconvenience, but after a day or two he noticed that it was rapidly growing larger and at the same time the aching pain "as though something were gripping him hard" became so severe that he was unable to get about at all. On the next night (May 4th) he called in a medical man who, after attempting reduction without success, advised the patient to come to the Radcliffe Infirmary as soon as possible.

On admission the patient appeared to be somewhat anæmic. He was a man of a rather unhealthy appearance. His tongue was dry and clean and it was noticed that the lower parts of his abdomen and his thighs were deeply pigmented. Vomiting had not occurred and his bowels had been moved regularly throughout his illness. His temperature was 99° F. On inspecting the right inguinal region a considerable amount of swelling was observed running down into the scrotum, the skin overlying it was healthy, and no visible impulse was detected on coughing. On palpating the tumour it was found to be very hard, elongated and oval in shape, and about three inches by one inch in size. Its surface was smooth and the mass could be traced from the internal ring down the canal as far as the testicle. It was exquisitely tender to the touch. Percussion only showed that the swelling produced a dull note and nothing could be made out by rectal examination. On May 6th Mr. R. H. A. Whitelocke exposed the tumour by an incision made over the swelling. A small quantity of clear straw-coloured fluid exuded on pricking the sac, and on further opening the mass a rough-walled cavity was laid bare containing a dark red elongated mass. Some purulent material was found, and on lifting up the red mass a clove was discovered lying beneath it. It was then realised that the tumour consisted of a short but very greatly thickened appendix lying in a hernial sac, and accordingly it was removed and the stump cauterised with pure carbolic acid and buried. No other viscus was found to be present in the sac.

It is curious and interesting to note that the patient affirmed that he had not tasted cloves in his food for some time, the last occasion being about a month before his admission, when he remembered having cloves in an apple pudding. Nevertheless, the clove, when removed, was found to be well preserved, the antiseptic action of its essential oils having probably protected it from decomposition. It was in every respect complete, with the exception of one division of the calyx, which was knocked off during the operation, and a little soft and swollen as might have been expected.

We have to express our thanks to Mr. Whitelocke for permission to publish the notes of this case, which appears to be of interest, first, because of the difficulty of diagnosis, for the tumour felt almost like a malignant mass, and yet it had come down so suddenly; secondly, because of the unusual cause—a clove; and thirdly, in that the appendix, greatly thickened and inflamed, was the sole viscus in the sac.

# A RECORD OF THE PHYSICAL EXAMINATION OF 1000 BOYS AT THEIR ENTRANCE ON PUBLIC SCHOOL LIFE.[1]

BY CLEMENT DUKES, M.D., B.S. LOND., F.R.C.P. LOND., J.P.,

PHYSICIAN TO RUGBY SCHOOL.

BY the courtesy of the headmaster of Rugby School I am permitted to submit to the International Congress of School Hygiene the results of the physical examination of 1000 boys on admission to a public school between the ages of 13 and 15 years. These British boys may be regarded as a special class: strong and healthy, well-bred, well-fed, and reared mainly in the country. For even where in some instances their infancy and childhood were passed in towns and cities, the period of life from the age of 9 to 13 years was usually spent in the country at admirable preparatory schools. The record is entirely free from selection. The examinations were made as the boys severally entered the school and were solely intended to serve as a basis for regulating each boy's physical welfare during his secondary school life by detailing minutely his exact physical state and thereby affording a sure guide to the masters in the appropriate course of education, and for determining the physical exercise and games suitable to each boy's constitution and vigour.

Prior to registering the result of the examinations I drew up a schedule for recording the proposed analysis of my observations and submitted it to the Editor of THE LANCET with a request that he would refer the form to experts for suggestions tending to its completeness for its purpose. He replied:—"I have submitted your Physical Examination Chart to the author of the leading article in THE LANCET and to one other gentleman taking particular interest in anthropometry. Neither has any suggestion to make. They consider the chart to cover the ground entirely." I insert a copy of the scheme:—

N = Normal. *Private and Confidential.*

PHYSICAL EXAMINATION.

| | |
|---|---|
| I.—NAME ..........................................<br>RESIDENCE .................................... | Date. |

| | | | |
|---|---|---|---|
| II.—AGE. | Inches.<br>Height.<br>Average ......... | lb.<br>Weight.<br>Average......... | Chest Measurement. Inches.<br>Average.................. |

| | | | |
|---|---|---|---|
| III.—GENERAL APPEARANCE. | 1. Aspect ..............................<br>2. Physique ..............................<br>3. Nutrition ..............................<br>4. Deformity. *a.* Lateral curvature of spine...<br>*b.* Pigeon breast...<br>*c.* Bow legs .........<br>*d.* Knock knees ...<br>*e.* Flat feet ......... | Colour of eyes.<br>Violet.<br>Grey.<br>Blue grey.<br>Blue.<br>Green.<br>Hazel.<br>Brown.<br>Brown black. | Colour of hair.<br>Albino.<br>Very fair.<br>Fair.<br>Light brown.<br>Brown.<br>Dark brown.<br>Black brown.<br>Black.<br>Red brown.<br>Dark red.<br>Red.<br>Golden.<br>Light red |

---

[1] A paper read before the Second International Congress of School Hygiene, held at the University of London, August 5th–10th, 1907.

IV.—NERVOUS SYSTEM.
1. Intellectual standard: Form......Previous school...
2. Nervous peculiarity ..........
3. Hearing
    Normal..........
    Imperfect......... Eustachian ..........
        Aural..........
    Discharge from ear ..........
4. Sight ...
    Normal..........
    Hypermetropia..........
    Myopia..........
    Astigmatism ..........
    Colour blind ..........

---

V.—DIGESTIVE SYSTEM.
1. Teeth
    Good, and well-cared for ..........
    Require dentist's attention next vacation
2. Tongue ..........
3. Action of bowels
    Regular, after breakfast..........
    Irregular ..........

---

VI.—RESPIRATORY SYSTEM.
1. Respiratory
    Number ..........
    Nasal ..........
    Oral ..........
2. Throat ..........
    Tonsils ..........
    Post-nasal growths
3. Lungs .........
    Percussion ..........
    Auscultation ..........

---

VII.—CIRCULATORY SYSTEM.
1. Heart ..........
2. Blood-vessels
    Arteries ...... Pulse ..........
    Veins ..........
3. Chilblains ..........

---

VIII.—GENITO-URINARY SYSTEM.
1. Puberty ......
    Attained ..........
    Not attained ..........
2. Genital organs
    Phimosis ......
    Paraphimosis...
    Testes
        Descended.....
        Undescended.
3. Rupture ..........
4. Varicocele ..........
5. Character of urine ..........
    Specific gravity.
    Albuminuria.....
    Sugar ..........
6. Incontinence ..........

---

IX.—PREVIOUS IMPORTANT ILLNESSES.

---

X.—IMPORTANT ILLNESSES AT SCHOOL.

---

Signed..........
Medical officer.

SCHOOL GAMES.

Adapted to ..........

O Not to play. X May play. XX Ought to be made to play.
XXX No restrictions.

Cricket ... ... ... ... ... ... ... ... ... ... ...
Football ... ... ... ... ... ... ... ... ... ...
Rowing ... ... ... ... ... ... ... ... ... ... ...
*House runs
    Little side ... ... ... ... ... ... ...
    Junior ... ... ... ... ... ... ... ...
Athletics ... ... ... ... ... ... ... ... ... ...
Gymnasium
Physical drill ... ... ... ... ... ... ... ... ...
Skipping on toes ... ... ... ... ... ... ... ...
Cycling ... ... ... ... ... ... ... ... ... ...
Swimming ... ... ... ... ... ... ... ... ... ...
Skating ... ... ... ... ... ... ... ... ... ...
Rackets
Fives
Tennis
La Crosse ... ... ... ... ... ... ... ... ... ...
Hockey
Baseball
Golf ... ... ... ... ... ... ... ... ... ... ...
Wrestling
Fencing ... ... ... ... ... ... ... ... ... ...
Boxing
Rifle corps drill
" shooting ... ... ... ... ... ... ... ... ...
Camping out
Workshops ... ... ... ... ... ... ... ... ... ...
Gardening ... ... ... ... ... ... ... ... ... ...
Walking exercise only ... ... ... ... ... ... ...
Natural history excursions ... ... ... ... ... ...

Signed ..........
Medical Officer.

*No physician can certify that the boy *can* run, although he may sometimes be able to say that he *cannot*.

As soon as it is clear to the captain in charge that the boy *can* run well, the sooner he is promoted to the next longer run the better for his welfare in every respect.

N.B.—Appropriate space is required to insert the details of the examination.

The record commenced on Jan. 21st, 1899, and was completed on May 6th, 1907. I have begun to tabulate a second thousand entries, which I hope will be similarly concluded by other hands than mine.

*Height, Weight, and Chest Measurements.*

It would be of considerable interest were I able to record the *annual* rate of growth in height, weight, and chest measurements, inasmuch as boys vary greatly in this respect, for some grow slowly before puberty, but make up for this defect at the age of puberty, or even postpone this increase until the ages of 17 or 18, when they grow enormously. In fact, many boys who develop very gradually at first, both mentally and bodily, outstrip their schoolfellows in both respects towards the end of school-life—some growing in height at the expense of weight, and *vice versâ*.

The tables which I have used are those of Mr. Charles Roberts, who is the only author who has recorded, amongst others, the height and weight of public school boys. His table is here appended:—

*Table showing the Average and Mean Height and Weight and the Annual Rate of Increase of 7709 Boys and Men, between the Ages of 10 and 30 Years, of the Most Favoured Classes of the English Population—Public-school Boys, Naval and Military Cadets, Medical and University Students.*

| Age last birthday. | Height without shoes. | | | | Weight, including clothes of 9 lb. | | | |
|---|---|---|---|---|---|---|---|---|
| | Average. | Growth. | Mean. | Growth. | Average. | Growth. | Mean. | Growth. |
| | Inches. | Inches. | Inches. | Inches. | lb. | lb. | lb. | lb. |
| 10 | 53·40 | — | 53·00 | — | 67·4 | — | 67·0 | — |
| 11 | 54 91 | 1·51 | 54·50 | 1·50 | 72·9 | 5 50 | 73·0 | 6·0 |
| 12 | 56·97 | 2 06 | 56·50 | 2 00 | 80·3 | 7·39 | 80·0 | 7 0 |
| 13 | 58·79 | 1·82 | 58·50 | 2·00 | 88 6 | 8·27 | 88 0 | 8 0 |
| 14 | 61·11 | 2 32 | 61·00 | 2·50 | 99 2 | 10·61 | 98 0 | 10·0 |
| 15 | 63 47 | 2 36 | 63·50 | 2·50 | 110·4 | 11·21 | 110·0 | 12·0 |
| 16 | 66 40 | 2·93 | 66·50 | 3·00 | 128·3 | 17·92 | 126·0 | 16·0 |
| 17 | 67·84 | 1·46 | 68·00 | 1·50 | 141·0 | 12·69 | 140 0 | 14 0 |
| 18 | 68·29 | 0·43 | 68·50 | 0·50 | 146·0 | 4·97 | 146·0 | 6 0 |
| 19 | 68·72 | 0 43 | 68·75 | 0·25 | 148·3 | 2·20 | 148 0 | 2·0 |
| 20 | 69·13 | 0·41 | 69·00 | 0·25 | 152·0 | 3 87 | 150·0 | 2·0 |
| 21 | 69·16 | 0 03 | — | — | 152·3 | 0·27 | 152·0 | 2·0 |
| 22 | 68 93 | — | — | — | 154·7 | 2·44 | — | — |
| 23 | 68 53 | — | — | — | 151·7 | — | — | — |
| 24 | 68 95 | — | — | — | 149 2 | — | — | — |
| 25–30 | 69 06 | — | 69 00 | — | 155·2 | 0·42 | 154 0 | 2 0 |

The record of the height, weight, and girth is of inestimable value to the master who, possessing this chart, on which are also prescribed the suitable physical training and games for every "new boy" admitted, is thus intelligently and efficiently enabled to provide for his appropriate individual rearing during the period of education. At some future date these registers of height, weight, and girth should be subjected to minute analysis and classification, for they contain indiscriminately the cases of boys of excessive height with defective weight and of diminished growth with abnormal weight. This necessary analysis, however, must be undertaken by others who have more leisure at their disposal than I can command, as well as greater ingenuity in the handling of figures. The circumference of the chest, measured on the bare skin at the nipple-line, expresses the capacity of the lungs on deep inspiration and expiration. This respiratory capacity has a wide range, varying from one inch to five inches.

In specifying the numbers throughout this paper it must be recollected for the purpose of avoiding continuous repetition that they are all in relation to the standard of 1000.

| | | |
|---|---|---|
| Height ... ... ... | Above normal ... ... ... | 522 |
| | Average ... ... ... ... | 113 |
| | Below normal ... ... ... | 365 |
| Weight ... ... ... | Above normal ... ... ... | 472 |
| | Average ... ... ... ... | 57 |
| | Below normal ... ... ... | 471 |
| Chest measurement | Above normal ... ... ... | 445 |
| | Average ... ... ... ... | 132 |
| | Below normal ... ... ... | 423 |

*Deformities.*

It is necessary to state *in limine* that in no instance were slight defects registered, but only such as were of sufficient practical importance to the sufferer to need special attention at the hands of the drill-sergeant or the gymnasium instructor.

It is somewhat depressing to register in the twentieth century the large number of acquired preventable deformities (not momentous, it is true, but still indicative of inferior systems of nurture and education) which are presented by the most favoured class of boys in Great Britain—deformities occurring between the time of nursery-life and the completion of education in the preparatory school at the age of 13. Some of these infirmities arise from faults in nutrition during infancy, which entail rickets. And these defects in nutrition, as a cause, tend at the present day to involve the children of the rich even more than those of the poor in their sequent physical evils. For a preponderating proportion of mothers in the higher social rank either cannot, or will not, nurse their children; and more than this, substitute for the naturally-appointed breast-milk, boiled cows' milk, which, in the process of boiling, is deprived of some element in its nutritive value which tends to the advent of rickets or infantile scurvy. Also resort is made to various artificial foods, equally insufficient for the adequate nourishment of infants in their earliest months of life. On the other hand, some of these deformities may result from the debilitating effects of infantile maladies, while the remainder are incidental to unnatural school methods and the disfiguring effect produced by faulty postures, permitted or practically compelled during school-life, so that the supple bones become moulded imperceptibly, but surely, into abnormal forms.

| | | |
|---|---|---|
| Congenital deformities | Malformation of the ear | 2 |
| | Malformation of the little toe | 1 |
| | Hammer toes | 5 |
| | Undescended testicles | 9 |
| Acquired deformities | Antero-posterior curvature of spine | 1 |
| | Lateral curvature of spine | 445 |
| | Pigeon-breast | 126 |
| | Bow legs | 64 |
| | Knock-knees | 526 |
| | Flat feet | 329 |

### *Nervous Peculiarities.*

| | |
|---|---|
| Stammering | 70 |
| Lisping | 3 |
| Nervous twitching | 8 |

### *Defective Hearing.*

| | |
|---|---|
| Eustachian deafness | 13 |
| Aural deafness | 19 |
| Aural discharge | 2 |

### *Defective Sight.*

| | |
|---|---|
| Hypermetropia | 40 |
| Myopia | 128 |
| Astigmatism (considerable) | 27 |
| Colour blindness | 12 |
| Congenital cataract | 1 |

### *Teeth.*

In several instances no decayed tooth was to be observed. In the large proportion of cases the teeth, where decayed, had been carefully attended to by the dentist.

| | | |
|---|---|---|
| Teeth | Well-cared for | 943 |
| | Neglected | 57 |

### *Respiration.*

In the large proportion of observations the respiration was nasal and in many of these instances operations had already been performed for post-nasal growths. The respiration, where oral, was generally attributable to a very short upper lip, which prevented the mouth from being closed, or to the presence of adenoids.

| | | |
|---|---|---|
| Respiration | Nasal | 888 |
| | Oral | 112 |

### *Heart Disease.*

| | | |
|---|---|---|
| Heart disease | Mitral | 8 |
| | Aortic | 1 |
| | Irregular action of heart | 1 |

### *Chilblains.*

These vary greatly, some being of a trivial character, while others entail much suffering when they reach the stage of "broken chilblains." The chief sufferers are those of a florid complexion, which usually signifies atony of the vaso-motor system, and a still larger proportion suffer from the albuminuria of adolescents.

| | |
|---|---|
| Sufferers from chilblains | 437 |

### *Hernia.*

| | | |
|---|---|---|
| Hernia | Inguinal congenital | 7 |
| | Umbilical | 1 |

### *Varicocele.*

| | | |
|---|---|---|
| Varicocele | Right | 4 |
| | Left | 92 |

### *Urinary System.*

The number of instances of albuminuria is somewhat startling to those who have not devoted special attention to the subject at early ages; but this functional disturbance is not of serious importance. Amongst those who were known to have this ailment during school life I have never once found the condition existent when they had arrived at maturity. While the malady is largely dependent upon the state of the vaso-motor system, it is also subject to some condition of the blood, inasmuch as Sir A. E. Wright has shown incontestably that it is at once removed by supplying the blood with lime salts either in the form of an abundance of milk (which contains a large amount of lime) or by the administration of lactate of lime. In the interests of the growth, development, and happiness of boys at school, therefore, I would once again urge the importance of not placing lads exhibiting this condition upon a restricted diet and, as is so frequently and needlessly done, prohibiting games within reason, since experience has proved that these regulations are not consistent with their welfare.

| | | |
|---|---|---|
| Incontinence of urine | Diurnal | 2 |
| | Nocturnal | 26 |
| Albuminuria | | 157 |
| Sugar (a trace) | | 3 |

### *Puberty.*

Occasionally a boy has entered school as young as the age of 12·75, and once a boy came as late as 16·75; but in all other cases the age of entrance was between 13 and 15 years. Between these years 317 had already attained the stage of puberty; while, however, many have reached puberty at 13, its advent in a few cases has been deferred until after the age of 15.

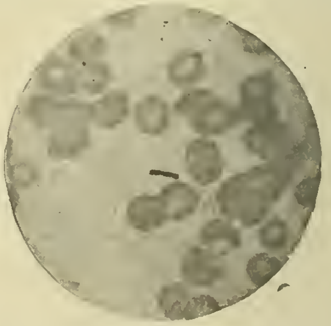
Rugby.

# A CASE OF TYPHOID FEVER: A NOTE ON THE BACTERIOLOGICAL EXAMINATION OF THE BLOOD.

BY WINIFRED MUIRHEAD, L.R.C.P., L.R.C.S. EDIN.,
ASSISTANT MEDICAL OFFICER, STIRLING DISTRICT ASYLUM, LARBERT, N.B.

IN THE LANCET of July 27th[1] there is a note on a paper published by Dr. W. Coleman and Dr. R. H. Buxton on the subject of bacteriological examination of the blood in typhoid fever; it appeared to me of interest to record the following case:—

In March last a female patient was admitted to the asylum suffering from acute delirious insanity with a history of illness ten days in duration. Her mental condition was one of great excitement and confusion, with hallucinations of sight and hearing. Physically the patient was found to have an enlarged and palpable spleen, discrete



Blood film, showing bacillus typhosus.

---

[1] THE LANCET, July 27th, 1907, p. 242.

raised pink spots scattered over the trunk, and tenderness was present in the right iliac fossa. Within 24 hours of admission, the arm being sterilised as for operation, ten cubic centimetres of blood were withdrawn from the median basilic vein and immediately inoculated into three 100 cubic centimetre flasks of broth in as equal quantities as possible, then incubated at 37°C. for 24 hours. A pure growth of a motile bacillus was obtained in each flask, which, when subcultured on agar streak and plates, appeared to be a typical growth of bacillus typhosus abdominalis and was verified by further inoculation. At the same time blood for a Widal reaction was sent into Edinburgh, the report being positive. A point of interest is that one of the blood smears made from the ear that day and stained with Jenner showed a few scattered bacilli in all five fields, usually two bacilli together, varying in size, and individual bacilli staining feebly. Although many more smears were made on subsequent days I was not again fortunate enough to find bacilli, which probably were present. The white blood corpuscles never rose above 8000, the differential count showing a slight increase of the polynuclear leucocytes. The fever ran a normal but very severe course and the patient made an uninterrupted physical and mental recovery.

I use the same methods for bacteriological examination of the blood in all acute insanities and on three occasions I have found bacilli in the smears from the peripheral blood of general paralytics during a congestive seizure.

I am indebted to Dr. George M. Robertson, superintendent, for permission to publish this case and to Dr. C. H. G. Gostwyck, medical officer, for clinical notes.

Larbert.

# Reviews and Notices of Books.

*A Text-book of Diseases of Women.* By CHARLES B. PENROSE, M.D., Ph.D., formerly Professor of Gynæcology in the University of Pennsylvania. With 225 illustrations. Fifth edition, revised. London and Philadelphia: W. B. Saunders Company. 1907. Pp. 550. Price 16*s.* net.

Professor Penrose has written this work for the student. He has therefore in most instances recommended only one plan of treatment and has omitted all facts of anatomy, physiology, and pathology which can be found in the general text-books on these subjects. The result is that he has been able to present all the essential facts of gynæcology within a comparatively small compass. The book is arranged on an anatomical basis, the diseases of the different regions of the generative organs being considered in order. The descriptions are of necessity concise, and indeed in some instances perhaps the author errs on the side of omission. Thus we find only one variety of cyst of the vagina alluded to and that one not the most common—viz., the one derived from the duct of Gartner. Injuries to the perineum are fully dealt with and Emmet's operation is well described and illustrated. The chapter on the Normal Position of the Uterus and its Supports is an excellent one and forms a good introduction to those which follow, dealing with the important conditions of prolapse and displacements of the uterus. The teaching as regards anteflexion agrees with that usually found in English text-books—namely, that it is of no importance by itself, and that the symptoms at times accompanying it require treatment, not the displacement, Some interesting statistics are given of the after-results of the operation of ventro-suspension of the uterus. Out of 310 cases operated upon by the author or his assistants the results in 211 are as follows. In 131 cases the symptoms for which treatment was sought were relieved, in 49 cases improvement followed, while in 31 cases there was no improvement. 20 women became pregnant, and all of these went to full term and the children were all born alive. In 18 of the cases the labours were normal, in one forceps were applied, and in one labour was prolonged and difficult, although instruments were not used. In eight cases miscarriage occurred, not an abnormal proportion out of 211 patients.

An interesting account is given of the rare condition of congenital erosion and split of the cervix. We notice that the author employs the ugly word "placentoma" as synonymous with deciduoma malignum. In considering the treatment of fibroid tumours the conclusion is come to that the great majority of these growths demand immediate operation. The writer remarks that no drug has been discovered which has any influence on the growth of these tumours. In discussing the treatment of inversion of the uterus some mention might have been made of the various operations apart from hysterectomy which have been devised for the treatment of those cases which cannot be dealt with by instrumental re-position. The advice which is given with regard to the operative treatment of cases of tubal disease is good and the dangers of the various conservative measures which are so strongly urged by many writers are pointed out clearly. That tuberculosis of the tubes is a fairly frequent affection is shown by the figures given by the author who has met with this condition in no less than 18 per cent. of the cases operated upon for inflammatory diseases of the uterine appendages. Recent observations have shown that cysts of the corpora lutea are not so rare as is stated in the chapter on Cystic Tumours of the Ovary. It is true that they rarely attain any very large size and are therefore more interesting from the pathological than from the clinical point of view. The great importance of gonorrhœa as an etiological factor in diseases of women is indicated by the fact that a chapter is specially devoted to a discussion of this affection. Professor Penrose is careful to point out how easily the importance of the gonococcus may be overrated and how difficult it often is to prove with certainty that any particular patient has really had an attack of gonorrhœa perhaps some years before she comes under observation, and the careful physician will therefore be loath to make such a diagnosis unless he has good grounds for doing so. It is an undoubted fact that many men who suffer from gonorrhœa before marriage become completely cured and never infect their wives.

The last five chapters of the book are devoted to the technique of gynæcological operations, the after-treatment of patients operated upon, and the effects of the removal of the uterine appendages. The author is to be congratulated upon his success in presenting the main facts of the diseases of women in a work of moderate size and in so clear and lucid a manner. The book should well fulfil the purpose for which it is written and it is a more trustworthy guide than many works of greater pretentions.

---

*Opuscula Selecta Neerlandicorum de Arte Medica.* (*Selected Memoirs and Addresses on Medical Subjects, by Dutch Authors.*) Amsterdam: F. van Rossen. 1907. Pp. 325.

HOLLAND has at all times been well represented in the world of literature and science, but for the general reader the nationality of many Dutch authors is obscured by the fact that at one time they wrote in Latin with their names latinised, and at a later period many of them wrote in French or German with a view to reaching a larger public than that of their own country. A modern tribute to some of the great names of old has been paid by a leading Dutch medical journal, the *Nederlandsch Tijdschrift voor Geneeskunde*, which has celebrated the fiftieth anniversary of its first appearance by publishing the handsome volume now before us. Out of the large amount of material at its disposal the committee appointed by this journal selected six articles by the following authors: Desiderius Erasmus of Rotterdam (in Latin); Antoni van Leeuwenhoek of Delft (in Dutch); Jan Swammerdam (in Dutch); Hermann Boerhaave of Leyden (in Latin); Jerome David Gaubius of Leyden (in Latin); and F. C. Donders of

Utrecht (in Dutch). Translations of each are also provided—in English for the first and second, in German for the third and sixth, and in French for the fourth and fifth. The article by Erasmus is a general encomium on the art of medicine, and contains a short notice of what would now be called a case of multiple personality. The example taken from the writings of Leeuwenhoek is a communication made to the Royal Society of London in 1688, in which he describes the blood corpuscles of the tadpole, frog, and fish and announces his discovery that in these creatures the arteries conveying blood from the heart led into the veins which returned the blood to the heart. The paper by Swammerdam is on various phenomena of contractility in the muscles of the frog. Boerhaave is represented by a public oration which he delivered before the University of Leyden in 1703. In a portion of this address he draws attention to the necessity for medical men having a good knowledge of the physical sciences, specially instancing geometry, mechanics (now subdivided into statics and kinetics), machine construction (*fabrica machinarum*), pneumatics, hydrostatics, and chemistry. This list of extra-medical subjects is quite as long as could have been expected at that period; microscopy, of course, was included as a department of anatomy and physiology. Gaubius was professor of chemistry in the University of Leyden, and the article by him now published was a lecture in which he claimed for chemistry a place among the subjects of the university curriculum (*chemiam artibus academicis jure esse inserendam*). The style of this lecture, which was delivered in 1731, is decidedly rhetorical and florid. Professor Donders of the University of Utrecht was, of course, a pioneer of modern ophthalmology. The specimen of his literary work given in the present volume is, however, a lecture delivered in 1848 on the Principle of Harmony in Animal Life. This principle is shown in the mutual adaptation of animals and their environment. In South America, for instance, the llama confines itself to the mountain regions of Chili and Peru without ever descending to the plains of Brazil. The reindeer, a native of Lapland, suffers from the summer heat when it is brought into lower latitudes; and, on the contrary, monkeys and tropical snakes require to be kept warm in northern climates. Full-page portraits of each of the authors except Swammerdam are given, and there is a large folding plate illustrating the microscopical discoveries described in the paper by Leeuwenhoek. The general appearance of the volume as regards typography and binding is tasteful and the monographs which it contains, Leeuwenhoek's in particular, are interesting to the student of the history of medicine.

---

## LIBRARY TABLE.

*Upon the Therapeutic Properties of the Waters of Baden (Switzerland) in the Treatment of Gout.* By Dr. PAUL RÖTHLISBERGER. London: John Bale, Sons, and Danielsson, Limited. 1907.—Within half-an-hour by rail from Zürich, the "Swiss Baden" continues to be frequented by sufferers from gout, acute and chronic, and for reasons well set forth in this tractate by the well-known consultant physician, Dr. Röthlisberger. Known to the ancient Romans, it has a special note of commendation from Tacitus, after which it seems to have fallen into neglect, to re-emerge, however, into fame and popularity in the fifteenth and sixteenth centuries. Since then it has, like other resorts of the kind, gone through many alternations of fortune, losing favour in the eighteenth century and regaining it in the nineteenth, till now, in the century not yet in its teens, it attracts a larger *clientèle* than ever. All these vicissitudes are graphically described by Dr. Röthlisberger who treats us to a "march past" of the resident physicians, mediæval and modern, under whom its fortunes have waxed and waned, and then proceeds to state and to strengthen its special claims on the victim to gout. These are, put shortly, its activity in promoting the excretion of uric acid; its influence upon the formation of uric acid in the body; and its effects in counteracting that demineralisation in gout which has been noticed by Gaube, Lahmann, and other authorities. Illustrating these positions by expert analyses of the waters and by clinical experience of their effects, Dr. Röthlisberger appends to his work a copious bibliography from which the scientific or professional reader can check or confirm the conclusions arrived at, which are: that the sulphur waters of the Swiss Baden employed externally and internally are of distinct benefit in gout, whatever may be the theory of its "pathogenesis"; and that be the predisposing causes of gout and the conditions favouring its development what they may the experience of centuries indicates the said waters "as a therapeutic measure which should not be disregarded or lightly discredited."

*Eating to Live, with Some Advice to the Gouty, the Rheumatic, and the Diabetic.* By JOHN JANVIER BLACK, M.D. London and Philadelphia: J. B. Lippincott Company. 1906. Pp. 412. Price 6*s*.—Under this somewhat whimsical title Dr. Black, who dates his preface from Delaware, U.S.A., has written a useful treatise on the principles of dietetics. Moderation in both eating and drinking is what he chiefly enjoins, together with the avoidance of haste and preoccupation at meal times. He therefore disapproves of several well-established usages, such as eating for mere social enjoyment and to pass away time. This he considers to be tampering with the digestive organs, and there is a characteristic American institution which he does not scruple to condemn in his reference to "the horrors of the quick lunch where all the laws of health as to digestion are violated." In his recommendations with regard to the selection of a suitable dietary Dr. Black makes much use of Professor Chittenden's experiments with "eating squads" composed of men of various ages. An average individual in the United States is said to consume daily 17 grammes of proteins, whereas seven grammes appeared to be sufficient for the members of Professor Chittenden's squad. Dr. Black therefore concludes that too much meat is eaten and he points out that this great nitrogenous excess is very trying for the kidneys. He particularly denounces the profusion of the daily bill of fare on board ocean-going passenger steamers and asks: "How is it possible for the system to rid itself of the waste from all this inordinate gourmandising?" No doubt his view is correct, but it must be remembered that the circumstances are exceptional, for passengers at sea find time to hang very heavy on their hands, and the hours spent at table are a welcome relief to the prevailing ennui. On the other hand, one of Professor Chittenden's physiologically correct menus, which Dr. Black quotes with approval, would create dismay in the mind of the ordinary diner-out. A great deal of miscellaneous information with regard to various kinds of meat, fish, fruit, edible fungi, and other foodstuffs is given in these pages, together with good advice on diet at various periods of life and in a number of diseases.

*Women's Health and How to Take Care of It.* By FLORENCE STACPOOLE. Second edition revised. London: Simpkin, Marshall, Hamilton, Kent, and Co. Bristol: Wright and Co. 1906. Pp. 165. Price, stiff boards, 1*s*. 6*d*.; cloth, 2*s*. 6*d*.—We are glad to see that the authoress has brought out a second edition of this little work. It contains in clear and simple language many things as to the care of their health that all women ought to know. The ignorance which many women display on the subject of the common disabilities of their sex is most astonishing and books like this, if they only can be placed in the hands of those for whom they are intended, will certainly do much good. We are glad to see that stress is laid in the preface on the danger incurred by women attempting to treat themselves in any way beyond the moderate limits here laid down, and we cannot but re-echo this warning. With this reservation this book rightly used should be of the utmost service.

## JOURNALS AND MAGAZINES.

*The Journal of Anatomy and Physiology*. Conducted by Sir WILLIAM TURNER, K.C.B., F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G. MCKENDRICK, F.R.S. Vol. XLI. Third Series, Vol. II., Part 4. With plates and illustrations in the text. London: Charles Griffin.—A notice is issued with this number to the effect that after the current year the journal will appear in two independent parts. One will be devoted to the consideration of anatomical, histological, morphological, and embryological subjects and will be designated the Anatomical Part at a cost of 21*s*. per annum. This part will be edited by Professor D. J. Cunningham, associated with Sir William Turner, K.C.B., Professor A. Macalister (Cambridge), and Professor G. S. Huntington (New York). The other will be named the Physiological Part and will be edited by Professor E. A. Schäfer (Edinburgh), associated with Professor F. Gotch (Oxford), Professor W. D. Halliburton (London), Professor C. S. Sherrington (Liverpool), and Professor E. H. Starling (London). The price per annum for the four quarterly parts will be the same—21*s*. The first Physiological Part will be published in January, 1908. The contents of the present number are as follows:—1. A New Topographical Survey of the Human Cerebral Cortex, being an account of the distribution of the anatomically distinct cortical areas and their relationship to the cerebral sulci, by G. Elliot Smith, F.R.S., professor of anatomy, Government School of Medicine, Cairo. The author believes that in human brains two or three hours after death appearances are presented which can be fixed by the intravenous injection of formalin and permit the several areas having distinct physiological functions to be mapped out. Illustrations in the text show the position of these areas, as well as the functions attributed to them. 2. A Study of the Navicular in the Human and Anthropoid Foot, by T. Manners-Smith, M.A., M.B. Cantab. In this article a careful description of the navicular is given which is illustrated by no less than 26 excellent drawings of the bone in man and animals. 3. Varying Positions of the Carpal Bones in the Different Movements at the Wrist, by Henry M. Johnston, M.B., R.U.I. (Dublin). The varying relations of the carpal bones to each other in the different movements of the wrist-joint are well given and illustrated by 18 figures in the text. 4. A Brain with Complete Absence of the Corpus Callosum, by John Cameron, M.D. Edin., F.R.S.E. (Manchester). No details of the psychological conditions of the subject could be obtained. 5. A Case of Fusion of the Semilunar and Cuneiform Bones, by Adams A. McConnell, B.A. Dub. 6. A Method for Determining the Position of the Base of the Eye Sock, by Evelyn John Evatt (Cardiff). 7. The Lateral Fixation of the Cervix Uteri, by Ella G. A. Ovenden, M.D. R.U.I. (Dublin). This part contains the index and title page and table of contents of the forty-first volume of the journal and the Proceedings of the Anatomical Society of Great Britain and Ireland for November, 1906.

*Man*.—In the August number of *Man* Mr. H. C. Lugg describes some singular customs observed by the natives of Natal and Zululand in connexion with puberty, burial, and pregnancy. Young men on first presenting symptoms of virility are required to bathe in running water, to have their heads shaved, and to abstain from any food into which milk enters. A young woman remains in seclusion in a portion of her mother's hut for two or three months. Bodies are prepared for burial immediately after death by doubling up the legs until the knees touch the chin and binding them firmly round with a blanket; the body is afterwards placed in the grave in a sitting position. Women on becoming pregnant are treated with various medicines for several months by licensed male or female herbalists, but no males are allowed to be present at confinements.

WE reviewed in our issue of August 3rd a work by Dr. J. Dulberg entitled "Marriage and Disease," being a translation and abridgment of a well-known German work on the same subject by Professor H. Senator and Dr. S. Kaminer. In the course of a favourable review of a useful work our reviewer alluded to the price being excessive, but Dr. Dulberg has recalled to our mind that the price was fixed not without a reason, and a reason of which we must all approve. In dealing with certain sociological topics it is sometimes wise to take care that books or treatises do not fall into the hands of the too young or the merely prurient, and the most efficient method of preventing this occurrence is to price the work highly.

# New Inventions.

## THE AEOSAN BATH.

AT the Second International Congress on School Hygiene recently held in the large hall of the London University an interesting demonstration was given of the mode of employing the aeosan bath for the treatment of disease. The aeosan bath provides a bath effervescing with either carbonic acid or oxygen gas. The apparatus is quite simple. It consists of a series of sparge tubes or tubes provided with a number of perforations. This coil is adapted to the shape of the bath and rests on the bottom. It is attached to a cylinder of compressed carbonic acid gas or oxygen by means of a flexible tube. On giving the valve of the cylinder a turn or two myriads of small bubbles stream through the water from hundreds of points and saturate it with gas. The Nauheim effervescent bath is thus imitated, and the use of chemical salts which often corrode the bath is dispensed with. Salt and calcium chloride can, of course, be added at the discretion of the physician. The Aeosan Company of 102, Charlotte-street, Birmingham, were responsible for the demonstration.

## THE "VARIABLE" ELECTRIC LAMP.

THE "variable" electric lamp contains two filaments, one of low and the other of relatively high candle-power. There are three contacts on the lamp which by an ingenious device can be made to rotate immediately under the circuit contacts. The result is that the small filament can be switched on to the circuit independently of the large filament and *vice versâ*, or both filaments may be connected. The lamp thus gives three powers at will by merely rotating it. A lamp, for example, may have a small filament giving five candle-power situated within a large filament giving 16 candle-power. Then three lights are possible—namely, five candle-power (the small filament), 16 candle-power (the large filament), or 21 candle-power (both filaments in the circuit). The economy it is possible to effect by this arrangement is obvious, while it is not difficult to think of a number of circumstances which would make the "variable" lamp of great convenience. The life of the chief filament may be spared and a saving of current effected. In short, the "variable" electric lamp affords the analogy of turning the gas up or down. The lamp may be obtained of the "Variable" Electric Lamp Syndicate of 109, Victoria-street, London, S.W.

THE TOTNES (DEVON) BOARD OF GUARDIANS AND VACCINATION.—AT a meeting of the Totnes board of guardians, held on August 16th, the report of the vaccination committee was adopted, stating that on consideration of the new order and after consultation with the public vaccinators they were of opinion that the present vaccination fees were not excessive and that no alteration should be made.

THE
# BRITISH MEDICAL ASSOCIATION.

MEETING AT EXETER.

## THE SECTIONS.

### PATHOLOGY.

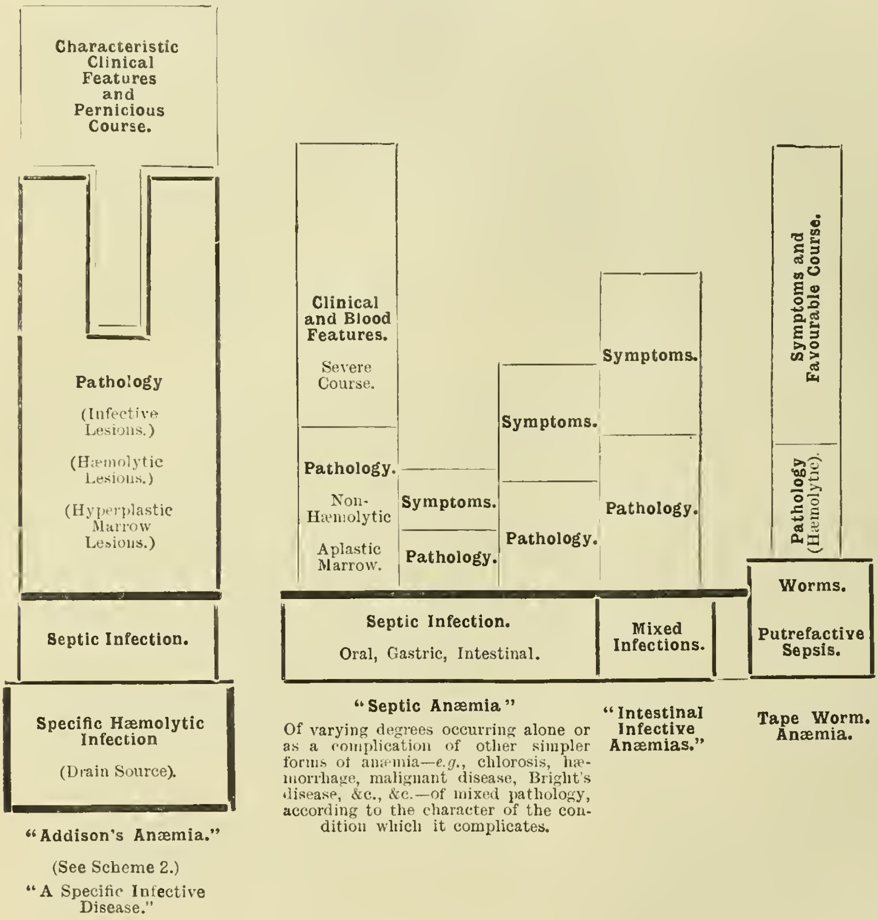
Wednesday, July 31st.

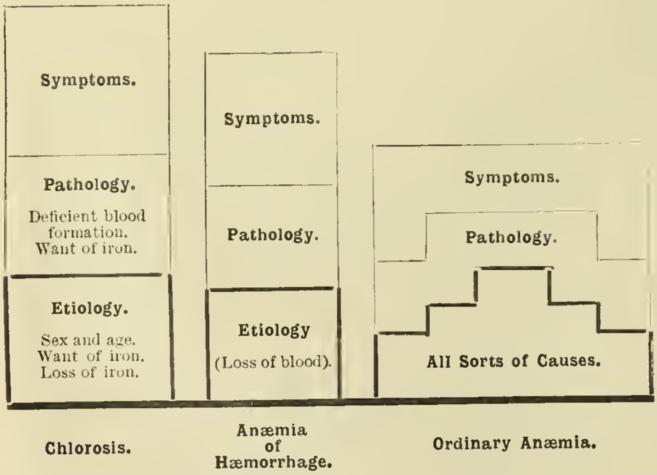
The President of the Section (Professor R. Muir of Glasgow) at once entered into the business of the day by asking Dr. William Hunter (London) to open the discussion which had been arranged on the subject of

*Pernicious Anæmia and Allied Conditions.*

Dr. Hunter said that he could best contribute to the purposes of the discussion by confining himself more particularly to the great problem of the unity or plurality of that condition first described by English observers under the title of idiopathic anæmia—a problem which continued to divide observers into two great and hostile camps. His own observations on the subject extended over 21 years of work and would be grouped under two headings: (1) the character of the observations on which the conclusions were based; and (2) the character of the conclusions formed. For and against the individuality of this admittedly most severe and fatal of all forms of anæmia he should illustrate and summarise his remarks by the aid of lantern slides of the observed lesions, curves and charts, and a series of schematic tables. The character of the observations had been in succession experimental, anatomical, clinical, chemical, diagnostic, and finally etiological, bacteriological, and historical. The pathological observations of the last seven years regarding the significance attached to the infective lesions subsequently to be described were based upon a general pathological experience extending over 1000 post-mortem examinations and the clinical observation of some 50 cases of the disease. The results showed conclusively that Addison's anæmia was not only a remarkable form of anæmia but a remarkable specific infective disease with characteristic etiology, and its mode of onset, clinical features, and course should be separated off, once and for all, from all other forms of anæmia in the manner indicated in the accompanying diagram (Scheme I.). With the assistance of other schematic tables Dr. Hunter traced the history of pernicious anæmia from the early records of Addison of an idiopathic anæmia without discoverable cause, no distinctive pathology, and without symptoms other than those due to the anæmia itself (1855–1871); through the school of Biermer, when the etiological factors were put down as poverty, chronic discharges, puerperal conditions, and so on, in addition to all the ordinary causes of anæmia, with "predisposition" as a support to any or all of these; the anatomical changes were stated to be of no pathogenetic significance whatever, although the hæmorrhages and the bone marrow changes were noted by many writers; and the symptoms dismissed as having no special features and little diagnostic value (1871–1888), so that the affection came to be regarded

Scheme I.


Characteristic Clinical Features and Pernicious Course.
Pathology
(Infective Lesions.)
(Hæmolytic Lesions.)
(Hyperplastic Marrow Lesions.)
Septic Infection.
Specific Hæmolytic Infection
(Drain Source).
"Addison's Anæmia."
(See Scheme 2.)
"A Specific Infective Disease."
Clinical and Blood Features.
Severe Course.
Pathology.
Non-Hæmolytic
Aplastic Marrow.
Symptoms.
Pathology.
Symptoms.
Pathology.
Symptoms.
Pathology.
Symptoms and Favourable Course.
Pathology (Hæmolytic).
Septic Infection.
Oral, Gastric, Intestinal.
Mixed Infections.
Worms.
Putrefactive Sepsis.
"Septic Anæmia"
Of varying degrees occurring alone or as a complication of other simpler forms of anæmia—e.g., chlorosis, hæmorrhage, malignant disease, Bright's disease, &c., &c.—of mixed pathology, according to the character of the condition which it complicates.
"Intestinal Infective Anæmias."
Tape Worm. Anæmia.



Showing the etiological relations of Addison's "idiopathic anæmia" and other forms of anæmia.

merely as a secondary form liable to be superposed upon any ordinary anæmia if the factors producing the primary disease were sufficiently active and powerful. Next, by the aid of the schematic table here inserted (Scheme II.), Dr. Hunter rapidly summarised his own observations and conclusions (1885–1903) and showed that the disease was a specific entity, that the primary etiological factor was a specific hæmolytic infection giving rise to a specific infective glossitis which precedes and underlies sepsis of the entire alimentary tract; that the pathological edifice raised upon these foundations was special, constant, and pathognomonic, and comprised lesions in the gastro-intestinal area, hæmolysis occurring in the portal circulation and evidenced by pigment changes in the liver and kidney and hæmolytic changes in the urine, changes in the bone marrow denoting increased hæmogenesis; that the symptoms were characteristic and could be arranged in hæmolytic and gastro-intestinal groups which were inseparable from the pathological conception of the disease and were surmounted by groups of symptoms referable to toxæmia and anæmia respectively. Dr. Hunter then referred to the confusion of the issue which had resulted from the writings of Ehrlich which put forward the theory that the essential changes were blood changes—megaloblastic degeneration—and that the disease presented no clinical features other than those

SCHEME II.

iv.

Pallor,
Weakness,
Dyspnœa,

**ANÆMIA.**

**General Symptoms:**

Palpitation,
Irritability,
&c.

**Fever,**
Headache,
Perspirations,
Drowsiness,
Languor,
Feelings of intense weakness

iii.

**Toxæmic Symptoms**
(1889).

**Nervous Symptoms,**
Pains,
Numbness and tingling,
Ataxia,
Peripheral Neuritis,
Mental disturbances.

**Atrophy,**
**Gastritis,**
**Catarrh,**
**"Infective gastritis"**
(mucoid vomit containing Streptococcus longus)
(1899).

**Gastric Disturbances and Lesions**
(Frequency).

STOMACH.

**Stomatitis**
(Frequency)
(1890-1900).

**Infective Glossitis**
(1889-1900).

**Symptoms** (Frequency). **Lesions** (Frequency).

MOUTH.

i.

**Glossitic, Gastric, Intestinal Symptoms:**

A group denoting *the site* of the infective lesions underlying the disease. Varying in intensity from time to time; insufficient of themselves to account for the anæmia; and not to be accounted for by any mere weakness resulting from the anæmia; but important as marking the existence of infective trouble in the portions of the alimentary tract affected.

ii.

**Hæmolytic Symptoms:**

Lemon Colour,
High colour of urine,
Urobilinuria,
Varying in intensity at different periods
(1889).

CLINICAL FEATURES.

(Four Groups.)

**MODE OF ONSET.**

**ANTECEDENT HISTORY.**

Sepsis (Oral and gastric). Drain poison infection (Sore tongue).

**Atrophy,**
**Enteritis,**
**Catarrh,**
**"Infective enteritis"**
(1900).

A relative, but no absolute increase of putrefaction
(1889).

**Ptomaines**
(1889).

**Chemical changes.**

**Intestinal Disturbances and Lesions**
(Frequency).

INTESTINE.

Urobilinuria,
Lemon colour,
Bilious attack.

**Polychromia of Bile.**

**Pigment Lesions.**

LIVER.

**Lesions**
(Frequency).

Hæmogenesis.

**Bone Marrow Changes.**
Secondary to the disease—denoting increased activity in blood formation.
*Hunter*, 1888.
*Mott*, 1890.
*Muir*, 1894.

GASTRO-INTESTINAL AREA
The site of the disease (1888).

**Symptoms**
(Frequency).

**PORTAL CIRCULATION** (Spleen, Gastro-intestinal Capillaries, Liver).

**HÆMOLYSIS** (Experiments) (1885-90.) { Constancy and Pathognomonic Importance of Pigment changes in Liver and Kidney (1888). Hæmolytic changes in Urine (1889).

**BLOOD.** (Degree and Character of Blood Changes) (Not distinctive).

PATHOLOGY.

**"Oral sepsis"**
(Frequency and importance)
(1890-1907).

as a Cause of
(1899)

**"Septic gastritis"** and of
(mucoid vomit containing Streptococcus longus).

**SEPTIC INFECTION**
(1900).

**"Septic Enteritis"**
(Streptococcus longus).

**Chemical change.**
A relative, but no absolute increase of putrefaction. Aromatic sulphates
(1889).

ETIOLOGY

**Specific infective Glossitis**
(Streptococcal)
(1901).
With striking clinical and pathological features (1900-7).

**SPECIFIC HÆMOLYTIC INFECTION**
Drain poison infection
(1889-1907).

**Special chemical changes**
(Ptomaines, 1890).

**Hæmolytic lesions** (1888).

**Pigment.**
Special in amount and constancy
(1888).

"INFECTIVE HÆMOLYTIC ANÆMIA."

This scheme shows the observation and interpretation of Addison's anæmia (Hunter, 1885–1903). Period 1. "Its Unity, Hæmolytic Nature, Gastro-Intestinal Site, Toxic Cause, and Toxic Clinical Features" (1885–1890). Period 2. "Its Infective Origin and Lesions" (1890–1903).

dependent on the poverty of the blood, a hæmatological conception of the pathology and symptomatology of the disease which had a tendency to mislead and confuse those who had not carefully followed and assimilated the constructive evidence accumulated by the speaker. Dr. Hunter then detailed, with the help of lantern slides, the changes, naked-eye and microscopical, that accompanied the lesions of the gastro-intestinal area, as shown in the tongue, stomach, and intestine, comparing and contrasting them with the appearances in similar situations in cases of other forms of anæmia, cancer, and the like.

Dr. G. LOVELL GULLAND (Edinburgh) next contributed to the discussion some theoretical considerations on

### *The Pathogenesis of Pernicious Anæmia.*

He stated that he should present some theoretical points for consideration. In the first place, although the exciting causes of pernicious anæmia might be very various, there must be some one cause common to all cases, since the effect in different cases upon the blood and marrow was so similar and was apparently influenced by definite laws. The disease was generally regarded as a reversion to an embryonic type—in other words, that pernicious anæmia was a condition resulting from the presence of a hæmolytic toxin which after the normoblastic process of regeneration had been exhausted in the endeavour to repair the destruction impelled the individual to substitute the megaloblastic process and thus produce an embryonic type of blood. It would, however, appear probable that a process of inhibition rather than destruction occurring in subjects who had some congenital or acquired weakness of the bone-marrow underlies the observed phenomena. In support of this contention he adduced the inhibitive influence of the toxin of pernicious anæmia upon the development, or at least the appearance in the blood of the neutrophile series of cells, and suggested that the relative lymphocytosis which was so common a feature of pernicious anæmia was actually a leucopenia of polymorphonuclear neutrophiles, although in the remissions of the disease there were usually many myelocytes in the bone marrow. Dr. Gulland then referred to his own interpretation of Dr. Goodall's researches on embryonic hæmatogenesis, and suggested that the erythroblasts without hæmoglobin were not derived from primitive megaloblasts but directly from mesenchyme cells, and that they must be regarded as peculiar to mammals in which the megaloblastic type of blood formation was embryonic only and did not persist throughout adult life. It was well known that a certain number of these megaloblasts were to be found in all mammals as a survival of embryonic life; if then the toxin of pernicious anæmia inhibited normal blood formation the demand of the organism for hæmoglobin carrying cells would stimulate these megaloblasts into activity, and produce the typical clinical picture of megaloblastic blood. These cells not being suited to the needs of the mammalian organism it was the products of their destruction that appeared as iron in the liver and urobilin in the urine. In conclusion, Bunting's experiments with ricin and saponin were referred to as showing that toxic influences produced conditions closely resembling those present in pernicious anæmia, and controverted Hunter's assumption that the blood destruction which he maintained was the feature of the disease took place in the portal system.

### *Typical Blood Characters in Pernicious Anæmia and Allied Conditions.*

Dr. C. H. MELLAND (Manchester) then briefly referred to the distinctive characters of the clinical symptoms of pernicious anæmia which were present in the majority of cases, but reminded the members of the section that such symptoms were occasionally absent, and stated that he wished to emphasise the pathognomonic importance of the blood changes which were so readily observed microscopically and further contended that treatment could only be successfully carried out when controlled by frequent blood examinations to note the effect of the measures employed. He then demonstrated a series of ten excellent lantern slides of blood films typical of various conditions. The first three were from cases of pernicious anæmia and showed respectively megalocytes, reduction in number of erythocytes, irregularity in their size and shape (but large average size) and their granular degeneration, and the slight reduction in number and the irregular but large size of the red cells in a convalescent case. The fourth from one of the cases after two and a half months' treatment showing the return of the blood cells to the normal type. The fifth, from a case of cancer of the stomach, which resembled clinically pernicious anæmia, showing the normal type of cell although the erythrocytes were reduced in number. The sixth from a case of rheumatoid arthritis, and the seventh, from one of secondary anæmia, showed irregularity in size of the red cells and some poikilocytosis, but an absence of megalocytes. The eighth, from a case of severe chlorosis, showed a few megalocytes, but the vast majority of the red cells were normal in character. The ninth, from a case of carcinoma of the stomach, showed several megalocytes, but the bulk of the red cells were smaller than normal and the cell index was stated to be reduced to 57 per cent. of normal. The last of this interesting series proved a typical case of leukanæmia.

Dr. A. GORDON GULLAN (Liverpool) then detailed the results he had obtained in

### *The Treatment of Pernicious Anæmia with Bone Marrow,*

premising that in each of the several cases that had come under his observation during the past few years the presence of a definite lesion of the alimentary tract could be demonstrated, which lesion was, he considered, the site of infection, whether microbic or toxic. He related the clinical symptoms of three recent cases and showed by means of curves (indicating the erythrocyte count and the hæmoglobin percentage respectively) the results of treatment. It was noted that the preliminary administration of arsenic in all cases produced a fall in each curve, but withdrawal of this drug and the substitution of fresh bone marrow from the ox, as red as possible, given at every meal in the form of sandwiches, resulted in a steady rise both in the number of red cells and in the amount of hæmoglobin present: in one case from 1,200,000 red cells per cubic millimetre, associated with 37 per cent. hæmoglobin, to 4,500,000 red cells, and 98 per cent. hæmoglobin after two months' treatment, and in another case from 2,500,000 cells, with 67 per cent. hæmoglobin, to nearly 5,000,000 cells and 110 per cent. hæmoglobin. The point which Dr. Gullan emphasised was that notwithstanding disinclination and nausea on the part of the patient the marrow must be persevered in and its administration pushed to a much greater extent than had hitherto been done.

Professor J. LORRAIN SMITH (Manchester), dealing with

### *Some Aspects of the Blood Changes in Pernicious Anæmia,*

differentiated between true pernicious anæmia and conditions which simulated pernicious anæmia. Of the latter, he instanced the classical cases of infection with bothriocephalus latus in girls which was at first thought to be chlorosis, and mentioned that similar infections with some other intestinal worms, such as tænia solium and tænia medio-cannellata, rarely produced anæmia; ankylostomiasis anæmia, which was of the chlorotic type; malarial anæmia, which was frequently of the pernicious anæmia type; and some recent cases of malignant tumour of the bone marrow and fibroma of intestine where the anæmia also presented features resembling pernicious anæmia. In true pernicious anæmia there were presented for study three groups of pathological changes—viz., those connected with the blood and bone marrow, those connected with the gastro-intestinal mucosæ, and those connected with sclerosis of the posterior column of the spinal cord chiefly in the dorsal and cervical segments, and while it was true that experimental study of the disease had failed completely to reproduce pernicious anæmia there was no evidence to contradict the hypothesis that pernicious anæmia was primarily due to a toxæmia. Contrasting chlorosis with pernicious anæmia so far as concerned the hæmoglobin present and the total blood volume, Professor Lorrain Smith stated that in the former disease hæmoglobin was present in normal amount but was *diluted* by reason of the excess of normal plasma in circulation, whilst in the latter a definite *hæmolysis* had taken place and the hæmoglobin was reduced in total amount to, say, 50 per cent. (the lowest observed being 28 per cent.), while the total blood volume might be normal, subnormal, or even increased.

Dr. R. HUTCHISON (London) then discussed

### *The Anæmias of Childhood*

and remarked upon the fact that pernicious anæmia did not occur in early life, which was remarkable whatever view was taken of the etiology of the disease when one considered the existence of all the conditions favouring megaloblastic formation and also the ease with which severe anæmia was produced; for in addition to the readily destructible character of the blood it must be recollected that at all rate up to the age of three years the long bones were entirely filled with red (not yellow) marrow, leaving no effective margin for new blood formation. The rarity of pernicious anæmia in childhood would suggest that the specific hæmolytic toxin postulated by Hunter as an essential factor was almost inoperative in childhood. Again, another bone-marrow disease, myelogenous leukæmia, was clinically extremely rare in childhood and the hypothesis was advanced that the comparatively common condition labelled lymphatic leukæmia was possibly the intensely acute form of myelogenous leukæmia which overwhelmed the infant before the typical granulation of the myelocyte had had time to develop, and it was suggested that the specific toxin of pernicious anæmia might similarly prove so rapidly fatal in early childhood that the clinical picture of pernicious anæmia never appeared and the possibility of the association of this disease with the acute and fatal cases of infantile purpuric anæmia was referred to. Dr. Hutchison then remarked upon the necessity for investigating the essential constituent in bone marrow which produced the good results recorded by Dr. Gullan, for while yellow marrow consisted principally of fat and red marrow only of hæmoglobin and nuclein compounds containing iron, it was difficult to attribute *a priori* therapeutic value to either form. Finally, Dr. Hutchison referred to the fact that prolonged destruction, or to speak more correctly long-continued loss of blood, did not give rise to pernicious anæmia and related a case of bleeding piles in which the continuous loss of blood extending over a period of five years gave rise to a profound anæmia in which the characters of the blood changes were those of secondary anæmia only and in which after operation and consequent cessation of the systemic drain complete and rapid recovery took place.

Dr. A. E. BOYCOTT (London) directed his remarks to

### *Ankylostomiasis Anæmia,*

for as the anæmia of ankylostomiasis had often been called pernicious, thereby implying that its symptoms, cause, and pathological anatomy were identical with those of idiopathic progressive anæmia, it would be useful to direct attention to some of the abundant points of distinction. First, with regard to the etiology and occurrence of ankylostomiasis anæmia it should be noted that although its existence had been known for more than half a century it was only within very recent times that it had been recognised as a factor to be reckoned with in the production of chronic ill-health and industrial inefficiency throughout the warmer parts of the world, and the speaker instanced the reports of the Puerto Rico Commission, which showed that fully nine-tenths of the agricultural population suffered from a profound ankylostomiasis anæmia and although the prevalence of the disease was limited in Western Europe by conditions of temperature, moisture, and oxygenation, still there were places where favourable conditions prevailed and its effects might be as severe as in the tropics. Two points of great pathological interest were then mentioned; the first, that two varieties of ankylostoma which zoologically were clearly differentiated specifically and, according to some, generically also, inhabited the same host and produced identical lesions in striking contrast to the specificity of host that generally characterises animal parasites; and the second, that many ankylostoma hosts presented no symptoms of infection beyond eosinophilia—anæmia being conspicuous by its absence. With regard to the symptoms of ankylostomiasis anæmia these were readily comparable to those of the "idiopathic" disease in so far as they were dependent upon the anæmia *per se* in each, but one practical point of some importance must be noted that the reduction in hæmoglobin as measured clinically bore a different relation to the severity of the symptoms in the two cases—for instance, a patient suffering from ankylostomiasis anæmia might be regularly engaged in fairly severe manual labour even when the hæmoglobinometer recorded from 30 to 40 per cent. only of the normal, while a case of pernicious anæmia with the same percentage of hæmoglobin would be practically prostrate and confined to bed. The blood changes, too, showed marked and fundamental differences. Histologically the majority of the erythrocytes in ankylostomiasis anæmia were smaller than normal and contained a diminished quantity of hæmoglobin. In pernicious anæmia, on the other hand, the bulk of the red cells were above the average size and the cell index was above normal. Again, in the anæmia due to the parasitic infection the total amount of hæmoglobin underwent no diminution, but the total blood volume was often doubled owing to dilution with normal plasma, and consequently as the anæmia progressed the colour index of the erythrocyte fell. This was possibly because erythrocytes were turned out by the bone marrow in numerical excess but in qualitative defect and the blood was diluted to avoid the difficulties of an increased viscosity, as, indeed, obtained in polycythæmia, while in the case of pernicious anæmia there was a real deficiency of hæmoglobin, but owing to the loss of red cells also the colour index remained fairly steady or even showed a tendency to rise as the anæmia became more profound.

Professor ALEXANDER R. FERGUSON (Cairo) who followed dealt with other aspects of

### *Ankylostomiasis Anæmia*

and stated that the opportunities of studying the blood in this disease as it occurred in Egypt were limited to its later stages and that it was quite usual to find when the patient first came under observation that his erythrocyte count was reduced to less than 2,000,000 per cubic millimetre and that the hæmoglobinometer yielded a reading of from 23 to 25 per cent. The anæmia itself was due to different factors and the effects upon the blood must be regarded as due to their mingled action. The factors germane to the discussion were (*a*) hæmorrhage, and (*b*) intestinal sepsis, and it was the influence of the latter that the speaker wished particularly to emphasise, as he considered that it sometimes conferred on ankylostomiasis anæmia special characters which closely simulated those of idiopathic progressive anæmia. The sites of attachment of the ankylostoma duodenale became sooner or later minute septic foci and in cases where these existed in large numbers the influence of septic absorption from the intestinal tract produced its effects on the blood. In every case of ankylostomiasis examined an active myeloid transformation was noted occurring in the femur. One feature of this red, vascular, and highly cellular tissue was the multiplication of nucleated red cells, a considerable number being of the megaloblastic type, which were observed in it. The presence of iron, either free or in very unstable combination, was easily demonstrable in the liver and sometimes in the liver and spleen of these cases.

Professor I. WALKER HALL (Bristol) then contributed

### *A Consideration of the General Metabolism in Pernicious Anæmia,*

and said that investigations into the general metabolism in pernicious anæmia had yielded somewhat discordant results. The variations being too pronounced to be ascribed to individual factors suggested that the "symptom-complex" of pernicious anæmia was the expression of the action on the tissues of more than one type of irritant. As the total metabolism did not reflect any unanimity in the cases examined nor throw any suggestive light upon the causative factors, it is necessary to look to the intermediate metabolism for further indications. The processes of oxidation considered as a whole were not materially altered. The blood contained a diminished amount of oxygen, necessitating additional labour on the part of the tissue cells to obtain the required oxygen, this over-effort resulting in exhaustion predisposing to fatty changes. It was significant, too, that sugar and starches were well tolerated. In pernicious anæmia there was no abnormal disintegration of protein, and retention of nitrogen was a common finding, and the metabolism of purin bodies was approximately normal. Amongst the mineral substances, retention of chlorides occurred in some cases; in others, however, marked losses occurred. With regard to the processes of digestion and absorption, distinct subacidity, or absence of HCl, and diminished secretion of pepsin were noted, and these secretions exhibited close relationships with the anæmia, being increased or diminished as the anæmia improved or progressed. Both the bile and the fæces contained more than the normal amount of urobilin. The fæces contained excess of nitrogen, the loss ranging from 5 to 21 per cent.; but it was uncertain whether this loss was due to deficient absorption, or to excess of secretions and infiltrations of the leucocytes, &c. The absorption of fat was not good. In many cases there was increase of fæcal fat and the fatty acids varied from 52 to 72 per cent. A feature of the blood in pernicious anæmia was the general increase in the residual nitrogen. The deepening of the colour of the urine was not yet satisfactorily explained, but the presence of hæmatoporphyrin had been recorded by Taylor and hæmoglobinuria by Schmidt. The percentage of urea N to the total nitrogen was extremely irregular, cases reported presenting figures varying from 67·9 to 85 per cent. Creatinin was always low. Indican was generally increased, the increase being attributed to intestinal conditions and to putrefaction changes in the extravasated blood. The total sulphur was variable. Albuminoses had been demonstrated in the urine by Laache and Noorden, and Schmidt. Glycosuria was very rare. The occurrence of amino acid, nitrogen, and of lactic acid required further investigation by trustworthy methods. The distribution of iron in pernicious anæmia varied considerably and was difficult of explanation. Post mortem it might be found deposited in the liver and kidney, or in the liver or in the kidney alone.

Dr. F. G. BUSHNELL (Brighton) presented some preliminary observations on

*The Treatment of Pernicious Anæmia by "Vaccines,"*

carried out upon four cases of pernicious anæmia occurring in the Sussex County Hospital during the past nine months. First pledging his adhesion to the toxic and hæmolytic origin of the condition, as elaborated by Dr. Hunter, the speaker explained that the treatment of pernicious anæmia was in general so hopeless that he isolated micro-organisms from the mouth and even from the fæces of his cases and prepared vaccines from the bacterial growths thus obtained, which were then utilised for the treatment of his patients. One case was treated successively with vaccines prepared from a streptococcus isolated from the mouth, a staphylococcus from the sockets of the teeth, a colon bacillus from the same site, and a colon bacillus obtained from the patient's fæces. At the commencement of the treatment there were less than one million red cells per cubic millimetre, and the hæmoglobin stood at 20 per cent. After three weeks' treatment marked improvement took place, but a relapse followed and the patient succumbed after three and a half months' treatment. The speaker brought forward his observations in this early stage in the hope that the vaccine treatment of pernicious anæmia might be given a more extended trial by the members of the section.

Dr. FRANK M. POPE (Leicester) referred to Dr. Hutchison's remarks upon anæmia in childhood and suggested that some cases of very acute anæmia terminated in chloroma, and in support of his suggestion quoted a case in which deposits of iron were found in collections of bacteria, surrounded by a casing of ferruginous pigment. (This case was fully reported by Dr. Pope and Dr. W. E. Reynolds in our issue of May 18th, 1907, p. 1351.)

The PRESIDENT of the section, before calling on Dr. Hunter to close the discussion, remarked that he concurred in the view that the abnormal blood destruction was the essential feature of pernicious anæmia; and in view of the pigment deposits in the organs and also having regard to the results of comparison with other and allied conditions the bone marrow changes could not be regarded as primary; instancing as other similar conditions bothriocephalus anæmia, pernicious malaria, and saponin poisoning, in all of which a megaloblastic change might be present.

Dr. HUNTER then congratulated the section on the mass of data and the wide range of observations that had been presented by the various speakers who had contributed to this discussion and in a few short sentences closed the subject of pernicious anæmia.

Professor WALKER HALL then communicated a new method for

*The Estimation of Fat in Fæces,*

which aimed at the estimation of the total quantity of the fat in the fæces, since this was now considered to yield a more accurate result than the percentage amount of separate portions. Each step had been worked out by comparing the results with similar estimations by the older methods. The method was as follows: 1. Administer a known quantity of fat in the food. Prescribe fluid extract of hæmatoxylin before and after the proteid concerned. 2. Transfer the entire stools to a mortar. Add normal KOH and stir until a homogeneous solution is obtained. Make up to 500 cubic centimetres with distilled water. Shake well. 3. Take 50 cubic centimetres and heat for 20 minutes. 4. Add 50 cubic centimetres 95 per cent. alcohol. Heat for 20 minutes. 5. Add strong HCl until markedly acid (any trustworthy indicator may be used). 6. Heat for 20 minutes. Filter. Evaporate down to 50 cubic centimetres. 7. Take 5 cubic centimetres and determine the percentage in a "milk" centrifugal tube, just as in an ordinary estimation of fat in milk. Or take 20 cubic centimetres in a Schmidt-Werner tube, and make a Schmidt-Werner estimation. After calculation from the dried residue of the aliquot portion of the ethereal extract, multiply the result by 25. If the process was interrupted at 3, then the amount of fat extracted approximated that of the fatty acids. This result deducted from the quantity yielded by the whole process, yielded, according to a number of comparative estimations, an approximate amount for the neutral fats. No definite claim was made for these figures. The method cited had been varied in many ways by the introduction of various fat solvents at all the stages, but their presence had introduced factors of pigment, &c., so they had been discarded.

Dr. FRANK EVE (Hull) presented a communication relating to

*Peculiar Bodies Found in Some Pathological Cerebro-spinal Fluids.*

The author concluded as follows: (1) In certain pathological cerebro-spinal fluids when examined fresh under an oil immersion there may be seen minute filaments with very active lashing movements simulating spirochætæ; (2) these may be seen to originate from the degeneration of leucocytes which extrude finger-like processes which become long filaments, which in turn run into rows of spherical heads; (3) these three stages are to be regarded (presumably) as surface tension effects, the first two stages being in unstable and the last in stable equilibrium; (4) the motility of the filaments, though very life-like, may be explained as the resultant of the Brownian movement of a number of beads on a string, each bead trying to oscillate independently; (5) motile globular bodies consisting of one or more spheres variously linked by filamentous junctions are often seen in cerebro-spinal fluids, sometimes in large numbers—these originate in the same way as the filaments; (6) the occurrence of these filaments and motile globular bodies may prove worthy of note clinically when found in quite fresh cerebro-spinal fluid, as they may then afford evidence of cell degeneration "intra vitam," or be an index of degenerative changes in the central nervous system.

Dr. BAYON (London) remarked that similar filaments could be observed extruded from degenerating white cells from the peritoneal cavity of the guinea-pig that had been first inoculated intraperitoneally with a small quantity of copper sulphate solution (1 per cent. or 2 per cent.) followed an hour or so later by an intraperitoneal injection of leucocytes; and, in reply to a query from the PRESIDENT of the section, Dr. EVE stated that the bodies he described had never been stained by any of the six or eight varieties of dyes that he had employed.

Professor JAMES M. BEATTIE (Sheffield) communicated some notes on

*A Sporozoon in Aural Polypi,*

which appeared identical in all respects with a sporozoon he had previously found in nasal polypi obtained from the same district in India and described at the Toronto meeting of the Association. That parasite had been studied by Minchin and Fantham and had been named by them Rhinosporidium Kenealyi. In the light of the present communication, however, it was evident that the name Rhinosporodium must be abandoned. In the aural polypi investigated the young and developing forms in the spore morulæ were very numerous, but all stages could be made out, and by a new method of staining a bright-red chromatic granule could be demonstrated in each of the spores in the spore morulæ. In the small cysts with undifferentiated granular protoplasm there was noted a pale, irregular nucleus and a bright chromatose granule or nucleolus, which in larger cysts becomes broken up into a number of scattered granules. In older cysts still the appearances very closely resembled those shown by the Leishman-Donovan bodies, and later the protoplasms became divided into 15 or 16 rounded spores. By special staining methods there was noted with absolute constancy a larger bright red granule in one particular spore which the speaker suggested might correspond to the blepharoplast of the flagellata, or might be comparable in function to the micronucleus of the infusoria, the spore containing it being a special generative one. Professor Beattie then gave details of the special methods of staining.

---

## OBSTETRICS.

### FRIDAY, AUGUST 2ND.

Dr. CUTHBERT LOCKYER (London) read a paper upon

*The Operative Treatment of Carcinoma of the Cervix Uteri.*

He referred to the fact that no united effort had been made in England to educate the public to recognise the earlier symptoms of uterine cancer and mentioned the success achieved by Winter in East Prussia in this respect. Winter began his crusade "against cancer" in 1902 and it was high time that English gynæcologists took some steps in this important matter. At the present time many cases which presented themselves were too far advanced to promise much hope from surgical interference. Dr. Lockyer stated that his experience in vaginal hysterectomy for cancer of the cervix was highly unsatisfactory and in spite of the fact that there had been no primary mortality he had given up the operation. Since July, 1905, he had adopted Wertheim's method, which he maintained was the only scientific way of dealing with cancer of the neck of the womb because it minimised the risk of implantation of cancer upon freshly-cut surfaces. It did this by means of a free dissection of the vaginal tube, and by the clamping of the latter before the vagina was amputated the growth of the cervix was thus hermetically inclosed in a vaginal capsule at the time of its removal. This was the one essential point in the operation. If the vagina was accidentally incised in the neighbourhood of the growth or if it tore on removal recurrence would take place. This was the reason for recurrence in one of Dr. Lockyer's cases. Whilst free dissection of the parametrium and removal of cancerous iliac glands were important parts of Wertheim's technique, they took a subordinate place when compared with the essential encapsulation of the cancerous area by the dissected vagina. Dr. Lockyer's experience in regard to abdominal panhysterectomy for cancer of the cervix comprised 12 cases. These 12 cases represented 70·59 per cent. of all cases seen between July, 1905, and July, 1907. Whilst employing the vaginal route he had operated upon 18 per cent. of the cases seen. Two patients had died from recurrence. In one of these cases the vaginal sheath had been accidentally incised, the other was a case which had been discharged as hopeless after six weeks' stay in one of the largest general hospitals in London. Six of the 12 cases were free from recurrence. From Wertheim's statistics it was seen that in his first 30 cases the primary mortality was 12, in his second 30 cases five, and in his third series three, and from this may be gathered the encouraging fact that extended experience reduced the primary mortality.

Mrs. Stanley Boyd (London) supported Dr. Lockyer's advocacy of the abdominal route. The line of recurrence was of importance and she asked Dr. Lockyer if the recurrences to which he referred were in the glands or in the connective tissue. She had frequently seen cystitis and inability to void urine. Dr. Herbert Spencer had already suggested that this was due to drainage by iodoform gauze—the method she used—and she would like to know whether other experience supported that of Dr. Lockyer that it was undesirable to drain in this way.

Dr. F. Edge (Wolverhampton) wished to ask Dr. Lockyer his view on the way of spreading of the uterine cancer. They knew that in cancer of the breast the spread was partially in the fascial interspace and connective tissues and that mere enucleation of lymph glands was useless. It was therefore a question whether removal of glands without their surrounding cellular tissue would tend to any permanent result in preventing recurrence.

Dr. Herbert Spencer (London) could not agree with Dr. Lockyer that vaginal operations were to be entirely abandoned. The history of the past, showing that the patients remained well for from five to 20 years after high amputation of the cervix with the galvano-cautery, proved that this method of operating could not be reasonably abandoned. He agreed, however, that in the more advanced cases Wertheim's operation was the proper one. The great point about the removal with the galvano-cautery was that local implantation of cancer cells was prevented. He did not use a gauze drain and still thought that the trouble with the bladder in Mrs. Stanley Boyd's cases was due to its use. He would like to point out that Werder, who had really been before Wertheim in the performance of the operation under discussion, had given up the operation because he thought the vaginal operation with galvano-cautery was better.

Dr. T. Wilson (Birmingham) said that his experience with Wertheim's operation was very unfortunate. Out of his first seven cases he lost five and during the last month he had performed it four times and had lost one case.

Dr. J. M. Munro Kerr (Glasgow) did not think that it was fair to compare statistics of Wertheim's operation with vaginal hysterectomy. He agreed that it was not good treatment to use a gauze drain.

Mr. J. D. Malcolm (London) supported the views expressed by Dr. Lockyer, assuming that when cancerous glands were present the operation was of comparatively little value. In early cases without infection of glands the excision of the uterus by Wertheim's method enabled the surgeon to remove the disease more freely than did any other method, and Dr. Lockyer had drawn attention to the very important point that the method enabled them to remove the growth without seeing it on any cut surface. The operation in early cases should have a very low mortality. He had for some years done a panhysterectomy wherever he had removed the uterus for fibroids and he was surprised to find how easy Wertheim's operation was. In fact, he thought that he felt more comfortable in avoiding the exposed ureters than in excising the cervix without seeing the ureters. The only scientific method was to get these cases early and to remove the parts as wide as possible as was done in any other part of the body.

The President of the section (Dr. E. H. Tweedy of Dublin) said that he always performed the abdominal operation now and did not pick his cases; he operated on every case in which he thought he could relieve the woman, quite apart from curing her. The essence of Wertheim's operation was that the uterus could be drawn over the pubes and the ureters made to shine through the peritoneum. He often operated on cases far more advanced than this. If the uterus was fixed it could not be drawn over the pubes, yet in many of these cases he had operated with much relief to the patient. He did not think a heavy mortality was a contra-indication. Many women with cancer left behind after the operation went back to their work, their pain was relieved, and they might live some time. It was a cowardly thing not to give women the benefit of surgical skill even if a cure could not be promised, and he did not believe for an instant that recurrence in these patients prevented other patients from seeking relief. In early cases the mortality by abdominal operation was no greater than was that by the vagina and he quite thought that if it could be done early enough the mortality of Wertheim's operation would be brought to 10 per cent.

Dr. Lockyer, replying, thought that the cystitis mentioned by Mrs. Stanley Boyd was due to the gauze drain. He was entirely against using the drain and had found that when he did use it he always got suppuration. The chief point of Wertheim's operation was that implantation of cancer cells could be prevented, and it was this more than the question of infected glands that made the operation so satisfactory. He could not agree with Dr. Spencer about vaginal hysterectomy being a good method. His own experience of losing seven out of 13 cases would prevent his doing that operation in the future.

Professor Paul Strassmann (Berlin) read a paper upon

*The Indication for, and the Methods of Operating on, Uterine Fibroids.*

He pointed out that from the point of view of operation the tumour was not so important as the complications which were so often found accompanying it. He laid great stress on disease of the appendages, heart disease, pressure on the bladder, and pain. He considered that vaginal hysterectomy was a better operation than abdominal hysterectomy when it was possible to perform it, because there was no abdominal scar, and no chance of stitch abscess, or hernia, whilst patients preferred the vaginal operation. In woman over 50 years of age with bleeding the operator considered that a diagnostic curettement should be made in order to determine whether hysterectomy or enucleation should be performed.

Professor Strassmann exhibited a large number of very beautifully mounted

*Specimens of Fibromyoma of the Uterus*

which he had removed.

Dr. Herbert Spencer was sure that the members of the section were very much obliged to Professor Strassmann for bringing so many magnificent specimens to this country at such trouble and expense. He (Dr. Spencer) was fond of enucleation through the vagina in suitable cases. Many times he had enucleated submucous fibroids, left subperitoneal fibroids behind, and the patients had got quite well and remained free of further trouble. Dr. Spencer did not agree that the vaginal route was a good way to remove large tumours; it was not so safe; bleeding could not be so well controlled as he himself knew from experience, having lost a case from hæmorrhage after the vaginal operation. He was very glad to hear that Professor Strassmann was in favour of panhysterectomy when operating from the abdomen. In the last seven years he himself had performed the operation of panhysterectomy from the abdomen 85 times with only two deaths, one from embolism on the twelfth day and the other from syncope on the sixth day. He looked upon the operation of supra-vaginal hysterectomy as an operation of the last century.

Dr. WALTER W. H. TATE (London) was interested to find that Professor Strassmann's experience was the same as his own with regard to the occurrence of carcinoma of the uterus with fibroids, that the presence of both in the same uterus was more common than was usually supposed, but he could not agree that the presence of fibroids was a predisposing cause of cancer; he thought that it was much more likely that both diseases had risen independently in the same woman. He thought that if a woman after 50 years of age, who was known to have a fibroid, suffered from bleeding carcinoma should be suspected. He (Dr. Tate) had noticed that the complications of the uterine appendages were very often associated with impacted fibroids, so that he regarded impaction as an indication for removal of the uterus even if it were giving rise to no symptoms. He also agreed that in fibroids complicating pregnancy abortion should never be procured. Either the patient should be allowed to go to term and the condition dealt with then as might seem best or the uterus with its contents should be removed at once.

Dr. WILSON could not see the advantage of the tongue-shaped incision advocated by Professor Strassmann over the T-shaped one. He had yet to be convinced of the advantage of leaving an ovary; he thought that the present teaching was based on mere assertion. There was no proof that could satisfy any scientific and impartial mind that it was better to leave an ovary. With regard to the relationship of carcinoma and fibroid he was sure that there was such a one. In 40 per cent. of his cases of carcinoma of the body fibroids were discovered; in his cases of carcinoma of the cervix only 5 per cent. had fibroids. Perhaps this might be due to the fact that carcinoma of the cervix occurred in younger women than carcinoma of the body; still the very large percentage of fibroids present in his cases of carcinoma of the body made him suspect there was something more than a casual relation between these two diseases. In his own cases of fibroids he had found complications of the uterine appendages in at least 40 per cent. He thought that the pyosalpinges were due to previous infection and not due to the fibroid—at any rate, as a rule. He thought a great danger of pyosalpinx was that it was likely to cause an impaction of the fibroid.

Dr. SWAYNE (Bristol) was in favour of panhysterectomy and not of supra-vaginal hysterectomy.

Mr. MALCOLM in the case of larger fibroids had obtained better results by abdominal removal, and thought that in panhysterectomy the chief point was drainage. He quite agreed with Dr. Wilson that there was no proof that the woman was better for having an ovary left, and he was led to this view by remarking how very well his patients had done in the cases where he had been forced to remove both ovaries.

Dr. MUNRO KERR remarked that the mortality of abdominal hysterectomy had now fallen to between 2 per cent. and 3 per cent., and he would like to know whether Professor Strassmann had found a lower mortality by the vaginal operation.

The PRESIDENT of the section said that he could not imagine why Professor Strassmann should prefer the vaginal operation to the abdominal. The danger of suppuration and hernia had been mentioned, but anyone who had seen Professor Strassmann operate would see that with all the great care he took the former complication would surely be very rare, whereas he did not think there was any risk of hernia with Professor Strassmann's transverse incision. His own mortality for abdominal hysterectomy was very small and the cases he had lost were due to gross neglect of some point of detail such as infected catgut ligatures. Professor Strassmann had stated that he would not operate on a myomatous uterus without marked reason, or in other words he would leave it alone if it was doing no harm. He could not agree with this. If a patient sought advice with a myoma it was because it was doing harm, and he had found that all patients with fibroids who had consulted him would be better without them. A woman with a fibroid was always in some danger, especially of carcinoma. It had been pointed out that only 2 per cent. of cases were complicated with carcinoma, but the mortality of hysterectomy was now only 2 per cent. He was surprised at Dr. Wilson's remarks about leaving the ovaries, for he could not imagine why a normal ovary should be removed when performing a hysterectomy any more than the woman's nose. If the ovary was healthy why not leave it? and he personally had found that his patients had done much better since he had left their ovaries.

Professor STRASSMANN replied in a very few words and stated that he did not have a higher mortality with vaginal hysterectomy than with abdominal, and that one of his reasons for favouring the vaginal operation was that the patients liked it better; they had no wound to see and there was no risk of hernia. He had had no death after vaginal hysterectomy but had had one after enucleation.

Dr. J. INGLIS PARSONS (London) read a paper on

*Notes on a Series of 100 Consecutive Abdominal Sections in Hospital Practice.*

He attributed great importance to aseptic measures in operating and considered them the chief means to success. He had lost one patient out of the 100. The cause of death was pneumonia seven weeks after the operation and was not apparently caused by the operation. He advocated myomectomy for single fibroids when it could be done without extra risk. Included in the list was one large fibroma of the broad ligament extending to the umbilicus, with the bladder adherent. Among the cases of ectopic gestation was one of tubal abortion without rupture of the tube. For chronic retroflexion in working women he advocated ventro-suspension, as it enabled them to do their work sooner. For hysterectomy in fibroids he preferred to work as much as possible without forceps on account of the bruising they caused. Seven cases of pyosalpinx, some with ovarian abscesses as well, were operated upon. Of these, two had embolism of a branch of the pulmonory artery, causing dulness over the third of the right lung. Hysterectomy was performed for two cases of persistent menorrhagia where several curettings had failed to stop the loss. Fibrosis of the uterus was the cause in one and recurrent adenoma in the other. The abdomen was closed in three layers. Silk was used for all ligatures and also for suturing the wound, with the exception of the middle layer where silkworm gut was used. The silk was boiled and afterwards put in carbolic.

The PRESIDENT of the section said that he always boiled his silk in corrosive sublimate, as by so doing the silk was impregnated with this substance which prevented any germs that might settle on it during the first three or four days, before the leucocytes were in a proper condition to deal with them, from growing. He also followed Kocher's advice and method to use the thinnest silk possible and never used a thicker size than number four. He used silk for all ligatures and sutures, except where suppuration was present, when he used catgut. He congratulated Dr. Parsons on his brilliant results, which, however, did not contain any cancer cases and personally he had found that this made all the difference to statistics. Lastly, he thought Dr. Parsons kept his patients in too long. He did not at all agree that a case which died from pneumonia a day or so before she was going to be discharged, after being in the hospital seven weeks, should be included as a death from abdominal section.

Dr. MUNRO KERR read a paper on

*Complete Rupture of the Uterus with Escape of the Fœtus into the Peritoneal Cavity; Panhysterectomy; Recovery.*

He detailed a case of complete rupture of the uterus with escape of the fœtus into the peritoneal cavity in which he had performed panhysterectomy with successful result. The uterus had ruptured after a prolonged labour apparently spontaneously. The rupture had not been attended with extreme pain or shock. When the abdomen was opened the full-time child was discovered free in the cavity along with only a very small quantity of blood, liquor amnii, meconium, and vernix caseosa. The child was removed, when the tear involving the right side and front of the lower segment of the uterus was readily seen. The uterine vessels were clamped, the uterus was quickly removed, after which the ligatures were applied to the vessels, and the abdomen washed out. The peritoneum in the lower part was brought together, a gauze drain inserted into the ragged broad ligament, the end being pulled out through the vagina. The abdomen was then closed and an intravenous saline transfusion given. The recovery of the patient was uninterrupted. Dr. Munro Kerr then referred to the symptoms and treatment of ruptured uterus, basing his remarks on the experience of 14 cases. He pointed out that the classical symptoms of profuse bleeding and extreme shock were in many cases not present, the collapse coming on very gradually and sometimes not at all. This applied to both forms—the complete and incomplete ruptures. As regards the treatment of the 14 cases, two died unoperated upon, three were treated by plugging, and nine were treated by hysterectomy. Of the three cases treated by plugging all the patients recovered and of the nine cases treated by hysterectomy three recovered. In all the cases of hysterectomy except one the rupture was complete, whereas in all the cases where plugging was had recourse to rupture was incomplete. Dr. Munro Kerr was of opinion that at present plugging offered a very good chance of recovery, except when the child had escaped into the peritoneal cavity.

The PRESIDENT of the section regretted that there was no time to discuss Dr. Munro Kerr's interesting paper and said that he thought that the chief point in these cases was to determine when to perform hysterectomy and when to plug.

## LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

### WEDNESDAY, JULY 31ST.

The PRESIDENT of the section (Dr. R. MCKENZIE JOHNSTON of Edinburgh) in a brief address welcomed those who had come to take part in the work of the section and expressed his grateful thanks for the very great honour that had been conferred upon him in making him President of that section. In view of the important discussions, in addition to the large number of papers, they had before them he decided to set an example in brevity by withholding the address which originally he had intended to give. He would merely mention two topics and commend them for individual consideration. The first was what they ought to do to emphasise the importance of the study of diseases of the throat, nose, and ear, and what could they do to advance the teaching of those subjects? Whilst it would be generally admitted that in the past ten years there had been a vast improvement in the general practitioner's knowledge of their speciality compared with former times, still there was great room for further education in that direction. The President confessed that he was not an advocate for increasing compulsory courses, he would prefer to make the student realise the importance of that branch of medicine rather than insist upon his taking a course the value of which he did not comprehend beyond the getting of a certificate. Their duty was to advocate the importance of a satisfactory knowledge of the subject and to neglect no opportunity of teaching those who require it. The second topic mentioned by the President was the present status of the speciality in the world of medicine. He referred to the time, not very long ago, when they were looked upon with doubt, with suspicion, and with distrust. Now they occupied an assured and respected position and they were entitled to hold up their heads with the best in any branch of medical or surgical science. They owed this in part to the high standard set by their leading men, and to the good work done and being done by a large class of able workers, and also in no small degree to the influence of such meetings as the one they were attending.

Sir FELIX SEMON (London) and Dr. W. JOBSON HORNE (London) opened a discussion on

### *The Differential Diagnosis of Tuberculous, Syphilitic, and Malignant Disease of the Larynx.*

Sir FELIX SEMON in his introductory paper summarised his experiences by saying that the differential diagnosis of the three diseases usually was easy, not rarely difficult, and in exceptional cases for a time almost impossible. Points to be considered were the following: (1) congestion of the vocal cords as an initial sign of tuberculosis, syphilis, and malignant disease (*a*, bilateral; and *b*, unilateral); (2) the difficulties of diagnosis between tuberculosis, syphilis, and malignant laryngeal tumours; (3) laryngeal tuberculosis in middle-aged or old people as a source of error in the differential diagnosis between tuberculosis, syphilis, and malignant disease of the larynx; (4) the difficulties of differential diagnosis between all three diseases when appearing in the form of infiltration; and (5) a combination of two of the diseases under consideration and consequent diagnostic difficulties. Sir Felix Semon, whilst agreeing that unilateral congestion of a vocal cord usually was the forerunner of graver constitutional mischief, warned against taking this rule as an infallible one. On the other hand, he quoted an interesting case in which bilateral congestion was the forerunner of malignant disease of the larynx. He gave a full description of tuberculous laryngeal tumours and discussed their differential diagnosis from carcinoma and gummata. He further stated that laryngeal tuberculosis in middle-aged or old people was more frequent than was usually assumed and warned against advanced age being too readily assumed as indicating malignant disease when an ulcerating tumour was seen in the larynx of such persons. This point was illustrated by the communication of several cases. The greatest difficulties, he stated, were encountered in the differential diagnosis between the three diseases when appearing in the form of infiltration of the larynx, inasmuch as the perichondritis, which might supervene in all the three diseases, might completely mask the signs of the original affection. In conclusion, he discussed the combination of two or more of the diseases under consideration and the diagnostic difficulties resulting from such a combination.

Dr. JOBSON HORNE, in introducing the subject for discussion, said that with a view of arriving at a solution of a problem such as the one before them it was as well to have some practical method or scheme to work upon. The scheme he was about to submit was one of elimination and he intended to approach the subject from the standpoint of the exclusion of tuberculosis. When the practitioner in regular attendance ventured an opinion upon an ambiguous disease of the larynx Dr. Horne found that it was generally correct, for the practitioner, being thoroughly conversant with the patient's previous health and family history, was in a position to exclude tuberculosis and syphilis as possible factors. The natural anxiety of a specialist was the fear that he overlooked malignant disease in its earlier stages. That anxiety was reflected in the fact that when an expert made an error in diagnosis it was usually on the side of regarding an innocent growth as malignant and not on that of overlooking malignant disease. Dr. Horne, speaking of his pathological experience, said that there had passed through his hands many specimens of tissue removed from the larynx in the belief that they would show malignant disease and which had occasioned surprise when they had demonstrated tuberculosis. In this experience he was not alone; he made this reference to errors in diagnosis in the practice of others with all humility to show that the elimination of tuberculosis was a point to be gained in the problem before them and the most practical way of arriving at a positive diagnosis of cancer. There were difficulties at times in adopting this course, but in the present day they were not so insurmountable. It would be assumed that the discussion was restricted to intrinsic disease of the larynx. Before proceeding to the objective aspect of the matter there were four facts which might be considered usefully: (1) pain; (2) vocal function; (3) fibrotic degeneration; and (4) previous local treatment. Pain was experienced relatively much earlier and more continuously in malignant disease, whereas in tuberculosis, and still more so in syphilis, there was often a noteworthy absence of pain when the larynx was at rest. Hoarseness or impairment of the vocal function—a most important premonitory sign—when persistent for a long period, was not against the disease being malignant; but a recurrence of impairment of vocal function after an immunity of a prolonged interval was consistent with a recrudescence of tuberculosis where perhaps the disease had become arrested in the lungs. Further, the character of the voice was helpful. There was this marked difference between the hoarseness occasioned by tuberculosis and that by syphilis or malignant disease. In the former the voice was weak, perhaps a mere whisper, due, as he had shown, to a myositis of the intrinsic muscles, whereas in cancer and syphilis the voice was strong though hoarse. Evidence of fibrotic degeneration in other organs pointed to syphilis, cancer, or pachydermia rather than to tuberculosis. As regards previous local treatment, it was essential to the formation of an independent opinion that the larynx should not have been spoilt by some previous application of drugs or cautery or by an attempt to remove a portion of the affected part for an examination. Passing to the objective part of the subject—namely, the laryngoscopic examination itself—Dr. Horne divided the cases into four groups, it being understood that each case was ambiguous and that they were arguing from the unknown to the known. 1. Congestion of the laryngeal mucous membrane and, perhaps, impaired motility of the vocal cord. The congestion might be patchy and limited to only one part, or it might be diffuse and involving both sides. The paresis might be bilateral. 2. Tumefaction, if not a definite tumour or excrescence, with, perhaps, congestion and impaired motility in addition. 3. Ulceration with, perhaps, the conditions mentioned in the previous two groups. 4. Lastly, evidence of disease external to the larynx such as glandular enlargement. To differentiate the fundamental changes in the larynx in quite the earlier stages of tuberculosis and malignant disease a minute knowledge of the histology was essential and more particularly of the distribution of the two varieties of epithelium, the columnar and the tessellated, and also of the sites of the transitional epithelium. Dr. Horne had previously demonstrated that the part of the laryngeal mucosa which was richest in glandular structure was most vulnerable to tuberculous infection. He had also shown that that part was covered with columnar epithelium, whereas the part which was clad with squamous epithelium was relatively free from glands and was immune against tuberculous infection, becoming involved only by continuity and at a later stage of the disease. On the other hand, it was commonly accepted that epithelioma was by far the most common form of intrinsic cancer of the larynx. It was also commonly agreed that the ventricular bands and the vocal cords were the more frequent sites of origin of epithelioma. Dr. Horne was in favour of still further restricting this statement to those parts of the ventricular bands and of the vocal cords which were covered with squamous epithelium, and of adding to the statement the sites of transitional epithelium. It therefore followed that it was of the utmost importance as an aid to the differential diagnosis between tuberculosis and cancer to localise the site of origin in the earlier stages which they were then considering. Should the congestion be so diffuse as to involve one entire side of the larynx or both sides, then steps could be taken to blanch it by the application of cocaine and adrenalin. The development of adenoid cancer in the regions reserved for tuberculosis was exceptional and did not invalidate the general application of the principles which he had enunciated. All three diseases, he went on to say, had this in common: they consisted essentially, but in varying degrees, of a cell proliferation and infiltration which burrowed extensively and deeply with the result that as the disease progressed the intrinsic muscles became affected and impaired mobility of one or both cords resulted. It therefore followed that impaired mobility was not peculiar to malignant disease and although an important sign when present it might be absent in quite the earlier stages. It would seem that impaired mobility of a vocal cord was of value as evidence of malignancy in those cases in which the disease presented a well-defined tumour or excrescence, other than pachydermia, and which might be mistaken for an innocent papilloma or new growth. The sign was also of service in cases in which the origin of the growth was so deep-seated that fixation of the cord was the only clinical feature observable in the larynx above the level of the glottis. Passing to the second group—the stage of tumefaction or of a definite tumour or excrescence—he said that the situation of the tumour would assist in excluding or admitting tuberculous disease into the diagnosis, unless the tumour happened to be situated at a site of transitional epithelium such as the vocal process, as was the case in pachydermia laryngis. Dr. Horne referred to a paper which he read at the Portsmouth meeting of the Association in 1899 to show that pachydermia laryngis should be regarded more as evidence of disease than as a disease in itself. It might be occasioned by syphilis, or tubercle, or cancer of the larynx, and even the variety which might claim to be called simplex was not uncommonly associated with fibrotic disease in other organs. It therefore followed that a diagnosis of pachydermia was not sufficient in itself. They had to be prepared to exclude the causation of the pachydermia. In illustration of this point Dr. Horne referred to the case of the late Emperor of Germany. Passing to the third group of cases in which the tumefaction had broken down and there was ulceration, he reminded them that they would be considerably assisted in excluding tuberculosis by the pathological fact which he had demonstrated elsewhere—namely, that when tuberculous disease in the larynx presented ulceration that in the lungs had already reached cavitation; further, that primary tuberculosis of the larynx was a negligible quantity. Dr. Horne briefly referred to other forms of ulceration of the larynx which might simulate malignant disease and cited a case in which extensive ulceration along one-half of the larynx had been the site of infection in a case of infective endocarditis. Passing to the fourth and last group, in which there was external evidence of laryngeal disease such as glandular enlargement, he said this might appear to be in itself presumptive evidence of the disease in the larynx being of a malignant nature. It did not, however, exclude the possibility of it being tuberculous. Before eliminating tuberculosis in a differential diagnosis he mentioned that cases had been recorded in which tubercle and cancer had occurred in the same larynx. Assuming that tuberculosis had been eliminated in the manner indicated from the diagnosis, the problem then resolved itself into a diagnosis between syphilis and cancer. Tuberculosis having been excluded, large doses of iodide of potassium might then be pushed without doing the patient harm, and assuming that the condition in the larynx cleared up, as it generally did if it was purely syphilitic, then the diagnosis might be allowed to rest with that of syphilis, more particularly if there was a strong history in support of it, but needless to add, such a history would not exclude the possibility of syphilis being only a factor in the case and not the important part of the disease. In connexion with cancer Dr. Horne described a method of transillumination of the larynx as an aid in differential diagnosis. In his concluding remarks he referred to the all importance of a laryngoscopic examination and of that examination being made at the earliest possible moment. They had been discussing the most dreaded diseases of the larynx, diseases all amenable to local arrest, if not to cure, when detected early, but all three diseases were so insidious in their onset that they would seem to have no beginning, and yet so progressive in their character that an early examination afforded the only hope of saving the larynx from becoming a most veritable citadel of misery.

Dr. N. C. **Haring** (Manchester) attached importance to fixation of the cord as evidence of malignancy. In secondary syphilis the anterior part of the cord usually showed more congestion than in tuberculosis or cancer. The damage done to the larynx in some cases of enteric fever at times presented appearances which were difficult to explain apart from the history of the case. In tuberculous ulceration of the posterior part of the larynx the lungs were less extensively affected.

Mr. **Herbert Tilley** (London) cited a case of tuberculosis which clinically so closely resembled cancer that an exploratory thyrotomy was performed before the diagnosis was cleared up.

Dr. J. **Dundas Grant** (London) considered that the unilaterality of congestion was of service as an aid in the diagnosis only in the very earliest stages of tuberculosis. He referred to a roughness associated with redness of the vocal cord met with in tubercle and differing from the beefy redness seen in simple laryngitis. In secondary syphilis the redness was quite indistinguishable unless mucous patches were present.

Dr. G. **William Hill** (London) spoke in favour of the clinical procedure indicated by Dr. Horne. Animal experiments necessitated a loss of what was often valuable time.

Dr. B. H. **Scanes Spicer** (London) considered that Dr. Horne had put before them the method of the future for making a differential diagnosis. He considered that extrinsic malignant disease was more frequent than commonly stated and that hospital statistics would support this view, using the term extrinsic to include those cases originating within the larynx and extending beyond as well as those strictly extrinsic in origin.

Dr. H. S. **Birkett** (Montreal) mentioned that tuberculin had been found of the greatest value in America, especially in the diagnosis of those cases which presented only localised hyperæmia of one cord and without any signs in the chest.

Dr. W. S. **Syme** (Glasgow) pointed out that in the early stages of syphilis the tint of the laryngeal mucosa was more purple, whereas in the early stages of tuberculosis it presented rather a pinkish colour.

Dr. **Adolph Bronner** (Bradford) spoke of a diffuse fibroma of the vocal cord occurring in old people which at times presented a difficulty in diagnosis. The tuberculin test was liable to be followed by œdema necessitating tracheotomy, and it was as well to be prepared for this contingency and to have the patient under observation.

Dr. J. B. **Ball** (London) spoke in favour of iodide of potassium for diagnostic purposes, and speaking on the general question he considered that there were some cases in which syphilis, and others in which tubercle, would have to be excluded first.

Dr. P. WATSON WILLIAMS (Bristol) referred to cases in which either tuberculosis or syphilis could not be excluded. In such cases a heaviness in the movement of the cord improving under vocal rest was in favour of the disease being tuberculosis.

The PRESIDENT of the section, in summing up the discussion, considered that it would prove to be of service to the practitioner. The appearances in these three diseases were not stereotyped; they often overlapped, so that there was no short road to a definite diagnosis. The discussion would curtail a number of mistakes and he agreed that it was important to separate the cases of tubercle as early as possible.

Sir FELIX SEMON and Dr. HORNE thanked the section for the attention it had given their papers and replied.

Mr. W. STUART-LOW (London) read a paper on

*Submucous Turbinectomy,*

in which he said that the operation was intended for the reduction of an enlarged inferior turbinate body without destruction of the soft parts covering it. The operation was also applicable to the middle turbinate body. He described the details of this operation which could be carried out under a local anæsthetic. In the after-treatment he had found strips of gutta percha tissue of service in dressing the wound.

Dr. HILL, Dr. HORNE, and Dr. WATSON WILLIAMS, who spoke, were of opinion that the operation was one that would seldom be called for.

Mr. STUART-LOW replied.

Dr. ROBERT FULLERTON (Glasgow) contributed the notes of

*A Tumour which was Removed from the Right Tonsil and regarded as being a Teratoma.*

In his absence the notes of the case were read by one of the secretaries. Drawings and microscopic slides of the tumour were exhibited.

### THURSDAY, AUGUST 1ST.

Dr. WATSON WILLIAMS demonstrated Instruments for the Diagnosis and Operative Treatment of Sphenoidal Sinus Suppuration.

Dr. W. MILLIGAN (Manchester) and Dr. HILL opened a discussion on

*The Treatment of Chronic Suppuration of the Middle Ear without Recourse to the Complete Mastoid Operation.*

Dr. Milligan, in his introductory paper, discussed the various characters of the aural discharge and also the varieties of bacteria found. Passing to the subject of treatment he divided this into four headings: First, with a view of maintaining free drainage, which was most essential, small perforations might be enlarged and the contents of the middle ear drained by means of aspiration by Siegle's or Sondermann's apparatus. Irrigation of the middle ear by means of the Eustachian catheter could only be carried out by skilled hands. Secondly, in view of the fact that a large proportion of cases of middle-ear disease were due to infection through the Eustachian tube, it was necessary to treat all pathological conditions of the nose, naso-pharynx, and mouth. Thirdly, he dwelt upon the importance of a bacterioscopic examination of the discharge as a basis for local treatment. Fourthly, he discussed the various operative measures. Local curetting through the meatus he was not in favour of, as it was difficult to determine by inspection the actual extent of the bony implication. The indications for removal or otherwise of the membrana tympani and ossicles were mentioned, but he was not an advocate for ossiculectomy.

Dr. HILL introduced the subject for discussion with a lucid review of the development of the surgery of the middle ear and of the mastoid process, illustrated by charts demonstrating the chronology of the various operations and the names of the operators. The surgical measures were considered under the following headings:—I. Incisions of the membrane and of adhesions. These alone were rarely of permanent utility but were useful for getting at granulations at the mouth of the Eustachian tube and opening up diseased spots near the annulus. II. Operations by means of curettes, snares, forceps, &c., for the removal of granulations, polypi, loose ossicles, &c., when these were well within view through the meatus. III. Ossiculectomy, with removal of most of the remains of the membrane, on theoretical grounds might appear to be the ideal operation in most cases for securing good drainage of the attic and antrum and for the better carrying out of the intratympanic and other local medications. In practice, however, ossiculectomy, it was contended, had only a limited field of usefulness in chronic middle-ear suppuration on account of the tendency in certain conditions to the formation of diaphragms and regeneration of membrane and of adhesions which often increased deafness and impaired drainage. Dr. Hill submitted that it was undesirable to perform ossiculectomy in the following circumstances:—(*a*) When the perforation was small. In these cases adhesions and re-formation of membrane were prone to result. (*b*) In cases with large reniform perforation, with a shortened manubrium and no adhesions nor granulations evident, and good drainage. This condition was often the result of scarlet fever, the incus was usually absent, and the hearing was often good. (*c*) Where there was a good hearing in spite of chronic suppuration. Here, should really efficient local and hygienic treatment fail, some post-aural operation—e.g., of the type of Küster or of Stacke, but stopping short of myringectomy as recommended by Stacke, Hartmann, Siebenman, Seibe, Jansen, Malherbe, and others eight years ago, and more recently followed by Grant and Heath—was preferable to ossiculectomy through the meatus. (*d*) In cholesteatomatous conditions intrameatal operations were not as efficient as post-aural complete operations and were not free from risks and were rarely to be recommended even as tentative measures. (*e*) In necrosis of the meatal walls, especially where there was a sinus leading into the external wall of attic or into the squamous cells on the roof of the meatus, nothing short of a post-aural radical operation was likely to be of permanent benefit. On the other hand, ossiculectomy appeared to be a justifiable (though uncertain) procedure as a tentative measure which might in some few instances prove curative in the following conditions:—(1) In attic disease with perforation of the membrana flaccida with or without intratympanic granulations and evidence of ossicular necrosis—provided always that there were no bony fistulæ through the external attic wall or on the roof of the meatus and that there was a large perforation in the membrana tensa; (2) in evident displacements of the malleus or of the incus or of both with or without granulations—always provided there was not much membrana tensa remaining; (3) in large perforations of the membrana tensa with or without granulation, but with intermittent stopping up of discharge and recurrent headache; and (4) in large perforations where there was no marked obstruction to discharge but where granulations were seen high up in the tympanum and surrounding the ossicles. IV. Intrameatal atticotomy (usually combined with ossiculectomy) was not believed to be widely practised at the present day, though in recent years it had been resuscitated by Faulder White and strongly advocated by him. It was a question worth discussing whether this operation were often advisable even in the attic disease in view of the real, though slight, danger of wounding either the facial nerve or the internal ear—dangers which were far less likely to happen in the more open radical operation. V. Woolf's intermeatal antrotomy was apparently obsolete and unlikely to be revived.

Mr. E. CRESSWELL BABER (Brighton) continued the discussion and was opposed to the performance of minor operative procedure. He did not consider that in their present state of knowledge treatment could be based upon a bacteriological diagnosis.

Professor RICHARD REEVE (Toronto) spoke in favour of the importance of a thorough examination of the nose and structures adjacent to the ear.

The discussion was continued by Mr. STUART-LOW, Dr. SYME, Mr. GEORGE JACKSON (Plymouth), Dr. H. SMURTHWAITE (Newcastle), Dr. BRONNER, Dr. DUNDAS GRANT. Mr. A. L. WHITEHEAD (Leeds), Dr. A. LOGAN TURNER (Edinburgh), and Mr. W. J. CHICHELE NOURSE (London).

The PRESIDENT of the section summed up the discussion and Dr. MILLIGAN and Dr. HILL replied.

Dr. SYME read a paper on

*A Case of Acute Suppuration of the Middle Ear complicated by Septic Meningitis and Brain Abscess.*

After giving a full description of this case Dr. Syme discussed the question of what had been called meningism and remarked on the difficulty which frequently arose in deciding as to whether the symptoms which made up this phenomenon were due to actual intracranial disease, to serous meningitis, or to cerebral irritation from toxins or from the proximity of acute inflammatory conditions in the bone.

Mr. Chichele Nourse read a paper entitled "Observations on Frontal Sinusitis."

This concluded the day's proceedings.

### Friday, August 2nd.

Mr. Thomas Guthrie (Liverpool) demonstrated a series of drawings illustrating

*The Development of the Middle Ear, with Special Reference to the Origin of the Mastoid Antrum.*

The drawings were made from microscopical specimens of fœtal temporal bones of ages ranging from two and a half to seven and a half months of fœtal life. Serial sections were cut of the temporal bones, the plane of section corresponding as nearly as possible with that of the tegmen tympani. Mr. Guthrie considered that the drawings bore out the statement of Professor Young and Dr. Milligan[1] that the antrum was essentially a part of the middle-ear cleft and was not formed as a diverticulum of the tympanum. He thought that the drawings showed also that in the early stages of development the antrum, although present, was relatively of very small size as compared with the tympanic and Eustachian portions of the middle ear cleft. During the greater part of fœtal life the antrum was in no way marked off from the rest of the cleft and was indeed nothing more than the small angular recess with which the middle-ear cleft terminated posteriorly. The walls of the recess were formed by the squama externally and the periotic internally, while it was closed behind by the apposition of these bones. The drawings showed the gradual increase in size of this recess and made it clear that its growth was relatively very great as compared with that of the tympanic portion of the middle-ear cleft, so that at birth the antrum was of large size and marked off from the remainder of the cleft by a definite aditus. Mr. Guthrie wished to express his thanks to Professor Patterson of Liverpool for providing the material for this work, a great part of which was done in his laboratory.

Dr. Eugene S. Yonge (Manchester) read a paper entitled

"*Observations on the Determining Cause of the Formation of Nasal Polypi.*"

Dr. Yonge said it was generally considered at the present time that a mucous polypus of the nose was, essentially and in its earliest stage, a patch of mucous membrane which had become œdematous, and that the pedunculated appearance which a polypus commonly assumed was a character not peculiar to itself but shared with many other intra-nasal swellings and new formations, and chiefly referable to known physical causes acting on the primary patch of swollen, œdematous mucosa. The question of etiology centred, therefore, on the determining cause of the initial œdema, and of this process a number of explanations, unfortunately more or less incomplete, had been advanced. His investigations (of which a full account had been published in a recent monograph[2]) had led him to the conclusion that the localised œdema of the mucous membrane, which represented the first stage of polypus formation, was a serous infiltration of the tissues, the result of obstruction of the efferent circulation of the part; that the particular vessels which became obstructed were the periglandular capillaries and veins; and that the circumstance which caused the obstruction was the distension or cystic dilatation of the mucous glands—more particularly the gland ducts. The contention that dilatation of the mucous glands was the determining cause of polypus formation, by leading to the localised œdema which initiated the process, was supported by evidence derived from pathological, experimental, and clinical observations which Dr. Yonge detailed.

Dr. Watson Williams could not agree with the theories put forward by Dr. Yonge. Reflex neuroses, he considered, very frequently but not always were due to pathological changes, perhaps unrecognised and unrecognisable, but previously established. Polypi were never due to the vascular changes associated with a pure neurosis. They were the outcome of obstruction in the lymphatic vessels in a restricted area of the involved mucosa, an inflammatory change resulting from infection; in a word, an infective lymphangitis with blocking of the vessels analogous to elephantiasis. If the obstruction were temporary the œdema might disappear; if permanent a polypus formed and continued to grow, being fully supplied with blood; indeed, polypi were usually highly vascular structures. In course of time various hypertrophic changes, due to the excessive lymph supply, took place in a polypus.

Dr. Scanes Spicer, Mr. Stuart-Low, and Dr. Bronner continued the discussion.

Dr. Ball considered that there were three forerunners of nasal polypi—namely, catarrhal conditions, paroxysmal sneezing, accessory sinus suppuration, and that cases could be placed in one or other of these three classes.

Dr. Milligan said that Dr. Yonge's monograph was not convincing. He (Dr. Milligan) desired to associate himself with Dr. Watson Williams and the lymphatic theory, and inquired if Dr. Yonge's theory that polypi were due to an irritant were correct why was it that polypi were never found in snufftakers.

Dr. Whitehead could not fully accept Dr. Yonge's paper. Dr. Whitehead considered that there must be some definite abnormality in the nose, and he believed in the hereditary factor. The infective theory did not explain the occurrence of a single and very large polypus.

The President of the section considered that the views put forward by Dr. Watson Williams were applicable to a large number of cases. The President pointed out that it was not easy to examine cats' noses during life, and it was important to know the clinical condition of the cat as well as the pathological condition met with after death, and on that account the experiments reported by Dr. Yonge were not completely satisfactory.

Dr. Yonge, in reply to a question by the President, stated that the irritant used in these experiments was olive oil with oil of mustard to set up an inflammatory process and for the purpose of bringing about a distension of the glands the animal was placed in a chamber with pepper on the floor.

Mr. George Jackson read a paper entitled

*The Relative Frequency of Caries of the Superior and Middle Turbinates and Ethmoid Bones, and the Importance of Examining the Nose in all Cases with Symptoms of Deafness, Giddiness and Vertigo, and Throat Affections, with some Remarks on the Treatment thereof.*

He stated that whilst he had nothing new to bring forward he was desirous of drawing attention to a condition which was frequently overlooked—namely, ethmoidal disease. Although he was not in favour of the term "necrosing ethmoiditis" he could substantially endorse the work done by Dr. E. Woakes. He referred to his own clinical experience in which he found that of all cases of middle-ear disease upwards of 50 per cent. had some evidence of disease in the ethmoidal region.

Dr. Scanes Spicer applauded the work done by Dr. Woakes and advocated the treatment of nasal conditions in cases of tinnitus and other aural symptoms.

Dr. Bronner, whilst also applauding the work done by Dr. Woakes, considered that the data could not be so fully accepted in the light of more recent work.

Dr. Watson Williams gave a demonstration, with stereoscopic lantern slides, on

*Some Points in the Anatomy and Surgical Treatment of Nasal Accessory Sinus Disease.*

He showed, amongst others, illustrations of operations on the frontal sinus as practised by Killian of Freiburg and Delsaux of Brussels, and also illustrations of a method he had himself adopted.

Dr. Milligan gave a lantern demonstration on

*The Surgical Treatment of Labyrinthine Suppuration.*

Dr. Bronner read the notes of a case of

*Thrombosis of the Lateral Sinus with Complete Obliteration of the Jugular Vein.*

Dr. Arthur Haydon (London) gave some illustrations of

*The Effects Produced by the Singing Voice in a Suitable Medium.*

The proceedings closed with a most cordial vote of thanks to the President of the section which was proposed by Mr. Cresswell Baber and seconded by Mr. Scanes Spicer and carried unanimously.

## OPHTHALMOLOGY.

### Thursday, August 1st.

Mr. F. Richardson Cross (Bristol) opened a discussion on

---

[1] Transactions of the Otological Society, June, 1905.

[2] Polypus of the Nose, by Eugene S. Yonge, M.D. This work, in which the author first published the theories advanced in the present paper, was reviewed in The Lancet, April 20th, 1907, p. 1090.

### *Iridocyclitis.*

After a critical survey of the anatomy of the ciliary region and the processes of secretion and absorption of intra-ocular fluid, Mr. Cross, in considering the various forms of iridocyclitis, said that sometimes they observed a fine haze in the anterior part of the vitreous just behind the lens, or dots or fine threads floating in it; this was, perhaps, the simplest sign of altered secretion from Collins's glands or of exudation from the ciliary vessels. Any mild catarrh or hyperæmia of the ciliary body was likely to be accompanied by slight superficial synchisis. Choroiditis was often associated with similar symptoms and should be suspected when synchisis was thick or dense, but extensive choroiditis might be present without vitreous opacities. Serous cyclitis was essentially a catarrhal inflammation of the ciliary body and gland; there was an increase in secretion of aqueous which might be fibrinous and contain leucocytes or even pigment cells. The more solid particles were deposited upon the back of the cornea and produced "keratitis punctata." When the secretion was albuminous it did not readily escape from the eye, so might distend the anterior chamber and cause glaucoma. Most of these cases subsided without permanent damage to the eye, but there was a tendency to recurrence. There was a form of iridocyclitis which was essentially chronic and often binocular. There was keratitis punctata and proliferation of the cells lining the anterior chamber. The exudate was fibrinous and might be deposited upon the surfaces of the iris, ciliary body, on the pars nonplica, and on the retina. Hypopion might be formed. The progress of the exudation depended on the continuance of the original irritation which had produced it. If this were removed the inflammation would cease and further exudation be checked. But the exudate once formed could only be absorbed very gradually and very slowly. In grosser cases the fibroblasts penetrated the exudate, developed fibrous tissue, and formed cicatricial bands or membranes. The lens might be bound down behind by these bands and in front by synechiæ. The ciliary body might be dragged from the sclerotic or the retina from its bed. The pupil might be occluded or the anterior chamber obliterated. Later complete degeneration of the globe might follow; the shrunken eyes, if they did not cause pain and were not the result of external injuries, might be left untouched. When the condition was the result of injury in unhealthy subjects the exudate might be purulent and pan-ophthalmitis might result. These cases of iridocyclitis found their typical expression in what was known as "sympathetic ophthalmia," although this particular form was for the most part subacute. The tension in iridocyclitis varied. In early stages it was frequently subnormal, later it might be raised to such an extent that secondary glaucoma might be produced. In the last stages the atrophic eye was soft. The name was legion of the causes producing iridocyclitis. In syphilis, both inherited and acquired, these lesions were common. In Germany tubercle was said to be the commonest excitant. Rheumatic micrococci had been shown by Dr. Paine and Dr. Poynton to cause it. It was seen in rheumatoid arthritis and in mild form in less definite rheumatoid and gouty conditions. It was not common in gonorrhœal rheumatism. It might form a complication of retinitis from diabetes or Bright's disease. It was common in septic absorptions from carious teeth, nasal, gastro-intestinal, or vaginal inflammations. Mumps, typhoid fever, cerebro-spinal meningitis, cardiac and vascular disease, anæmia had all been complicated by it. Thus it appeared essentially an "end" infection probably dependent on toxin absorption, yet it might be produced by exposure to cold, overwork, or even excessive light stimulus. The treatment of all general diatheses was of first importance, then the eye conditions improved. In all injuries thorough antisepsis must be insisted upon. Rest of the eye and of the patient was essential and the relief of pain; also reduction of pressure by leeches and purges, the use of dry heat or fomentations of belladonna or conium were of much service. Attempts had been made to increase the production of "auto-bodies" in the aqueous and blood serum by subconjunctival injections of 4 per cent. salt solution, of sterile air, or of sublimate or oxycyanide of mercury solutions. The use of mydriatics was essential—they relieved the engorged vessels and prevented adhesions of the pupil, and in cases of increased tension atropine reduced it. Dionine was of use in some cases. There were cases where the temporary instillation of eserine was useful for the reduction of high tension, but its continued use increased the hyperæmia. The anterior chamber might be tapped with advantage, and in obstinate cases iridectomy became necessary, particularly when many synechia formed and bombée iris threatened, but the operation must only be done when the eye was quiet.

Mr. W. T. HOLMES SPICER (London) asked what Mr. Cross intended to mean by "strumous." Did he mean tuberculous or not? He had seen one of those cases where iritis had been produced by the injection of the rheumatic coccus, but the appearance of the iris was very different to any form of rheumatic iritis they were familiar with. There were large suppurating nodules in the iris discharging pus into the anterior chamber. The condition seemed more pyæmic than rheumatic. He was not disposed to operate in acute cases. He found the coloboma generally closed again, but iridectomy in recurrent iris he found of greatest value as a preventive and curative agent. He thought eserine best avoided in all these cases.

Mr. J. HERBERT PARSONS (London) reviewed the theories of secretion from the ciliary body. Chronic and subacute irido-cyclitis were essentially toxic and the treatment necessitated the removal of the primary disorder. Intestinal disorder was perhaps the most common cause. Mr. Percy Flemming had suggested the testing of the opsonic index for bacterium coli.

Professor LANDOLT (Paris) and Mr. A. C. ROPER (Exeter) agreed that from six to 12 months of quiescence should pass before making an artificial pupil. Mr. Roper believed in the free exhibition of mercury, preferably by inunction.

Dr. J. HERN (Darlington) remarked on the unfavourable results of iridectomies in sympathetic ophthalmia.

Mr. C. DEVEREUX MARSHALL (London) agreed with Mr. Cross as to the value of atropine and if necessary paracentesis, but he thought eserine always did harm, no matter what the tension was.

Dr. REBER (Philadelphia) considered that next to treatment of the general condition iridectomy and the exhibition of dionine were of great value.

Lieutenant-Colonel H. HERBERT (I.M.S.) said that plague was a common cause of the disease in India. In most cases rapid disorganisation of the eye occurred without violent reaction. The atrophy was marked by extreme shrinkage of the cornea and perforation of the ciliary region. Mercury to the point of salivation he found of the utmost service in post-operative cyclitis.

Lieutenant-Colonel HERBERT then read a paper on

### *Clinical Observations on Spring Catarrh.*

The paper was based on observations of 39 cases seen in Bombay during two and a half years. All but seven were males and most were under 40 years of age. All races were liable to the disease. There was no seasonal variation in Bombay; perhaps most occurred in July, the wettest month. The differentiation of obscure cases from trachoma was not always easy, but the presence of follicles in the lower fornix or of lines of scar tissue was almost diagnostic of trachoma. Discharge was rare in spring catarrh, the lids must be held everted for some minutes to produce a filmy exudate on the conjunctiva, but it was always scanty. The diagnosis of spring catarrh was clinched by examining this exudate for eosinophile cells; their profusion was characteristic of the disease; he had found it constant in this but present in no other similar condition. His observation went to show that the disease was of purely local origin, although rarely he had found some nasal trouble. He had recently tried salol in almond oil in the treatment of the condition, since this drug was inert on surface mucosæ but exerted an antiseptic action when absorbed. The results were not of much value.

Mr. CROSS, Mr. PARSONS, and Dr. J. F. CARRUTHERS (Guernsey) all remarked on the rarity of the disease in practice in England. One case in from three to four years was at most their frequency.

Mr. SYDNEY STEPHENSON (London) alluded to cases in which there was a concurrent skin affection, the so-called "summer prurigo" or solar eczema. Diagnosis of the eye condition was only difficult when it was unilateral.

Lieutenant-Colonel HERBERT, in reply, thought the disease was more common than was suspected; mild cases passed unrecognised.

Mr. R. J. COULTER (Newport, Mon.) read a paper on

### *The Treatment of Alternating Squint.*

Worth held that alternating squint was either a stage in the developmental of a true monolateral squint, or an essential form where there was no refractive error or defect in visual acuity but where the fusion faculty was totally absent. In these latter neither glasses nor operation would produce a cure. Javal, on the other hand, stated that where there was time and the patient was intelligent binocular vision could be restored by operation. He had treated some nine cases where true alternating squint had appeared, and were certainly not variants of monolateral squints, by Javal's method with the best of results. In all these cases glasses had been prescribed and discarded since they did not correct the squint. Good vision was maintained, although the squint had been established in some cases from an early age until the age of 18 years. He practised advancement of the external rectus with tenotomy of the internal rectus, according to the degree of correction required. So far his results had been uniformly good. The eyes looked straight and, what was more important, they maintained concurrent visual axes, for diplopia was noticed if binocular fixation fell off. He secured binocular vision of a quality to obtain fusion of stereoscopic pictures. He thought that when alternating squints were permanent the best course was at once to correct the deformity by operation and then to proceed to show the patient by the amblyoscope or stereoscope what binocular vision was and to try to produce the irritation of diplopia, then fusion was very near. The best age for this was from 12 to 16 years; then a child was keen enough on learning to attend to stereoscopic pictures.

Dr. P. W. MAXWELL (Dublin) agreed that alternating squints yielded better results from treatment than did fixed squints. Operation was particularly indicated in alternating divergent squints.

Mr. E. E. SMITH (Hyde) and Dr. A. HILL GRIFFITH (Manchester) communicated an account of

### *A Fatal Case of Orbital Thrombosis.*

The patient was a man, aged 25 years, a roofmaker; after some exposure on a roof he felt pain in the eyes and had epistaxis. There were throbbing and swelling about the eyes and he could not sleep. On the fourth day the pain in the head was severe and the patient's manner was rambling; the left eye was prominent and the lids and conjunctiva were swollen. The man had suffered from discharge from the ear in childhood; the ear was examined and a scar of the drum was found; there were slight tenderness and œdema about the mastoid, probably caused by a mustard poultice. There was hypertrophy of the middle turbinate bone of the left side, but no discharge. The fundus of the eye was normal. The urine was normal. On the fifth day the left eye became more prominent and the right eye began to be pushed forwards, the pain and delirium increased, Cheyne-Stokes breathing and drowsiness set in, and on the seventh day the man was comatose and died in the night. A diagnosis of orbital and sinus thrombosis had been made on the protrusion of the eyeballs. This bulging subsided immediately after death. A post-mortem examination was not permitted, but in a similar case[1] diagnosis had been confirmed by the finding of a complete orbital and sinus thrombosis without other cranial lesion or middle ear disease.

Mr. PARSONS said that Mr. Percy Fleming had had several such cases at University College Hospital. There was no distension of the retinal veins, probably because the anastomosis was so complete. Usually paresis of the sixth nerve of the opposite side was the earliest indication of the spread of the thrombus.

Dr. JAMES HINSHELWOOD (Glasgow) read a paper on

### *Four Cases of Congenital Word Blindness in One Family.*

Kussmaul in 1877 described an acquired aphasia wherein there was a "complete text-blindness, although the power of sight, intellect, and speech were intact." The patient saw words but could not read them. Pringle Morgan[2] first recorded a case of the congenital form.

Dr. C. J. THOMAS of the London County Council Medical Department (Education) called attention to the fact that the condition often affected several members of a family and might be hereditary. The cases he should describe were examples of this last type. Of 11 children of one family the eighth to eleventh could not learn to read. Although they were otherwise intelligent, in some of them their capacity in arithmetic was particularly good. One at the age of 18 years had become a football enthusiast and by much exertion he had learned to recognise many of the terms used in the sport, so that he could read them at sight, although he had the greatest difficulty in recognising short monosyllabic words in a child's primer. This case showed that the difficulty in learning could be overcome by persistent and persevering attention. It also suggested that individual teaching was required.

Mr. W. T. HOLMES SPICER (London) thought that cases of word-blindness might be overlooked when associated with errors of refraction. He had recently a case of this kind under his care; there was a high degree of mixed astigmatism, but the correction of this did not improve the capacity for reading, although the intelligence of the child was good.

Mr. J. ELLIOT SQUARE (Plymouth) detailed the case of a man who could never learn to read but yet was perfect in money matters, paying bills and obtaining change with accuracy.

Mr. STEPHENSON had seen a case of four affected in one family—three girls and one boy.

Mr. CYRIL H. WALKER (Bristol) remarked that in all these cases the disability seemed to be of about the same degree. There were no slight cases.

## FRIDAY, AUGUST 2ND.

Mr. SPICER opened a discussion on

### *Vesicular Affections of the Cornea.*

He said that the corneal epithelium was soft and delicate, exposed to injury and to dryness from evaporation, received nutrition through very indirect channels, and was only loosely attached to Bowman's membrane. It retained its clearness and health to old age, probably owing to the perfection of its sensitiveness. Sensation in the cornea, unlike that in the skin, was simple only and gave a pain reaction only to all harmful stimuli. The epithelium was easily detached in one or more of its layers or as a whole from Bowman's membrane. In reptiles which cast off their epidermis periodically the epithelium of the cornea was cast off too, and the periodic detachment of the epithelium in relapsing bullous keratitis might be a tissue memory of the time when periodic shedding of the surface was normal. Casting off of the epithelium as a whole was seen in various acute diseases, in panophthalmitis, purulent conjunctivitis, keratomalacia, neuro-paralytic keratitis, and others, and also after the use of cocaine and various drugs. Local detachments were also commonly met with. Examples were given of both general and partial exfoliations. The protective mechanism acted in two ways: by the pain which interference with the surface brought and by the influence which the healthy nerve had on nutrition, or its trophic influence. In normal eyes wide differences existed in the corneal pain reflex in individuals; where ulcers were found the pain reflex was often deficient; in one eye in which an ulcer was present with defective reflex the other eye frequently had a defective pain reflex too: such eyes were especially liable to suffer from ulcers. Partial or local defects of sensation in the cornea also occurred, leading to localised epithelial diseases. In herpes zoster of the fifth nerve there was a disease of the Gasserian ganglion leading to anæsthesia of the cornea and hence to liability to injury. In some cases instead of surface affections deep or interstitial keratitis, iritis, cyclitis, and diminished tension occurred—that was, in addition to the anæsthesia, some influence of an irritative kind or a cessation of normal influences passed outwards along the nerves leading to deep changes within the eye. If this were true of the main trunk of the ophthalmic nerve it might also be true of the smaller terminal branches; an inflammation of the nerve itself might set up irritation at its periphery. Some influence of this kind was probable because of the peculiar behaviour of some nerves of this group, among which were included febrile herpes, dendritic ulcers in their various forms, and filamentary keratitis. Febrile herpes in the skin was well known; it occurred about the lips, the eyelids, and other parts of the face; sometimes in facial attacks vesicles appeared on the cornea and sometimes they affected the cornea without the face. Examples were given of these associated affections, and a case was detailed where a man suffered an attack of acute herpes consequent on a dendritic ulcer of the cornea. Filamentary keratitis was considered to be a variety of the herpetic form, the filaments being formed by the twisting into a rope of shreds of torn bullæ by the action of the lids. Dendritic ulcers were of two forms: the one starting by a broad base from the limbus and extending as a fine stem across the cornea and giving off buds on each side; the other started as a central corneal spot from which spread branches in stellate fashion. Evidence of their herpetic nature was seen, sometimes in their earliest state, more frequently in the stellate than the proper dendritic form, when the site of the future ulcer was seen to be covered with ballooned epithelium not taking a stain, and when the epithelium was shed leaving the well-known shallow groove. At the ends of the ulcer there often appeared vesicles. The treatment of dendritic ulcers and of relapsing keratitis was discussed. In the early stages loose epithelium should be removed and atropine and bandages used to rest the eye. Cauterisation by carbolic, alcohol, or perchloride solution prevented relapses; the actual cautery was less successful. Dionine in strong solutions had been recommended and proved useful in a few cases. Mr. Spicer urged the free removal of the epithelium of the site down to the basement membrane. The general health should receive attention. Superficial punctata keratitis was discussed; it was not held to belong to this group but rather the effects of an acute catarrh of the whole conjunctiva.

---

[1] A. Hill Griffith: Ophthalmic Review, vol. iii.

[2] Brit. Med. Jour., November, 1896.

Dr. J. CROPPER (Jerusalem) described a superficial spreading degenerative process in the corneal epithelium he had seen after trachoma had been treated by "brossage." Scraping the cornea or the application of antiseptics were of no avail, but the actual cautery had a useful effect.

Mr. RANSOM PICKARD (Exeter) said the recurrent bullous keratitis seen after scratches of the cornea so exactly reproduced the original lesions that the inclosure of micro-organisms was suggested. He thought the freer use of antiseptics was indicated in these injuries.

Mr. GRIFFITH asked if Mr. Spicer could throw any light on the process which produced the minute ulcers occurring in catarrhal conjunctivitis as a ring of dots near the margin of the cornea.

Mr. W. H. DE SILVA (Colombo) said he had seen atypical forms of keratitis dendritica which were of malarial origin, and which, unless the underlying condition was treated, were of a most intractable nature.

Mr. ROPER read a paper on

### *Extraction of Cataract without Iridectomy.*

He stated that it was the traditional practice at the West of England Eye Infirmary to do the simple operation (without iridectomy) and to this he in the main adhered. The late Mr. Bankart was the unswerving champion of this operation and was not shaken in his opinion by the general practice of the operation with iridectomy by distinguished operators. In explaining the papers of statistics handed round Mr. Roper said that Mr. Bankart seldom corrected the astigmatism of the peasant class treated at the Eye Infirmary, deeming it better to give them spherical correction only. He had therefore not given the minute visual statistics of his work. The records showed, however, that of 150 consecutive cases 133, or 88·66 per cent., were simple extractions, and 17, or 11·33 per cent., were done with iridectomy. Of the 133 cases of simple extraction he had only six cases of prolapse of the iris, or 4·51 per cent. Of the cases in which V. was recorded 4 per cent. had V. = 0; 1·6 per cent. had V. less than $\frac{6}{60}$; the remaining 94·4 per cent. had V. from $\frac{6}{60}$ to $\frac{6}{5}$. Mr. Bankart thought so little of prolapse that probably no notice was taken of cases in which very slight prolapse caused the adhesion of the iris to the wound, but in his (Mr. Roper's statistics) all such cases were included. Mr. Roper's cases, 152 in number, showed 11 per cent. of prolapses, including those of minutest degree. Of the ten cases which resulted in V. = 0 four suppurated, two immediately, from infection at the operation, one at the tenth day, and one at the twelfth day; both the last had blepharitis before operation. One case followed hæmorrhage from the retina at the operation and another after hæmorrhage into the vitreous during a subsequent attack of bronchitis. In the one eye lost by reason of prolapsed iris there was an escape of fluid and muddy vitreous when excising the prolapse; it was probable that vision would not have been improved by operation in any case. The remainder were cases of "forlorn hope." The percentage of cases where no record of visual acuity was made seemed large but they were nearly all cases of either illiterate people or patients who were discharged convalescent and told to return for needling or spectacles but who failed to do so. From the notes of their cases it would appear that there were no surgical failures among them. Mr. Roper advocated leaving a small ledge of cornea at the upper part of the incision as he believed it supported the iris and prevented prolapse. In treating prolapse he considered it neither necessary nor desirable always to excise it. His general plan was to excise the early prolapse, practically converting the operation into extraction with iridectomy. He was guided by the amount of irritation caused and by the state of the lower margin of the pupil as to whether he excised a prolapse of the third, fourth, or fifth day, or waited to deal later with the cicatrix; he did not attempt to excise a prolapse occurring later than the sixth day, but dissected away the cystoid scar when it had become sufficiently organised. He had seen no cases of irido-cyclitis or suppuration following prolapse of the iris.

Mr. C. DEVEREUX MARSHALL (London) said that the simple operation of extraction without iridectomy was now frequently performed at Moorfields. One or two surgeons scarcely ever did the combined operation and he often extracted through the intact pupil. He would never leave an iris that did not return to its proper position perfectly, as such usually prolapsed within a few hours or days. If the iris bulged he did an iridectomy before completing the operation, yet in spite of every care prolapse did occasionally occur. The advantage to the patient of the simple operation was the comparative freedom from the risk of the capsule being drawn up into the wound, for when an intact iris was replaced all capsular tags were set free from the wound.

Mr. HILL GRIFFITH commented on the visual acuity obtained in some of the cases. He said that he and his colleagues preferred the combined operation.

Mr. COULTER considered prolapse less likely to occur with peripheral corneal incisions than when the incision was well within the cornea.

Mr. E. BREWERTON (London) thought that Mr. Roper was hardly fair to himself in including as "prolapsed iris" cases where the iris was merely agglutinated to the back of the wound. The danger of a prolapse was in the frequent presence of capsular adhesions also. For this reason he thought that these mishaps were so frequent a source of sympathetic ophthalmia. He would like to ask Mr. Roper which operation he would choose if he had to operate for cataract on a patient who had only one eye.

Mr. J. ELLIOT SQUARE (Plymouth) thought the simple operation worth doing for cosmetic effect in some cases—e.g., a society lady with light-blue eyes would not unnaturally object to the odd effect of a large coloboma of the iris.

Mr. ROPER, replying to the discussion on his paper, emphasised the statement that during 25 years' work at the eye infirmary he had seen or heard of no case of sympathetic ophthalmia following the simple extraction with or without prolapse of the iris. As he had always had the run of the infirmary he must have heard of or seen any such case had it occurred. He had not burdened his paper with a statement of the rather obvious advantages of the simple operation. He would do an iridectomy before extraction for a person with a chronic cough or for a woman who was likely to be restless after operation, or if synechiæ were present. A post-operative iridectomy was indicated where the iris showed a strong tendency to prolapse or where it had been much bruised or its pigment stripped off in the course of the extraction. The chief criticisms of his methods had been advanced against his corneal incision as opposed to the evidently more general peripheral one and of his opinion that a prolapse need not always be excised. He could only say with regard to the latter that his experience had shown him that it was often sufficient to dissect off the cystoid cicatrix and that the eyes did perfectly well without the more dangerous procedure of opening up the wound and searching for the iris which could not always be seized. Astigmatism after operation was from 1 D. to 2 D., usually about 1·5 D., and almost invariably had an axis of 150° or 30° below the horizontal. Mr. Brewerton had asked him what he would do in the case of a person with but one eye. He had such a case four or five years ago and, with the courage of his convictions, did his usual operation. On the fourth night the patient had bad nightmare and her struggles with an imaginary foe caused a large prolapse which he excised at once. She left the infirmary with vision $\frac{6}{9}$ and was so recorded in the results before the meeting. About three weeks since she came up for new spectacles and her vision = $\frac{6}{6}$ every letter. He was certain that strain of some kind was the chief cause of prolapse.

Dr. Thomson Henderson (Nottingham) read a paper on

### *The Pathogenesis of Glaucoma and the Rationale of its Treatment.*

He believed the underlying predisposition to glaucoma existed in alteration of the pectinate ligament. Sclerosis of the fibrous tissue of the structure diminished the permeability of the channels and ultimately obstruction. The sclerosis was natural to all eyes but exaggerated in hypermetropia owing to the continued traction of the ciliary muscles. Features of importance were, the absorbent powers of the iris which was not to be looked upon merely as a light diaphragm; and the quality of the aqueous which was not a true secretion but an exudate dependent on arterial blood pressure. There was a fine balance between the production of aqueous and its absorption by the iris and escape through the pectinate ligament. Excitement increased the first; dilatation of the pupil closed the crypts of the iris and diminished the second; whilst the sclerosis of age prevented the third. When aqueous production was excessive and venous return was difficult, the iris became swollen, œdematous, and congested; and it was then that its root became applied to the pectinate ligament and glaucoma ensued. He looked upon acute glaucoma as essentially depending upon an acute iritic œdema for its determination. In chronic glaucoma he thought the iris never became adherent to the filtration angle, but that the slow increase of tension was consequent on the steadily advancing sclerosis of the pectinate ligament. Buphthalmos arose from failure of development of the pectinate ligament. Recognising the absorbent properties of the iris the value of mitotics was at once apparent, for in the contracted state the crypts of the iris were widely distended and its surface proportionately increased. The value of iridectomy arose from the peculiar nature of an iris wound after section, as he had recently pointed out no true cicatrix was ever formed, when examined years after operation the stump was as fresh as if it had been cut post mortem. Hence it followed that iridectomy opened up a permanent channel for drainage which was not influenced by the state of the pupil, and which could always be effectively produced so long as the iris tissue had not atrophied.

Mr. Parsons said there was no doubt that the pectinate ligament was thickened and compressed in glaucoma, but it was doubtful if this was not a secondary rather than a primary phenomenon. He thought perhaps too much stress was laid upon the absorptive function of the iris by Mr. Henderson.

Mr. A. F. MacCallan (chief inspector of ophthalmic hospitals in Egypt) gave an account of

### *Four Years' Work with the Ophthalmic Hospitals in Egypt.*

The work was started in 1903 by the gift of £41,000 by Sir Ernest Cassel. A scheme was recommended by the Director-General of the Department of Public Health on the lines of the "Ophthalmic Flying Columns" then existing in Russia. Mr. MacCallan took up duty in July of that year and had to organise a travelling hospital and train native doctors in ophthalmic surgery. He and his assistant made a working tour of many of the large towns of the Delta and so gained a knowledge of the conditions under which work would have to be done. The first encampment of the ophthalmic hospital consisted of ten or 12 large Indian tents at Menuf. Work began at 8 30 A.M. by visits to in-patients and operations; then came the examination of out-patients, an arduous task, as often 200 new cases came and of these 90 per cent. had trachoma and about one-third required operation. One day in each week no new cases were seen; the day was devoted to refractions, which were an increasing number. Each patient had a case-card prepared with full notes and was given a leaden disc stamped with the number of that card. A camp lasted about six months and then was removed elsewhere, not because there were no more patients to be seen in the one place but that the benefits of the hospital might be distributed. There were now two travelling hospitals at work, one in Upper Egypt and the other in Lower Egypt. There was ample work for a permanent hospital in each large town and for this provision was being made; one or more hospitals would be established each year so far as money permitted. It had been felt best to establish special hospitals and not add ophthalmic departments to general hospitals. In many general hospitals there was no room for the addition and the prospective eye patients were so numerous that they would have swamped the general patients and upset all arrangements. In one city where the travelling hospital stayed the people were so appreciative of its utility that they subscribed £5000 for the building of a permanent hospital. His staff now consisted of two English surgeons, four Egyptian surgeons, and a large staff of clerical and hospital attendants. The English surgeons' duties were to teach and to operate, they had no clerical work. The Egyptian surgeons were taken after graduation and trained for this work: their interest in the work, energy, and progress promised well; their number would be increased as hospitals were established. In all, 40,103 patients were examined at the hospitals and of these 7327 were treated either as in-patients or out-patients. 5846 operations (including the scraping trachomatous lids) were performed on 2649 patients. Cases of entropion were numerous, forming 8 per cent. There was much glaucoma, but cases were usually seen too late; in 1·7 per cent. there was absolute glaucoma. 4·9 per cent. of all people seen were blind in one or both eyes. In 1906 as many as 657 cases of cataract were seen and 225 were operated upon; a large number had severe trachoma and treatment for this was a first necessity; others had severely damaged corneæ. Mr. MacCallan gave some account of the operations which he found of greatest service, particularly in dealing with the numerous cases of entropion, and of their manner of treating trachoma. Generally, besides the direct relief of eye troubles the hospitals served a great purpose, that of teaching the fellahin the much neglected virtue of cleanliness, a point they secured by excluding all patients with dirty faces. Trachoma was rife; there were at least 6,000,000 of people infected at the present time. 51 per cent. of the pupils in the Government schools showed evidence of the disease. In 1904 he examined the boys in the school at Damietta; 56·9 per cent. showed evidence of trachoma; 9·7 per cent. had other eye affections; and 25·5 per cent. had gross corneal lesions seriously interfering with vision. It had been arranged that where permanent hospitals were established the medical officers should undertake daily inspection and treatment at the Government school; this arrangement would come into working at Tanta in October next. He hoped to be able to extend this plan to all Government schools.

Dr. Cropper congratulated Mr. MacCallan on his work; he thought that no work done by the English in Egypt was more calculated to reconcile the people to our rule than such beneficence as this.

Dr. de Silva gave an account of

### *Lepra Ophthalmica in Ceylon.*

The asylum had been in existence over 200 years and now accommodated 500 cases. Of these 101 showed signs of eye disease. There were 23 cases diagnosed as lepra tuberculosa, 33 cases of lepra anæsthetica, and 45 of mixed forms. In lepra tuberculosa episcleral growths were the commonest eye affection. The initial stage was hyperæmia, then an infiltration, and a nodule resembling a pinguecula. The growth very slowly extended to the cornea, first affecting the superficial layers, then the deeper; the iris became displaced towards the lesion. No fundus troubles were found. Vision remained surprisingly good. The average duration of lepra tuberculosa was nine years and the average age of the patients was 31 years. In lepra anæsthetica the disease progressed in a much slower fashion; the average duration was 14 years, also the average age was higher, being 42 years. Paresis of the facial nerve produced lagophthalmia, and this, if neglected, was followed by total loss of the eye. When lagophthalmia was prevented the vision remained normal, save in cases where anæsthesia of the conjunctiva and lids was observed. The mixed cases seemed most often to have begun with the anæsthetic form, and from neglect to have subsequently developed nodules. He was able to divide the group into 30 showing nodules, 15 of anæsthetic type. He concluded that lepra ophthalmica in Ceylon was most commonly observed in the nodular form. Vision remained effective for a remarkable period with severe lesions. The fundus was rarely involved. Fields of vision and colour perception were not affected. Tension was only altered secondarily. In cases where vision failed it appeared that early and judicious surgical interference would have preserved useful vision for a longer period. Lepra anæsthetica only affected the eye secondarily by fostering traumatic keratitis.

---

## PSYCHOLOGICAL MEDICINE.

### Friday, August 2nd.

Dr. J. F. Woods (London) opened the discussion on

### *Hypnotism*

in a paper in which he stated that his experience of hypnotism as a therapeutic agent in cases of insanity dated from 1892, when he was acting as medical superintendent at Hoxton Asylum. He had now treated 2076 cases in all, of which number he had classified 881 as mental cases, including neurasthenia, hysteria, bad temper, &c., most of which were borderland cases, in which this form of treatment was most efficacious. His figures were as follows :—

*Mental and Borderland Cases.*

| — | Number of cases treated. | Recovered. | Improved. | No apparent change. |
|---|---|---|---|---|
| Neurasthenia or borderland cases | 666 | 597 | 41 | 28 |
| Melancholia ... ... | 118 | 80 | 19 | 19 |
| Delusions ... ... | 2 | 2 | — | — |
| Mania ... ... ... | 44 | 20 | 16 | 8 |
| Night terrors ... ... | 6 | 5 | 1 | — |
| Stage fright ... ... | 28 | 23 | 5 | — |
| Phobias ... ... ... | 5 | 4 | 1 | — |
| Delirium tremens | 1 | 1 | — | — |
| Hysteria ... ... ... | 7 | 5 | 1 | 1 |
| Obsession ... ... ... | 2 | 2 | — | — |
| Bad temper ... ... | 2 | 2 | — | — |
| Totals ... ... | 881 | 741 | 84 | 56 |

He illustrated his paper with notes on three cases of melancholia and one case of puerperal mania that recovered under the influence of hypnotic treatment. He mentioned the different methods used in the operation for inducing hypnosis, having the primary object of engaging the attention and fatiguing the visual apparatus. Of late years most physicians had found that it was not always necessary to induce complete hypnosis to render suggestion effective. A great many of his patients were susceptible to suggestion if he merely sat by them and obtained their attention. It was a common practice with him to place one hand on the patient's epigastrium while gently stroking with the other the patient's head and then engaging him in conversation with the object of securing his full confidence. He then got the patient to relax his muscles to the utmost. He insisted on complete silence and the suggestion was made at the psychological moment. There must be no kind of uncertainty about the manner of making the suggestion, it must be forcible and emphatic. He probably never treated two patients exactly alike, but he felt the procedure was an instinctive one. He stated that he could not tell at once whether a patient was susceptible or not and that many responded after repeated trials. Dr. Woods then gave a detailed list of all the cases treated, non-mental as well as mental, the list including, amongst others, epilepsy (12 recoveries and 22 improved out of a total number of 50), hay fever (five cases, all recovered), writers' cramp (ten cases, six recoveries), headache (214 cases, 186 recoveries), dyspepsia (65 cases, 59 recoveries), and neuritis (41 cases, 27 recoveries).

The President of the section (Dr. T. Claye Shaw of London) who followed reminded those present that not long ago hypnotism was very largely under suspicion but that nowadays it was becoming a recognised method of treatment and that in the light of results obtained by responsible physicians like Dr. Wood, who stated that cases of epilepsy had recovered under hypnotic treatment, it appeared certain that some persons suffering from diseases which involved organic bodily changes recovered under the treatment.

Dr. E. S. Pasmore (Croydon), Dr. A. T. Schofield (London), and Dr. W. F. Menzies (Cheddleton) having questioned the author as to the nature of the cases and the duration of the "cures,'

Dr. D. Yellowlees (Glasgow) expressed his doubt on both these points with regard to Dr. Wood's results. He believed, however, that hypnotism was valuable at times in relieving pain, even in cases of organic disease, and instanced in this relation some cases of locomotor ataxia in which he had found hypnotic suggestion alleviate the more painful symptoms.

Dr. G. M. Robertson (Larbert) gave the results of his 20 years' experience of hypnotism, an experience which had resulted in a gradual cooling of his original enthusiasm for the treatment. The favourable results of treatment bore, of course, only on the mental side of the subjects, such mental affections being present both in functional and organic disorders, and were in his experience not lasting. He had found it very difficult to induce hypnosis in insane people and particularly in melancholics.

The discussion was closed by the President of the section who stated that he could not but come to the conclusion that states of mind had an enormous influence on states of the body.

Dr. Schofield contributed a paper upon

*The Teaching of Psychology in Medical Schools,*

in the course of which he animadverted upon the "extraordinary fact" that the subject of psychology—using the term in its broad sense of the study of mind, normal and abnormal—had in England "hardly a teacher, a student, or a text-book," and pleaded for the curtailment of the ordinary medical curriculum in certain directions—e.g., in materia medica, minute anatomy, and so on—in order to make room for the study of weightier matters concerned more nearly with life and death, health and disease, such study to include "normal psychology, surgical psychology, the psychology of etiology, psycho-therapeutics, the psychology of drugs, applied mental therapeutics, the psychology of the patient (body, soul, and spirit), and the psychology of the physician himself."

Dr. Schofield's paper did not evoke discussion, but Dr. F. W. Edridge-Green (Hendon) and the President of the section both agreed that it would be well if more attention were given to general psychology as a necessary preliminary to medical psychology.

Dr. Pasmore (medical superintendent of Croydon Mental Hospital) exhibited and explained his "flag diagram" for recording the family histories of patients.

The meetings of the section then closed.

## DENTAL SURGERY.

### Friday, August 2nd.

Mr. F. J. Bennett (London) read a paper entitled

*"Some Anatomical Results of Efficient Mastication."*

He said that as the signs of attrition had become less in advancing civilisation so defects of the jaws and teeth appeared to have increased. One of the most common results of efficient mastication was a well-shaped and large arch of the jaw. The cause of the attrition often observed in old skulls was apparently related to the oblique manner in which the lower teeth were erupted ; this resulted in unequal wear of the inner and outer cusps of the molars, the obliquity and the wearing of the internal cusps assisting in spreading the teeth outwards, and enlarging the dental arch ; not only this but the incisors tended gradually to come edge to edge. Attrition was apparently too late a development in the human subject to allow of it being fully fixed to have become inherited. In many cases, however, a modification of the shape of the teeth had occurred, the teeth had become broader and flatter and the fissures less well marked. When the teeth subjected to attrition, due solely to vigorous muscular action, were compared with the teeth of the present day showing every mark of deterioration the question of the possibility of improvement of the jaw muscles by appropriate exercises at once suggested itself. Mr. Bennett then went on to describe a curious parasitic group which he had found attacking the teeth in certain skulls which had been dug up in Ireland. The growth, a species of mycelium, had grown down throughout the denture of the teeth in question, apparently being a purely post-mortem phenomenon. Slides were shown exhibiting the appearances found.

Mr. J. F. Colyer (London), Mr. K. W. Goadby (London), and Mr. J. G. Turner (London) discussed the paper, and Mr. Bennett replied briefly.

Mr. Colyer read a paper on

*Irregularities of the Teeth in Animals.*

He said that no work of the dental practitioner required more thought and reflection than the treatment of irregularities and it was only somewhat recently that attention had been directed to the origin and etiology of the various irregularities often empirically treated. He had recently directed his attention to the irregularities of animals' teeth with a view to throwing some light on the etiology of the human types of malposition, &c., and although little had been accomplished as yet, sufficient knowledge had been gained to show that the irregularities of teeth in animals probably fell into several well-defined groups. Among these groups Mr. Colyer described instances in animals of irregularities due to persistence of deciduous teeth commonest in the Ungulata, and in the maxillæ more frequently than the mandible. Crowded teeth, also associated with the persistence of deciduous teeth, or the presence of supernumerary teeth were not uncommon in the small carnivora and in the Equidæ. Crowding was also seen at times in the incisor region among monkeys. In the Equidæ crowding of the incisors, especially in the mandible, less commonly in the maxilla, was often present without the presence of supernumerary or retained deciduous teeth. In one instance the deformity was apparently due to a distinct narrowing of the mandible in the incisor region. Crowding of the premolars was occasionally seen in the carnivora, especially the Canidæ; a specimen of a brown bear (ursus arctos) showing well-marked crowding was exhibited. Mr. Colyer pointed out that the teeth did not vary in size proportionately to the variation in the length of the muzzle, the short muzzled bears more often showing crowding than long muzzled ones. Crowding in the premolar region was uncommon in the Ungulata and in 500 specimens only two examples were met with. Want of space in the premolar region was not so uncommon but the teeth underwent a certain amount of compensatory absorption of the cemental tissue of the crowns allowing the teeth to retain their natural position. Undue prominence of the superior teeth.—A condition similar to superior protrusion of the human subject was not uncommon in horses and was known as "parrot mouth." The etiology of this question required study, especially in relation to breed. The condition was not common in other animals; an example of "parrot mouth" in a fox was shown. Complete displacement of teeth.—Premolar displacement appeared to be a well defined irregularity in the animal kingdom. Examples of this deformity were shown in a wallaby (macropus mesteisis), a monkey (cercopithecus patas), a baboon (cynocephalus babuin), and a case of complete displacement of an incisor in cercopithecus mona and in a bear. The effect of rickets upon the position of the teeth was also touched upon. It was, Mr. Colyer said, well shown in lions and tigers. The incisors, especially the outermost ones, were generally considerably misplaced and the fourth premolar was forced outwards. A thickening of the tooth sacs described by Mr. Bland-Sutton might be the cause of this.

The President of the section (Mr. J. McKno Ackland) thanked Mr. Colyer for his interesting paper and asked what percentage of animals in various classes showed irregularities, as it was possible only the pathological specimens coming to light gave a distorted idea of the occurrence of irregularities.

Mr. Bennett, Mr. A. W. Baker (Dublin), Mr. J. H. Gibbs (Edinburgh), and Mr. Turner discussed the paper.

Mr. Colyer, in his reply, made an appeal to the veterinary surgeons to inquire into the irregularities of the teeth of animals, as a large amount of valuable information on irregularities probably affecting the deformities of human jaws might thereby be determined.

In the absence of Mr. H. A. T. Fairbank (London) one of the honorary secretaries read his paper on

### *Sarcomata of the Jaws.*

For the purposes of this paper Mr. Fairbank had collected 140 cases of sarcoma of the jaws, no case being included in the series which had not been determined microscopically to belong to the sarcomata. Of the 140 cases, 81 were females and 50 males; in the remainder the sex was not stated. Sarcomata most frequently attacked the jaws before the twentieth year of age, but also occurred at all ages, fibro-sarcomata occurring at somewhat later ages than the others, endotheliomata and "sarcomatous composite embryoplastic odontonus" (Eve) occurred still later. In three cases of endothelioma the ages were 45, 52, and 62 years. Of all the varieties of sarcoma in the series the youngest case, occurring at one month, was melanotic sarcoma, the oldest case, one of myeloma, was 72 years of age. 41 per cent. were under 20 years of age. Many of the tumours had started in close relation to teeth, but only in 10 out of the 140 was any mention made of previous pyorrhœa or caries. In the series of cases under discussion the varieties were as follows: myeloid, 57 cases; round-celled, 17; spindle-celled, 14; fibro, 14; mixed celled, 12; embryoplastic odontonus, 8; endothelioma, 6; melanotic, 4; chondro, 4; myxo, 2; and alveolar, 2. In five cases, all myelomata, two distinct tumours were present. In three cases a benign tumour had been previously removed from other parts of the mouth. There was no difference in the incidence on the two jaws; in the mandible the left side was twice as often affected as the right. In cases over 40 years of age the upper jaw was twice as often affected as the lower. Myeloid tumours grew more like a cyst or innocent tumour, they rarely appeared to fungate through the periosteum to the outer side of the jaw. They might cause the antrum to bulge without invading its walls and might be shelled out of this cavity. Periosteal tumours spread with equal rapidity in all directions over the surface of the bone and extended down the sockets of the teeth. They also invaded the muscles, especially their bony insertions. The inferior dental canal was also a channel along which the growth often spread. The myelomata were the least malignant, the round or spindle-celled were the most malignant, and those tending to fibrosis held an intermediate position; the last-named often, however, take on rapid growth, especially after surgical interference or tooth extraction. Glandular infection was rare. Although enlarged glands in the vicinity, especially when the maxilla was the seat of the growth, were quite common, yet they never showed secondary deposits. Before operation the variety of growth should be determined, as myeloma rarely called for wide removal or excision of the whole or greater part of the jaw upon which it was growing. It was not advisable to make an exploratory incision. With the exception of myeloid growths the results of operation for the complete removal of those tumours was far from good.

In the absence of the reader of the paper no discussion took place.

Mr. Bennett proposed a cordial vote of thanks to the President of the section, which was seconded by Mr. Colyer, and the proceedings then terminated.

## TROPICAL DISEASES.

### Thursday, August 1st.

Sir Richard Havelock Charles, K.C.V.O., M.D. R.U.I., I.M.S. (retired), opened the discussion on

### *Diabetes in the Tropics*

by a paper in which he stated that, although diabetes in the tropics differed in no essential degree from that met with in Western Europe, there were many points of interest in connexion with locality, diet, race, and customs which rendered a discussion of the subject useful and instructive. During recent years there had been a marked increase of the prevalence of diabetes among the Hindu race. Dyspepsia was an early and constant feature of diabetes in India; so much was this the case that it might be summed up by saying there was no diabetes without indigestion—its forerunner. In Bengal it was the indolent and rich and the overworked medical and legal practitioners amongst whom the disease was found. All of these, although from different reasons, were liable to suffer from digestive disturbances. The *remote* causes of diabetes in Bengal might be attributed to the depressing climate, defective hygienic conditions, the strenuous life of cities, the severe struggle for life in altered circumstances, rich living, and too great excess of carbohydrates in the food. Amongst the more *immediate* causes excess of venery held an important place, and mental or nervous strain, fright or bereavements, in fact, any state in which the nervous system was overtaxed, be it in the pursuit of knowledge, business, or pleasure, might prove the direct incentive to the onset of the disease. A toxic agent or other determining cause might supervene on the condition of body set up by these taxes on strength and provoke the disease. There was evidence to show that no fewer than 10 per cent. of Bengalis of the better classes suffered from diabetes. Sir Havelock Charles dealt with the life insurance of diabetics and said that sugar in the urine should always be considered a great, if not an insurmountable, detriment to the acceptance of a life for insurance. Carbuncle, gangrene, and cellulitis were the commonest complications of diabetes in India, and he recommended early excision of the carbuncle, or, if that was impossible, serum injection and palliative local treatment; strong antiseptic measures were to be condemned. In regard to gangrene it was unwise to wait for the line of demarcation, especially if arterio-sclerosis was marked; the amputation should be performed above the origin of all the muscles inserted into the gangrenous part.

Dr. R. K. CHUNDER BOSE, Bahadur, C.I.E. (Calcutta), in his paper on

*Diabetes Mellitus,*

stated that with increased prosperity in Bengal diabetes had increased of late years. As much as about 10 per cent. of Bengali gentlemen suffered from it. He considered the liver, the gastro-intestinal tract, and the nervous centres were at fault when this disease occurred. The Hindus were more susceptible to diabetes than were Mahomedans or Christians in Bengal. There seemed some evidence that diabetes was hereditary and husband and wife were at times found afflicted with the disease. Amongst the symptoms and signs enumerated the exaggeration and the absence of knee-jerk had both been noticed. Males were more susceptible to the disease than females in the proportion of about 3 to 1. The specific gravity of urine containing sugar might be very high or very low. A low specific gravity did not necessarily mean arrest of the disease and in chronic cases the sudden disappearance of sugar bespoke approaching serious complications. Dyspepsia and diabetes seemed intimately linked together. Dr. Bose observed that whooping cough was sometimes associated with diabetes. Angina pectoris was by no means a rare complication of diabetes in India. Influenza was a serious complication in diabetes. Lesions of the skin, eye, and the peripheral nerves, dry gangrene, headache, and carbuncle were all liable to occur in India as in Europe. Of remedies jambul was stated to reduce the specific gravity and the quantity of sugar, but its prolonged use was followed by anorexia and gastric troubles.

Dr. R. DEVENDRANATH ROY, Bahadur (Calcutta) stated in his paper on

*Diabetes in India*

that the number of people belonging to the professions of law and medicine and in persons engaged in clerical work diabetes had undoubtedly increased to a great extent in late years. He gave an interesting account of what the ancient Hindu physicians said about the disease, and although there was nothing of pathological interest in the records of their observations it was amazing to find how accurate were their clinical accounts of the disease. They distinguished between pramcha or madha-meha (sweet discharge) and soma-roga or diabetes insipidus (water disease). The causes these ancient physicians regarded as provocative of diabetes were sexual excesses, grief, hard manual labour, mental worry, lassitude, indiscretion in diet, and dyspepsia. The complications they mentioned were inflammations of various kinds, skin eruptions, furuncular eruptions with formations of pus. The diet recommended by these old observers consisted of the following articles: new rice, curd, flesh of animals living in swamps, fish, wines, vinegar, oils, onions, barley, flour of old wheat, dâl of several kinds, sesamum seeds, meat juice, old honey, whey, sparrows, pigeons, rabbits, snipe, peacock, and venison. Restriction was placed upon drinking milk and eating fish and meat at the same meal, sugar-cane and its preparations, excess of acid and salt. Jambul, seeds and roots of lotus, dates, bitters, and astringents were the therapeutical agents employed in the treatment of diabetes. Dr. Roy stated that the specific gravity of the urine of the Bengalis was lower than that of Europeans living alongside of them. He laid stress upon the general prevalence of dyspepsia amongst diabetics.

Dr. SATYASARAH CHAKRAVARTI (Calcutta) contributed a paper entitled

"*Notes on Diabetes Mellitus.*"

He stated that diabetes was essentially a disease of town life and was rarely met with in villages. In Calcutta the total mortality from diabetes and its complications was declared to be about 10 per cent. of the total mortality. The liability to the disease seemed to be increasing amongst Bengalis in Calcutta of late years, and especially amongst the educated Bengalis. He believed the relative immunity enjoyed by the working classes as compared with persons higher in the social scale was due to their freedom from the nervous strain inseparable from the anxieties attendant upon persons pursuing intellectual occupations in large towns. These inevitable worries affected the digestive powers as well as the assimilation of food and so predisposed to diabetes. Hindus were more often attacked than were Mahomedans, and of the Hindus those who took a mixed diet and were given to the use of alcohol were more liable to diabetes than were vegetarians like the Jains and Marwaris. The Jews were subject to the disease to a larger extent than were Europeans. This difference of incidence, however, seemed to vanish in the army where both the European and native troops lived under more nearly similar conditions. During 1905, for instance, there were only eight cases amongst 71,000 British troops and 23 cases only amongst 198,000 men of the native army. As regards heredity diabetes insipidus seemed more likely to be handed down than diabetes mellitus.

Dr. C. L. BOSE (Bengal) sent a paper entitled

"*Some Observations on Diabetes in India.*"

These observations were based upon 325 cases of diabetes. The average age of patients was between 40 and 50 years; the youngest patient was 18 years of age, although a child aged six years had been found by a medical friend to be suffering from diabetes. Men suffered more frequently than did women, and amongst women, as amongst men, those belonging to the higher ranks of society suffered most. Diabetes was essentially a disease of those engaged in sedentary occupations. The disease sometimes ran in families and continued from one generation to another. The incidence according to race Dr. Bose found to be as follows: Hindus, 76·92 per cent.; Mahomedans, 8·0; Europeans, 5·54; Jews and Armenians, 4·0; Eurasians, 2·47; Jains, 2·15; native Christians, 0·62; and Parsis, 0·30 per cent. The possibility of diabetes being contagious must not be lost sight of. Of the 325 cases oxalate of lime was detected in 26·50 per cent., and uric acid diathesis occurred in 14·70 per cent. Albuminuria, pulmonary tuberculosis, carbuncle, cellulitis, gangrene, and cataract were the more common complications observed by Dr. Bose.

Dr. F. M. SANDWITH (London), from experience gained in Egypt, stated that diabetes was one of the common diseases met with amongst Egyptians. Their diet consisted chiefly of bread and vegetables, whilst sugar was consumed freely. The necropsies of cases met with in Egypt showed neither atrophy nor fibrosis of the pancreas. Dr. Sandwith inoculated four diabetic patients suffering from tuberculous lung trouble, but in no case did reaction to injection of Koch's tuberculin occur. He considered it inadvisable to allow diabetic patients to take long journeys. He had seen three visitors who had been recommended to winter in Egypt die within a few days of their arrival in that country. Treatment should consist of first lessening the quantity of sugar in the urine by strict diet and then opium, 1 grain thrice daily. Aspirin in from 5 to 15 grains thrice daily was efficient in diabetes provided there was no gastric or kidney disturbance. The Egyptians used a pill of ox-gall and the seeds of Trigonella fœnum græcum—the "helba" of Egypt. Dr. Sandwith tried this treatment but did not find it beneficial.

Lieutenant-Colonel G. M. J. GILES, I.M.S. (retired), whose experience of diabetes was gathered chiefly in the North-west Provinces of India, stated that the disease was not more common in that locality than in Europe and that the frequency of cases of diabetes amongst Bengalis in the North-west Provinces was in excess of other residents there. Lieutenant-Colonel Giles pointed out that in reference to the cause there was one point in which the Bengali differed from all other civilised tropical inhabitants, inasmuch as he was the only man who went about in a tropical sun with a closely cropped bare head, added to which his complexion was not dark enough to do so with impunity.

Dr. H. MARCUS FERNANDO (Ceylon) stated that diabetes was very common amongst the educated classes of natives in Ceylon and was a disease due not to climatic or to racial conditions but to conditions of diet and habits of life. Europeans in Ceylon were no more prone to the disease than in Britain, whereas amongst the natives, professional men, and merchants, diabetes was quite common. In Ceylon the disease prevailed more amongst the Hindus than amongst Mahomedans and Singhalese, the last mentioned being the least affected. The causes assignable were (1) carbohydrate diet; (2) sedentary life; and (3) continuous application to work and no holidays. The disease seemed to be hereditary, to effect the overfed and obese, and to run in Ceylon the same course as they observed in Europe. Dyspepsia did not seem an early feature of the disease nor did the exposure of the head to the sun seem to play a prominent part in the etiology of the disease, for the Tamils went about with their heads bare, yet diabetes amongst them was very rare.

Mr. W. H. DE SILVA (Ceylon) said that ocular symptoms in diabetes in Ceylon corresponded closely with those met with in Europe. Diabetics were undoubtedly more prone to cataract, yet when the patient improved under treatment extraction might be successfully performed. It was very difficult to diet people suffering from diabetes for whom the staple food was rice, and it would be worth closer investigation to ascertain whether any of the cereals recommended by the earlier Indian medical writers, such as charaka, would prove a useful substitute for rice as a diabetic diet.

Major A. H. NOTT, I.M.S., from experience gained in Bengal stated that the influence of dyspepsia in the causation of diabetes was a very doubtful point. Carbuncle, gangrene, and coma were common features of the disease in Bengal. Owing to the frequency of diabetes in Bengal the question of life insurance came frequently before medical men in practice there. Major Nott considered that with established diabetes, however well the man might appear otherwise, it was the duty of the medical man to refuse the candidate for life insurance.

Sir PATRICK MANSON said that in China diabetes was rare, although the Chinese were rice-eaters and were frequently overfed and overworked, and therefore subject to most of the conditions which had been stated to be provocative of the disease. The endemicity of diabetes in Bengal was interesting. It might be, however, that diabetes, which had been for so long attributed to food, exposure, nervous influences, heredity, and so forth, might, like other ailments with similar history, come to be proved to be due to a specific organism. Leprosy, tuberculosis, sleeping sickness, and several other diseases which occurred to one, had each in turn been ascribed to general causes, whereas they now knew that a specific organism was found to be the etiological agent in each. The diabetes of Bengal would seem also to be probably one of the germ diseases.

Dr. LOUIS W. SAMBON (London) stated that diabetes was common in Southern Europe. Glycosuria was a disease not only of man but of animals. The resemblance of diabetes to other ailments, in its clinical history and its geographical distribution, which had been shown to be due to infection by an organism, indicated a similar etiology for diabetes.

Professor HANS ZIEMANN (Cameroons) stated that the negroes of Lower Guinea very rarely suffered from diabetes, although their food consisted mainly of vegetables and bananas. Rice was seldom eaten in Lower Guinea. Exposure of the head to the sun did not seem to influence the onset of the disease in West Africa.

Major G. T. BIRDWOOD, I.M.S., mentioned that the fact of husband and wife developing the disease was a possible point in support of the germ theory of the causation of diabetes. Diabetics ought not to be accepted for life assurance policies. Carbuncles in diabetes ought to be widely and deeply excised and pure carbolic acid applied to the wound.

Mr. J. M. MALLICK (Calcutta) gave an account of his experiences of diabetes from a clinical aspect. He stated that urea eliminated by natives of India was much less in quantity than in Europeans in Europe, the difference approximating to half the quantity only. The cause was no doubt due to their food being poorer in nitrogenous material and to their deficient musculature as well as to the comparatively less active life. Muscular exercise taken regularly and continuously had a highly beneficial effect on diabetics, showing that diabetes was as much of a glycolytic as a glycogenic origin.

Mr. J. B. CHRISTOPHERSON (Sudan) said that glycosuria in the Egyptian Sudan was very rare. During a five years' experience he had only seen the disease once in an Arab. He could not believe that exposure to the sun could influence the disease as the Sudanese negroes went almost with shaved and unprotected heads.

Dr. P. J. CAMMIDGE (London) referred to the relation of the pancreas to diabetes; it seemed highly probable that the islands of Langerhans were in some way intimately associated with sugar metabolism. The lesion of this part of the pancreas might arise either by extension from the duodenum or by way of the blood-vessels. Arterio-sclerosis was a frequent concomitant of diabetes, and no doubt this condition was responsible for the albuminuria which occurred in the later stages of some diabetics.

Dr. W. CARNEGIE BROWN (London) said from experience gained in the Straits Settlements diabetes was prevalent amongst the wealthier sections of the native community, especially amongst those who were engaged in occupations involving much mental activity. He had not seen diabetes amongst Chinese coolies but frequently amongst the better off Chinamen. He recommended early and complete excision of the carbuncle which was so frequent an accompaniment of diabetes. In Dr. Carnegie Brown's opinion diabetes would seem to be an endogenous disorder of metabolism. Pancreatic remedies for diabetes, although to a certain extent haphazard, had proved wonderfully successful, both pancreatic substance and trypsin being valuable.

Mr. JAMES CANTLIE (the President of the section) said that diabetes was very common amongst Chinese who had taken to European food and wines; Jews he had found to be frequent sufferers from diabetes. There seemed sufficient evidence now to prove that any race of people unaccustomed to the food of western Europe who suddenly changed their diet or added to their diet meat, sugar, and wines were liable to develop diabetes. He had found sugar present in the urine in so many cases of fractured ribs on the lower part of the right chest wall that he was induced to attribute the condition to suspension of the natural movements of the ribs and diaphragm on that side causing abeyance of the hepatic functions.

Sir HAVELOCK CHARLES, in reply to the criticisms of the various speakers, stated that he agreed with the late Colonel Crombie in the belief that diabetes was the gout of the Bengali.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, August 22nd, 1829

### ADULTERATION OF BREAD.

WE have received several letters on this subject, but want of room renders it impossible for us to insert a tenth of them One correspondent proposes, as the best means of checking the use of alum in the manufacture of bread, that government should impose a heavy duty on that article. He hands us the following as the "formula of the London bakers:"—Flour, 375 lbs.; potatos, 15 lbs.; salt, 4 lbs.; alum, 1 lb.; according to which, every quartern loaf contains a drachm of alum; thus, at the rate of one pound of bread a day, each consumer swallows 105 grains of alum a week. "This," he adds, "is no other than poisoning by slow degrees, and though the symptoms, languor, headache, constipation, &c., may not be noticed after a certain time, it undoubtedly lays the foundation for constitutional disease in thousands."

Another correspondent considers the baker to be less blameable than the public, whose foolish taste it is to prefer "the bread that is *whitest*." "It is a very common thing," observes Philo-panis, "for both mistresses and maids to exclaim, 'Lord, baker, how brown your bread is to-day!' The latter, accordingly, puts alum into his loaves, as apothecaries put colouring matter into saline draughts, and lump sugar into powders, to humour the palates of a *discerning* public. I can assure 'Panis,' (he adds) that if home-made bread would satisfy the people, the baker would most gladly produce it; it would release him from the never-ceasing anxiety that he now feels for the 'beauty' of his bread, as well as from much of the demoralising night-work occasioned by the present system of bread-making. To please his customers, it is not enough that the bread be sweet, light, well-baked, and substantial, it must be white, flaky, and silky in the crumb, qualities alone resulting from art and labour during a process of sixteen hours. Spoiled, however, as the bakers are by this white-bread craving of the public, there is much bread sold in London that has not a particle of alum in it; but then the price is high, for it is made of the best flour. Most people choose a *cheap* loaf; the cheap loaf is of course made of cheap flour, which, to produce a white and firm loaf, must have a large dose of alum mixed with it." After condemning as very irrational the unqualified terms in which the London bread is deprecated, he concludes, by observing, that "alum is sometimes of great benefit in the preparation of bread, and laws to prevent its use would be about as wise as—'Whereas divers men and women become beasts by drinking excessively of wine, porter, and spirits, and bring themselves prematurely to the grave, it is therefore enacted, that no person or persons shall ferment, or distil, or make any of the said deleterious or unwholesome articles, under a penalty of so and so.'"

# THE LANCET.

*LONDON: SATURDAY, AUGUST 24, 1907.*

## The Plague in India: The King's Message.

No people in the world are moved more readily by kindly feelings displayed towards them than are the people of India. It is because of this that we venture to say that the message concerning plague which His Majesty the King-Emperor has recently addressed through his Viceroy to his Indian subjects will not only be received with profound satisfaction and gratitude throughout our Eastern Empire but will also exercise a potent influence on the success of future preventive measures. King Edward expresses his heartfelt sympathy with the people of India in their sufferings, and he makes known the deep emotion he feels when thinking of the misery that has been borne with such silent patience in all those stricken homes. He adds that it is his earnest hope and prayer that the further measures now being prepared may be crowned with merciful success. The message will bring fresh hope and courage to those who have suffered so long, and who may be excused if they have now fallen into a state of despair; it will encourage all those who, with inadequate means at their disposal, have nobly striven to do their best to combat this scourge; it will be an impetus to further exertions; and it will arouse the Government of India to a quickened sense of responsibility and of the importance and urgency of doing everything in their power to check the ravages of plague.

That such a stimulus may be needed is evident from the fact that it has taken two years for the Government of India to consider the proposals put forward in the Memorandum on Plague which was presented by the Royal College of Physicians of London to Mr. Brodrick at a deputation received on July 24th, 1905—since which time 1,500,000 people at least have died from plague in India. Almost coincident with the publication of the King's letter in the daily press the official correspondence regarding the measures being taken in India for the prevention of the plague was presented to both Houses of Parliament, the correspondence having its origin in the Memorandum of the Royal College of Physicians of London. It may be remembered that the scheme formulated by a committee of the College provided for a special medical and sanitary organisation which should deal with plague in selected localities. The staff of this service, it was suggested, should consist of officers of the Indian Medical Service and physicians brought out from England, having under their control male and female native medical assistants—the subordinate staff to be gradually increased in numbers and trained to greater responsibilities. The whole service, it was proposed, should work under the direction of a special head-quarters department and be divided into three sections: (1) an intelligence branch; (2) a sanitary branch working at practical measures on the scene of an outbreak; and (3) a bacteriological branch. The scheme was submitted by Mr. Brodrick on August 18th, 1905, to the Government of India and the views of that Government were invited. These views have now crystallised in the form of a Blue-book which contains some apology for the extraordinary delay in procedure. The memorandum of the College was received, the Government says, at a critical time in the history of plague administration when all suggestions were most welcome, but, unfortunately, it did not appear to contain anything with which the Government was unacquainted, while it revealed a lack of knowledge on the part of the signatories in respect of plague administration in India. With regard to the innovations in administration suggested by the memorandum, replies were deferred until the views of the various local administrations of India could be obtained. Accordingly the local governments were consulted in May, 1906, and the letter covering their replies, and forwarding them for Mr. Morley's information, is dated May, 1907, although most of the local governments appear to have been prompt in their replies. The net result of the local views is that suitable organisations for coping with the epidemic of plague in India already exist, although the executive may call for strengthening, while the general sanitary service needs development. The Government of India, informed by the opinions of the local governments, accordingly decides that in measures for the prevention of plague trust must be placed, *at any rate for the present*, upon improved sanitation in towns and upon the coöperation of the people in such measures as the evacuation of villages and the destruction of rats. The Government of India sees no virtue in the memorandum of the Royal College of Physicians of London.

To the Government of India Mr. Morley has made a significant reply, for while recognising the admission that the general sanitary service of India needs development, he asks for the specific proposals of the Government in this direction, noting that the measures now relied upon are avowedly only temporary. He recalls the fact that plague has been fatally active in India over 11 years, pointing out "that the number of victims exceed five and a quarter millions, that its virulence is unabated and its progress uncontrolled," circumstances which he considers "necessarily give rise to doubts as to whether everything that can be done has been done by the responsible authority, and whether the last word of medical science and administrative skill has really been said." The importance of the attitude of the Government of India to the people in regard to preventive measures has not escaped the attention of Mr. Morley and we are glad to see him so decided on what that attitude should be. The view that preventive measures depend for their success upon the coöperation of the people is interpreted by Mr. Morley in a very different manner from that which has governed action in India. It is accepted by him as merely defining the conditions of success and not as a reason for abdicating responsibility. Popular sentiment does not remove the obligations which still rest on the Government to endeavour to improve the quality of hygienic measures and to win acceptance for them by skilled and considerate administration. This pronouncement is a most important one, for it strikes at the root of a policy which has been pursued too long in India and which has only been followed by disaster—viz., the relaxation of effort because the people do not heartily coöperate. It is a policy that is evidently difficult to get rid of, but it embodies a most mischievous and useless principle. In no country in the world could a people work out by themselves a successful campaign against plague, or against any other epidemic; the governing class must steer in such storms.

## The Prevention of Ophthalmia Neonatorum.

It is several years now since Hermann Cohn stated that "ophthalmia neonatorum can and ought to be made to disappear from every civilised country," yet all practitioners of experience are still only too familiar with the condition. As will be seen from our report of the Ophthalmic Section at the recent meeting of the British Medical Association at Exeter, nearly half (42·36 per cent.) of the inmates of the Sheffield School for the Blind are there on account of this disease. In 1888 the percentage for the same school as given by the same skilled observer, Mr. Simeon Snell, was 39·7. It would seem therefore that the last decade has not been noteworthy for any diminution of the ravages of the disease. Yet we cannot conclude that Cohn's aphorism is incorrect. It is admitted on all hands that ophthalmia neonatorum is a preventable disease: there is indeed scarcely a record of statistics in which this point is not emphasised. It is true that there has been an enormous improvement since 1881, when Credé advocated his method of prophylaxis as a routine measure at all births, but none the less this grave scourge chastises our infant population.

No better survey of what has been done in the past and of what remains to be done in the future is afforded than that contained in Mr. Sydney Stephenson's recent work on "Ophthalmia Neonatorum,"[1] which has been awarded the Middlemore Prize of the British Medical Association for 1907. All the available statistics have been collected and collated with admirable care. Lacking as such records so often are in the accuracy and minuteness of detail which are so much to be desired, two facts stand out clearly—viz., that the disease is still prevalent and that all is not being done that should be done in order to eliminate it. Mr. Stephenson has devoted much attention to the etiology of the disease, the only sure foundation of rational prophylactic measures. That something like one-third of the cases are due to organisms other than the gonococcus is important, since it may be utilised to minimise some of the sentimental objections to routine treatment in patients of all classes. Amongst the many weighty points brought into prominence in this excellent monograph is the fact that the gonococcal form often occurs when gonorrhœa is latent in the mother, who may indeed have been infected by gonorrhœa which was latent in the father. The evidence tends to show that infection of the baby's eyes with the causal organism occurs most commonly immediately after birth, less frequently than was once thought during birth, and occasionally several days after birth. From a review of the literature and from personal experience Mr. Stephenson concludes that Credé's method of prophylaxis must still be regarded as the best. As a matter of detail it is found that 1 per cent. silver nitrate is even more efficacious than the 2 per cent. solution advocated by Credé, whilst the inflammatory reaction is less marked. Nearly all the bad effects which have been attributed to the treatment are due to faulty modifications in the technique advocated by the founder.

English ophthalmologists have not been blind to the gravity of the disease and its results. In 1885 a deputation of the Ophthalmological Society of the United Kingdom endeavoured to induce the President of the Local Government Board to sanction the distribution by the registrars of births of a simple notice pointing out the dangers of the disease. The Government declined on the score of expense, which was estimated at £7334. Mr. Stephenson's comment is that "we grudge the expenditure of a poor £7334 per annum, when the Commonwealth is losing yearly upwards of one-third of a million sterling by reason of individuals disabled by the ravages of ophthalmia in infancy." Some countries are already ahead of us in their measures of prevention. Compulsory notification of the disease is in force in Switzerland, Germany, Austria, France, and many of the States of North America. There is every reason to introduce it with us, at the same time organising the means of coping with the cases. Every maternity hospital ought to have its ophthalmic surgeon, a step as yet taken only by Queen Charlotte's Hospital London; the Rotunda Hospital, Dublin; and the Maternity Hospital, Glasgow. Other preventive measures, easy and cheap in application, and requiring only organised effort, will readily occur to those qualified to deal with the matter. We cannot but think that the disease might thus be eradicated as completely as typhus fever has been. We hope that the British Medical Association may accept the mandate of its ophthalmic section, which passed unanimously a resolution that action towards the prevention of ophthalmia neonatorum should be undertaken by the Association; and we may be permitted to suggest that the Association should combine forces with the Ophthalmological Society, already a pioneer in this field of preventive medicine. It would not be the first time that two bodies have worked together to influence the Government, and in this case they will have behind them the solid opinion of all the medical profession that ophthalmia neonatorum could be and ought to be suppressed by proper measures of precaution.

## Infectious Diseases in the West Indies.

Some four years ago[1] we drew the attention of our readers on several occasions to an epidemic which had occurred recently in Trinidad, and concerning the nature of which an unfortunate difference of opinion existed between the medical authorities of Trinidad and Barbados. Small-pox had been prevalent in the latter island and subsequently an outbreak of disease occurred in the former which was declared not to be small-pox but an "eruptive fever" which was termed "epidemic varioloid varicella." Communications which passed between the governors of the two islands resulted in the despatch to Trinidad of Mr. J. F. E. BRIDGER who had been in charge of the small-pox hospital upon Pelican Island during the epidemic in Barbados. Mr. BRIDGER conducted his duties in a most thorough and scientific manner and came to the conclusion that the epidemic in Trinidad was "small-pox of a very mild type." This decision was not then accepted by the Medical Board of Trinidad. At the time we endeavoured to reconcile the conflicting opinions and pointed out that for a few years a similar mild eruptive varioloid disease had been extending over Canada and the United States, and we suggested that from the epidemiological standpoint it was highly probable that the disease, whatever it might be called, was the same in all these places. Subsequently, with a sense of relief, we were enabled to record a distinct change in the attitude of the Trinidad authorities. We received a copy of a leaflet issued by the medical officer of health of Trinidad headed "The Prevailing Epidemic: How to Prevent its Spreading," which compelled the conviction that the disease was recognised as being small-pox, although that dreaded word did not appear in print. We gave our reasons for arriving at that conclusion.

---

[1] Ophthalmia Neonatorum. By Sydney Stephenson, M.B., C.M. Edin., Ophthalmic Surgeon to Queen Charlotte's Hospital, London, &c. London: George Pulman and Sons, Limited. 1907.

[1] The Lancet, April 18th (p. 1121), May 2nd (p. 1248), and June 20th (p. 1750), 1903.

We have now received a colonial Blue-book issued by the Central Quarantine Authority for the West Indies, giving an account of the proceedings at meetings held at Bridgetown, Barbados, on June 11th and 12th last. We may here explain that by a scheme recommended by the Quarantine Conference of 1904, and recently adopted at the instance of the Secretary of State for the Colonies by the various colonial Governments which were signatories to the Convention, the Central Quarantine Authority was to meet once at least in three years or at any time at the request of two parties to the Convention. The recurrence of some cases of "eruptive fever" (similar to those which had occurred in Trinidad) and the outbreak of yellow fever in Trinidad had caused several questions under the Convention to arise between Grenada and Barbados on the one hand, and between Trinidad and Grenada and Barbados on the other. The meeting in June was accordingly summoned, and delegates from Trinidad, British Guiana, the Windward Islands, the Leeward Islands, and Barbados attended, with the Hon. W. K. CHANDLER, LL.D., C.M.G., as president. Many subjects of interest were discussed and the conclusions arrived at will doubtless be of lasting benefit in matters relating to infectious diseases in the islands concerned. We are concerned, however, at the present time with the epidemics of "eruptive fever" to which we have referred. The remarks on these outbreaks as reproduced in the Blue-book are brief but emphatic. The meeting considered and unanimously adopted the following decision: "That the disease which has within recent years been prevalent in Grenada and Trinidad, and there known by the name of 'eruptive fever,' is small-pox." We receive this conclusion with a considerable amount of satisfaction, as a reference to our previous views on the subject will prove that we strongly insisted upon this diagnosis as the correct one. To Mr. BRIDGER great credit is due for the firm attitude which he assumed after his visit to Trinidad at the time of the early epidemics. A medical heresy which he detected has been refuted and epidemiologists will welcome the announcement that the "new" epidemic disease which was said to have occurred in Trinidad in 1902–03 is now fully recognised to have been small-pox.

The reluctance of the authorities of Trinidad to acknowledge the existence of small-pox in the island, with the consequent harm to commercial enterprises, can well be imagined, but no good ever came of the policy of concealment, though it is eternally attempted in these situations by Governments no less than by municipalities and private individuals. The subsequent and somewhat tardy announcement of the Central Quarantine Authority for the West Indies, however, is worthy of all praise, as disposing of any doubt as to the real nature of the disease which was locally designated "eruptive fever." The whole history of the epidemic again proves what has now been so often experienced, the difficulties which may arise in the diagnosis of small-pox. As is well known, the distinction from varicella is often most difficult, and unless suitable precautions are adopted in doubtful cases widespread and deplorable results may follow. In the Blue-book no full account of the discussions is recorded; perhaps, as purely technical matters were involved, this was a wise procedure, but there were several points which required elucidation. For example, in the earlier stages of the controversy it was suggested that the epidemic disease in Trinidad was uninfluenced by vaccination, therefore it could not be small-pox. As we pointed out at the time, Mr. BRIDGER adduced evidence to the contrary, and it would have been interesting to know now whether vaccination was generally adopted after Mr. BRIDGER'S report and whether this had a notable effect on the spread of the epidemic. The medical officer of Trinidad, during the time of the early epidemic, recommended all persons not thus protected to be vaccinated, and we should have liked to hear a summary of what was done and what resulted. Mr. BRIDGER was subjected to much criticism at the time for daring to call the disease small-pox, but the decision arrived at by the Central Quarantine Authority amply bears out his contentions, and the courage which he exhibited in stating his unpopular opinion will win him great credit for independence as well as acumen.

## The Connexion between Recruiting and the National Health.

THE statistics of recruiting and the general observations of the officers engaged in that important duty can be regarded as supplying a valuable link between the sciences of medicine and anthropology. As civilisation advances and knowledge and experience increase it will become clearer to all how paramount an object of interest to the nation as a whole is the health of every individual member of the nation. While, on the one hand, in hospitals and in private practice, the different types of accident, deformity, and disease present themselves daily to the physician, the surgeon, and the specialist, on the other hand, the different types of health and those as yet imperfectly understood conditions in which, without actual disease, functions are impaired and weakened, present themselves day by day to the recruiting medical examiner. At the hospital we seek for disease, at the recruiting station we seek for health, being guided in each case by the laws of medicine in their broadest sense. With a perfect system of medical education it would be possible to imagine the medical student being forbidden to observe diseased conditions in hospitals until he had, in prisons, in workhouses, and in other public institutions, made himself thoroughly conversant with the usual types of bodily health and of existence, as modified by sex, age, and previous antecedents.

More than 30 years ago Dr. THEOPHILUS THOMPSON noted how remarkable it was that in this country, while descriptive anatomy and physiology were being so diligently studied, so little attention was ever directed to the development and proportion of the human body as a whole. We are quite familiar with the physical qualities of every bone of the skeleton, with the origin and insertion, usual and accidental, of every muscle, and with the normal course and the variations therefrom of every vessel and nerve to their final destination; but to the size, weight, and proportions of the whole body, and its variations under the modifying influences of age, sex, race, climate, food, occupation, and so on, we appear to attach little importance. Anatomical text-books are chary of giving such information even where it is available, and it would be possible for a student to win prizes over and over again in anatomy and remain ignorant of the larger facts of his science as illustrated by consideration of the body as a whole. Yet in all nature man probably exhibits the widest range of variation in type. The yearly reports on recruiting might form a valuable means of estimating the hygienic condition of a great section of the nation and of taking cognisance of the ratio, the origin, and the development of those various peculiarities of constitution which shorten certain individual tenures of life either by a premature old age of the body or by quasi-senile failure of particular organs. That recruits will be drawn largely from a class where good physique must not be looked for and where domestic environment has been faulty has, of course, to be remembered or our generalisations will be pessimistic out of all proportion to the true state of the case; as a matter of fact, deductions of this sort have already been drawn by some observers. But due regard having been paid to this fact a study of the statistics of recruiting must be fruitful in suggestion. In such a study it is obvious that we must avail ourselves of the work of successive decades of medical examiners. Old and new facts when collated, by the harmony which they exhibit, become mutually illustrative, and acquire a practical value previously unknown. Research into the statistics of recruiting might throw a side-light on the nature of epidemics, their power to modify pre-existing diseases, to increase the liability to contract other complaints, and by diminution of vital energy to lessen the resisting power of the animal economy in the presence of concurrent attacks of sickness.

Since the introduction of short service in the army, and the partial application of the same system to the naval service, the health of the people in general and that of the navy and army have intersected in an increased degree; and diseases contracted in and influenced by the Services will more and more be taken back at an early age to civil life. The diseases due to climate, venereal disease depending upon the enforced celibacy of the sailor and the soldier—these are brought into the civil community nowadays with prevalence that may be increasing. We are all of us, therefore, concerned in the good health of the recruit over and above our desire that our defenders should not suffer unduly and that our taxes should not purchase for us inferior material. The care in the selection of its recruits was no doubt one of the causes of the early invincibility of the Roman legions; and the camps, fortifications, and great highways constructed by them during peace in every country in their military occupation go to show that the men were never long confined to camps, but were kept by constant outdoor occupation of a civil nature in robust and vigorous health. The selection of the material for our national forces is a duty of the first importance and one demanding knowledge of a very high degree, not only of medicine and surgery in their various branches but of the allied sciences, which are so often studied only to be forgotten when they have once served purposes of examination; and to such knowledge must be added experience which alone can guarantee exactness in the observation of every individual and the determination of his physical peculiarities. The best medical talent available in the Services might well be drawn upon in the interests of recruiting.

# Annotations.

"Ne quid nimis."

## FOREIGN BODIES AS A CAUSE OF APPENDICITIS.

IN the etiology of inflammation of the appendix there is a little that we know and much that we have yet to learn. We know that in all forms of appendicitis the presence of micro-organisms is essential and that many different forms of bacteria may be responsible for indistinguishable clinical conditions. These microbes attack the walls of the appendix itself, they may pass through it and invade the peritoneum; or if they be sufficiently virulent they may lead to the death of a portion of the appendical wall and so lead to perforation and all its consequences. It is also certain that under perfectly healthy conditions the micro-organisms which habitually dwell in the cæcum and appendix have practically no power over the mucous membrane of the appendix; some predisposing factor must assist or some unusual micro-organism must be present. One of the most important of these predisposing factors is a blocking of the lumen of the appendix near its opening into the cæcum. This blocking may be the result of kinks, or external pressure, but commonly it follows some previous inflammatory change. Interference with the circulation in the appendix is also sometimes responsible for favouring the action of micro-organisms, for if the appendix becomes kinked its blood-vessels are narrowed and its blood-supply is materially affected. There is, however, another cause, sometimes merely predisposing, sometimes definitely exciting: foreign bodies may enter the appendix, or concretions may form within it, but from whatever origin they are derived no doubt can be felt as to the importance of these "appendical bodies" in furthering the inflammatory changes in the appendix. Partly these bodies accomplish this by blocking the outlet and favouring the accumulation of mucus within the appendix. The increased tension thus produced in itself assists the passage of microbes into and through the mucous membrane and the other coats of the appendix, but it also damages the mucous membrane and thus lessens its resisting power. Further by inflicting injury on the lining membrane of the appendix these bodies assist in producing appendicitis. Before discussing the nature of these appendical bodies it is well to make clear the fact that the presence of one of these bodies is by no means essential to the production of an attack of appendicitis; in very many cases no included body is found in the appendix and even when it is there it is not rarely probable that it has not assisted in the causation of the appendicitis. Moreover, it is clear from our present knowledge that, though the stenosis which prevents the escape of an appendical body may be the result of the irritation produced by that body, a stenosis may occur from any attack of appendicitis, due to any cause whatever, and without the presence of an appendical body. In the present issue of THE LANCET are three papers bearing on the subject of the nature of the bodies found in the appendix. When the diseases of this organ first attracted the attention of the medical public it was believed that the majority of these bodies were "foreign bodies" in the sense that they were thought to have been taken in by the mouth. Many of them were of the size and shape of cherry stones, others resembled apple pips, and even when examined more carefully the stratification which was seen was thought to support the theory that they were seeds. Microscopic and chemical examination have shown, however, that the vast majority of these "foreign bodies" are nothing more than masses of fæcal material bound together with inspissated mucus. When the appendix is healthy it is possible that small fæcal particles may enter the organ for a time and then be carried out with the flow of the secretion of the appendix; but if at any time the presence of a minute fæcal mass should coincide with some predisposing factor, some temporary swelling of the mucous membrane near the orifice, then the imprisoned particle grows by the deposition on it of more fæcal material and is cemented with the morbid mucus poured out by the irritated walls. Not only, however, do these fæcal conglomerations mimic "foreign bodies"—that is to say, substances introduced from without—but they also imitate structures formed elsewhere in the body. Sometimes, though rarely, a number of facetted "calculi" are found in an appendix; in colour, in shape, and in appearance they are almost indistinguishable from biliary calculi; and it is certain that some of the cases in which gall-stones have been described as occurring in the appendix have been instances of facetted appendical concretions. The only valid test is the chemical, for if cholesterin and bile pigments are shown to be present the calculi may be claimed as gall-stones. Judged by this test true biliary calculi do very rarely occur in the appendix. Dr. D. T. Barry of Cork has contributed a paper to this issue of THE LANCET in which he describes a case where four small facetted stones were found in the appendix. They closely resembled biliary calculi, but when tested for cholesterin and for bile salts only negative results were obtained, and they were found to consist chiefly of calcium phosphate with a little organic matter. But true foreign bodies do occur in the appendix, and a paper, also in this number of THE LANCET, by Dr. W. Hal Barnett and Dr. J. W. Scott Macfie, describes a case in which a clove was found in a vermiform appendix which was the sole viscus in an inguinal hernia. The clove was well preserved and probably this was owing to its essential oil. The most important, however, of the three contributions which we have mentioned is by Mr. W. H. Battle. He points out that many fæcal concretions in the appendix have formed about a foreign body as a nucleus. This nucleus may be sometimes as big as a pin but it may be a minute particle. Of what does it usually consist? Mr. Battle maintains that there has been a real increase in the frequency of appendicitis; the older physicians did not have so many cases as we see now; it was not merely a want of observation; they were careful observers and if the condition had been even half as frequent as it is at present they would have observed it. Dr. Samuel Fenwick found only 19 cases of disease of the appendix in the post-mortem records of the London Hospital in a period of 40 years ending 1884. Several theories have been suggested to account for the real and enormous increase which has occurred, and after discussing some of the suggestions Mr. Battle brings forth the idea that minute particles of iron are the real cause. He shows that the great increase of appendicitis first occurred in America and at a time when steel or iron rollers had been recently introduced for grinding flour. The increase of appendicitis occurred first in the towns where the rolled flour was first used; then it spread to the villages, and lastly to the negroes who had earlier escaped, and this spread corresponded with the spread of the use of rolled flour. The invasion of this country followed, when the lower cost of American flour made it almost impossible for any extensive grinding of flour to take place in this country. If this explanation be correct we should expect to find iron particles in the centre of appendical concretions, and so we do. Mr. Battle recounts a typical case of appendicitis in which at the operation a concretion was found and in its centre was an irregular fragment of iron. It is well worth while to examine into the truth of this suggestion. The detection of metallic iron is easy; the magnet is of itself sufficient, but if any more were needed heating the concretion with dilute hydrochloric acid would soon furnish a solution to which the ordinary tests for iron could be applied. We are inclined to think there may be a good foundation for Mr. Battle's theory, and if examination shall prove its correctness in any appreciable number of cases we should be in a position to suggest precautions which might mitigate the frequency of appendicitis.

## THE TRIPPER'S LEAVINGS.

THE excursionist who litters a grassy glade with greasy paper, who cuts his name on a venerable monument, or who pulls up the lilies on some lovely sheet of water is an objectionable nuisance whose education, not always that of the board school, has failed to teach him decent behaviour. He is, moreover, a person not likely to be deterred by any consideration for others from his malpractices, even if it be pointed out to him that his conduct not only annoys persons who are strangers to him but is actually a cause of danger to them. The waste-paper referred to once enwrapped the solids of an *al fresco* meal, and it seems generally to be made as conspicuous as possible by those who abandon it. By a strange perversity such trippers, when they have finished the liquor which they have brought with them, abandon their glass bottles in a surreptitious manner so that they become traps to injure the unwary, having previously satisfied their love of useless destruction by breaking them, using them as missiles or targets. Sometimes the fragments lie on the road where they can be seen and avoided, at others they are hidden in long grass by the wayside. When there is water at hand the bottles are generally thrown into it in order to be broken with stones as they bob up and down. The water may be the sea near a favourite beach, and every holiday time in crowded watering-places accidents occur from this disgusting practice, children and others finding their holiday ruined by badly cut feet. The worst of it is that penal laws can do little towards preventing an offence which has to be detected and brought home to the offender before he can be dealt with. Thoughtlessness, let us hope, is the root of such conduct, and possibly some good would come from the publication of warning notices.

## A YEAR'S WORK IN THE GOVERNMENT LABORATORY.

THE work of the Government laboratory does not diminish, for the total number of analyses and examinations made in the two branches of the laboratory—namely, at the Customs House and at Clement's Inn Passage—during the year ended March 31st, 1907, was 173,606 against 158,939 for the preceding year. The miscellaneous character of the samples examined is not surprising when it is remembered that the examinations are made in regard to three branches of Government machinery. There is first the work connected with the revenue departments (Customs and Excise), then the work in connexion with the various Government offices, and, finally, the work relating to the administration of the Food and Drugs Act and the Fertilisers and Feeding Stuffs Act. Under the last section the officials at the Government laboratory act as a kind of court of appeal in regard to samples of foods and drugs which the public analyst has reported against. The number of samples so referred this year was 114, compared with 101 in the previous year, and amongst these there was not a single sample of a drug. Out of 111 samples examined the Government chemists differed from the public analyst in 20 cases, which is equivalent to 18 per cent. of disagreements, against 9 per cent. for the preceding official year. Most of the samples referred were milk and the charge of adulteration could not be substantiated in ten cases—namely, six as regards added water, three as to deficiency in fat, and one as to the presence of boron preservative. In one sample of milk there was present the extraordinary quantity of 95 grains of boric acid per pint. Butter was another substance in dispute, for of five samples in which the charge was the presence of an excessive amount of water the Government chemists were unable to agree with the public analyst in one case. It may be noted, however, that there was agreement with the public analyst in regard to a sample of brandy declared to contain neutral or patent-still spirit, in regard to a specimen of coffee as to the proportion of chicory present, and in regard to a specimen of spinach as to its containing a certain amount of copper. Amongst the samples referred to the Government chemists by the Home Office were an opaque white glass used in the preparation of toilet pins and found to contain 34 per cent. of metallic lead, and seven samples of oil taken from motor omnibuses at the instance of the Commissioner of Police, the oil in each case proving to be of a mineral description. The fisheries branch of the Board of Agriculture submitted curious samples in the shape of the eggs of the dogfish, with the result that Dr. Thorpe, the principal chemist of the Government laboratory, reported that the dogfish egg contains appreciably more nutriment than the ordinary hen's egg, having regard to the greater weight of shell and water in the latter, and would be a valuable article of food if its pronounced fishy taste and smell were not found to be objectionable. The inquiry had its origin in the depredations of the dogfish in the fisheries of the Devonshire and Cornwall coasts. An unsatisfactory state of things is shown in regard to the importations of milk and cream from abroad, the samples having been taken at the instance of the Local Government Board. The figures show that butter from certain countries in particular frequently contains boron preservative in excess of the amount recommended as the limit by the committee on preservatives in food. Dr. Thorpe was one of the members of this committee and yet he writes in regard to the above disclosures, "In the absence of legislation on the point and in view of the conflicting decisions in the courts I have been unable to advise that proceedings should be taken." This seems to us to be rather an over-official attitude. Similarly 67 samples of cream were examined and 56 proved to contain boron preservative, and 43 of these also contained salicylic acid. How long is this dosing of milk and cream with preservatives to go on absolutely uncontrolled? Surely the principal chemist to the Government ought to take a firmer stand than this in regard to this subject about which nobody knows more than he does. In the Excise department it is of interest to note that the analysis of certain samples of beer from publicans revealed an extensive system of fraud on the revenue by the addition to beer of solutions of sugar and water in such proportions that the dilution of the beer was not apparent except on chemical analysis. In regard to 1133 samples of beverages sold as temperance drinks 71 contained 3 per cent. but less than 4 per cent. of proof spirit, 37 contained 4 per cent. but less than 6 per cent. of proof spirit, and eight contained 6 per cent. or more of proof spirit. Herb beer and dandelion stout contained respectively 10·5 per cent. and 12·3 per cent. of proof spirit. Of the 1268 samples of beer and brewing materials examined for arsenic 49 were found to contain this poisonous metal in excess of the limits laid down by the Royal Commission on Arsenical Poisoning ($\frac{1}{100}$th of a grain per pound of arsenious oxide in the case of solids or per gallon in the case of liquids). The examination of tea proved satisfactory. The importation of essence of coffee is prohibited, "but many of the so-called coffee essences are absolutely devoid of coffee"! And so prohibition does not apply to them. From the point of view of excise this may be satisfactory but that does not justify the cheating of the public or calling a preparation by a wrong name.

## THE COÖPERATION OF LOCAL SANITARY AUTHORITIES WITH THE VIEW TO THE ESTABLISHMENT OF A NATIONAL HEALTH AUTHORITY.

IN the issue of THE LANCET of May 25th, 1907, p. 1445, we recorded a resolution passed by a conference of representatives of sanitary authorities in Northumberland and Durham which met at Newcastle on May 17th, to the effect that "In the opinion of this meeting it is desirable that a permanent union of the sanitary authorities of England and Wales be established as a supreme national health authority with the object of safeguarding and promoting the public health interests of the people at large against tuberculosis and other dangers to the public health." The meeting constituted itself into a temporary committee of representatives for the furtherance of the scheme. A second meeting of this committee was held at Newcastle on July 26th, when its numbers were increased by other medical officers of health and councillors. Alderman Dr. W. H. Newton presided, and in his opening statement referred to the encouraging support which had been accorded to the movement in the medical press and other quarters. A list of subjects was approved as the basis of an invitation to county councils and sanitary authorities (urban and rural) to appoint representatives to attend a conference with the object of establishing a supreme national health authority, this authority to consider all matters bearing on the public health, including tuberculosis in man and animals, milk and meat supplies, infant mortality, occupational diseases, water-supply, vagrancy, vaccination, physical degeneration, the drink problem, the disposal of sewage, the pollution of rivers, the promotion and encouragement of the use of bacteriology as a preventive measure in relation to disease, the prevention of syphilis as a national evil, the housing question, and the securing of the necessary powers and funds to carry out the requirements in respect of the foregoing matters and all other questions relating to public health. An executive committee was appointed with power to arrange for the conference in question to be held in London in October or early in the winter and to invite representatives from Scotland and Ireland to the conference. We gave our support to this scheme at its inception as a definite endeavour to promote the establishment of a properly organised public health service such as in other countries is represented in the Cabinet. The recognition of the aims of the conference by speedy legislation does not appear to us to be very probable, but the thanks of the community will be due to those who are succeeding in making a public question of a national health authority. We consider that the present coöperation is setting to work in the right way to win notice in the proper quarters.

## THE DIRTY WATER-BOTTLE.

IN places of refreshment a clean sparkling water-bottle is rarely the rule. The glass is usually filmy instead of bright and often presents an appearance distasteful to cleanly sentiment. It has even been suggested that there is a definite design in exhibiting on refreshment bars water-bottles not scrupulously clean, the idea being that the customer may be induced to order a bottle of mineral water instead of slaking his thirst gratuitously. Dirt is nearly always the evidence of things unseen in the shape of micro-organisms, and the public have a right to expect the water supplied to them to be in a fit condition for drinking. We go further and suggest that our health authorities might occasionally organise a system of inspection and examination of the water used for drinking purposes at railway bars, restaurants, public-houses, and other places of refreshment, and inflict a wholesome penalty on the caterer who keeps the water-bottle and the water in it in a dirty condition. It should be remembered that though, on the whole, the water-supplies in most towns are good, yet they are rarely sterile, and micro-organisms accumulate in great numbers on the deposit which sooner or later is thrown down from the water kept stagnant in a bottle. The dirty water-bottle is an offence against clean, healthy principles which require no scientific refinements to establish them. Then let scrupulously clean water in scrupulously clean containers be insisted upon everywhere.

## MEDICAL EXAMINATION OF PUBLIC SCHOOL BOYS.

MUCH has been written as to the necessity for a proper medical examination of children attending public elementary schools, and there seems at last some likelihood that provision for such needs may be made by Parliament. A similar examination of the boys who enter at our large public schools may not at first sight appear so indispensable, inasmuch as they are drawn from the richer classes, and not only should they be presumably free from many disorders resulting from unwise or defective feeding, but any physical defects should be already well known to their parents who can afford constant medical supervision. The inquiry carried out by Dr. Clement Dukes, an account of which appears in another column, shows that this presumption is scarcely borne out by the facts. It is certainly surprising to find that deformities resulting from past rickets may be common among boys who enter at our public schools. Thus of 1000 boys examined, ranging chiefly between the ages of 13 and 15 years, no less than 445 presented lateral curvature of the spine and 526 had knock-knees, while pigeon-breast was observed in 126. Flat-foot, not necessarily a rickety defect, was found in 329. Dr. Dukes attributes the existence of rickets among the wealthier classes to failure of the mothers to suckle their children and to the resulting use of patent foods deficient in nourishing qualities. Another point of interest in Dr. Dukes's paper which may here be alluded to is the association of adolescent albuminuria with chilblains. Both maladies are, we believe, benefited by treatment with calcium salts and may depend on the same vascular condition. It is gratifying to find that Dr. Dukes does not attach any serious pathological importance to this form of albuminuria and deprecates any serious restrictions on a boy's pursuits on its account.

## MEDICAL INSPECTION OF SCHOOL CHILDREN IN BULGARIA.

ADDRESSING one of the sections of the recent International Congress of School Hygiene, Mrs. Watt Smyth, the author of that excellent book "Hygiene Based on Physiology for School Teachers,"[1] said that she had just returned from Bulgaria where, through the courtesy of the Government, she had been allowed to make a study of the school systems prevailing in the different parts of the country. As a result she was particularly struck by the excellence of the system of medical inspection of secondary schools, introduced by M. le Docteur Schichmanof, Minister of Public Instruction. The system has been actually in force for four years and might be copied with advantage in England. The history of Bulgaria makes this particularly interesting inasmuch as a generation has not yet passed since that country had achieved its independence. Education, Mrs. Watt Smyth said, was made compulsory in 1879 and it was significant that whereas 25 years ago of the recruits of the Bulgarian army only 10 or 12 per cent. could read or write, now 97 per cent. could both read and write, the 3 per cent. being of other nationalities. Mrs. Watt Smyth wished to make it quite clear that in all the secondary schools a medical practitioner, who in the case of girls' schools was a lady, attended every day for as many hours as was necessary. It appears from her observations that a well-equipped consulting-room is provided in each school building with all the appliances necessary for the examination of scholars. A separate health note-book is kept by the medical inspector for each child during its school life. On first admission the scholar is examined undressed and entries made of weight, height, chest measurement at rest and in full inspiration, vital co-efficient, muscular force, and physical defects. The sight and hearing are tested and the teeth examined, the general condition is considered, and the health of the parents and the diseases from which the child had suffered are entered. This examination is repeated twice a year in the upper and three or four times a year for the lower standards. If at this examination a child is found to be sickly, ill-developed, or suffering from definite disease, the parents are communicated with and the child is given leave of absence for treatment by the family medical attendant. The school medical officer visits the class-rooms and if a child is ill for more than one day he is sent home and not again admitted without a certificate signed by his family medical attendent and countersigned by the school medical officer. The latter keeps a special list of scholars suffering from any serious disorders, such as heart disease, and watched them carefully. It is interesting to note that during the past three years in the girls' secondary schools at Sofia no case of infectious disease from among the day scholars has got further than the medical officer's consulting-room and there has been no case among the boarders. The medical officer has the power of excusing pupils from gymnastics or from any classes considered injurious to their health. At the same school at Sofia, out of a class of 950, 100 were excused from certain classes during this last term. All children predisposed to, or suffering from, tuberculosis are rigorously excluded, those where the disease could be definitely diagnosed being sent to sanatoriums, and those in whom there is predisposition sent for rest and an open-air life to the Colonies Scolaires. In another communication to the Congress Dr. Pascheff said that in Sofia a benevolent society has obtained a house ten kilos from Sofia, and that it was being furnished to serve as a prophylactic home for children who were failing in health. Mrs. Watt Smyth gave further details. The medical officer to the school, she said, was responsible for the hygienic condition of the school and equipment; for the health of the scholars, especially with regard to checking infectious diseases; for the anthropometrical records; he gave lectures to the teachers on personal and school hygiene, first aid, and popular medicine; and to the scholars instruction in the rudiments of anthropometry, physiology, and general and school hygiene. This was particularly important in view of their intelligent coöperation in the future medical examination of elementary school children and the checking of infectious diseases. He made an annual report on the work accomplished; he was also consulted with regard to lessons and the framing of the time-table and with regard to punishment. He also advised as to revaccination. Very poor children, except in cases of infectious disease, were treated at school or at home by the school medical officer and food and medicine were supplied to them from the funds of the school bank. He entered in a register, signed once a month by the school director, all general notes with regard to the health of scholars, defects in the school building and infectious outbreaks. At intervals the medical officers to the schools held meetings and other practitioners were invited to take part in the discussions at these meetings. We agree with Mrs. Watt Smyth's evident view that a very complete scheme has thus been inaugurated in Bulgaria inasmuch as it insures a supply of healthy teachers, who, being trained in hygiene, will be fitted to apply its principles in the hygiene of the schools to which in due course they may be appointed.

---

[1] THE LANCET, Oct. 21st, 1905, p. 1187.

## THE ELIMINATION OF AGGLUTININS IN THE URINE OF PATIENTS SUFFERING FROM TYPHOID FEVER.

Dr. Heinrich von Hoesslin of Munich has published in the *Münchener Medizinische Wochenschrift* of April 30th some interesting clinical and experimental observations to determine whether the agglutinating substances in the blood are demonstrable in the urine. At the outset it was important to differentiate between patients in whom the kidneys were normal and those with albuminuria. He found that in the former group—i.e., patients passing urine free from protein—no agglutination was obtained with the urine, whether the agglutinating power of the blood were high or low. On the other hand, in three cases of typhoid fever with acute hæmorrhagic nephritis the urine was found to have distinct agglutinating properties, the intensity of which depended upon the agglutinating power of the blood and the amount of protein in the urine. Similar results were obtained in cases without actual nephritis but with febrile albuminuria. Here the agglutinating powers were less marked than in the cases with nephritis but were quite easy to demonstrate. These observations were experimentally confirmed in rabbits. Dr. von Hoesslin concludes that the normal kidneys are impermeable to the agglutinins, that these substances can, however, be eliminated in company with proteins in the urine when the kidneys are damaged, and that the amount of agglutinins so secreted is more or less proportional to that of the protein. It has already been shown by Pick that the agglutinins are of protein-like characters and that they can be precipitated together with the eu-globulin fraction of the blood proteins. Many views have been put forward as to the origin of the agglutinins; the spleen, the lymphatic glands, and the bone marrow have all had this function attributed to them, while Gruber is of opinion that the leucocytes are also concerned in their production, but as to the channels by which they are eliminated little or nothing has been hitherto known except that they are not found in the ordinary secretions and excretions, with the exception of the milk during lactation, in which according to Stäubli[1] they may be present in greater quantity than in the serum. They have also been found in the serum of blisters, in pericardial and pleural exudates, and in the fluid of œdema. Dr. von Hoesslin also finds that an inflammatory process increases the amount of the agglutinins in any exudate—e.g., in the cerebro-spinal fluid of a case of meningitis complicating typhoid fever the amount of these substances present was found to be markedly increased.

## ANTHROPOLOGY IN CENTRAL EUROPE.

One of the most interesting exhibits at the Exhibition of Prehistoric Anthropology recently held at Strasburg was the mummy of a Greek physician of the imperial period discovered at Achmin, in Upper Egypt, by Dr. R. Forrer, the Swiss palæontologist. The mummy, which was in perfect preservation, belonged to one Paulos, surnamed Jatros, the healer. Wrapped in a *toga clavata* of fine linen, adorned with bands and circular patches of purple, the body has not the familiar outlines of a mummy but appears simply as a long parallelogram. Round the neck of the physician, who was bearded, was found a chaplet of flowers and a ribbon of honour was wound about the feet. The choice of Alsace as a typical prehistoric centre is justified by the fact that this part of Europe is especially rich in remains of the Stone Age, of which the Heidenmauer, in the Vosges, with its string of so-called Druidic remains, is a unique example. The "Collection Forrer" contains an exhaustive collection of Alsatian skulls, many of which are of the brachycephalic type peculiar to the men inhabiting Europe long prior to the Teutonic invasions. This type of skull is still common among the peasantry on the left bank of the Upper Rhine and in Switzerland, and abounds in extant charnel houses. The Eggisheim skull, which is Alsatian, is of the same epoch probably as the Neanderthal and Spy skulls, or as the Galleyhill skull from Kent. The contention, therefore, that man first appeared on the earth's surface in Southern and Central Europe has much to support it. Dr. Forrer is to be congratulated on having gathered together a truly remarkable palæontographical collection, which ranges from skeletons found with weapons and pottery in tumuli, to the rude wooden locks of a prehistoric type still used in Alsace-Lorraine farmhouses. The rapidly delivered perambulatory lecture, in which Dr. Forrer explained his collections on August 15th, was of a type which, if instituted in our museums, would do much to explain the ideas of ethnologists to English students. All classes of the public, from soldiers of the line to artizans, were among the learned lecturer's hearers.

## THE GERMICIDAL VALUE OF LIQUOR CRESOLIS COMPOSITUS, U.S.P.

The recognition of the higher germicidal power of cresylic acid (cresol) over carbolic acid has led to the introduction of numerous proprietary solutions. It is desirable that such preparations should be uniform in composition and with this end in view a disinfectant compound has been introduced into the United States Pharmacopœia, under the name liquor cresolis compositus, consisting of crude cresol dissolved in an equal weight of soap solution. The crude cresol is a variable mixture of ortho-, meta-, and para-cresols, which may be separated by taking advantage of their different boiling-points. Dr. C. N. McBryde, bacteriologist to the United States Department of Agriculture, has determined the germicidal value of this preparation for various micro-organisms, including bacillus pyocyaneus, bacillus coli communis, bacillus typhosus, and bacillus tuberculosis and staphylococcus pyogenes aureus.[1] He has found that the liquor cresolis compositus is one and a half times as active a germicide as carbolic acid, even when prepared from a cresol of low boiling-point and free from meta- and para-cresols. The germicidal efficiency of the preparation increases with the boiling-point of the cresol it contains, and solutions made from meta-cresol and para-cresol are both much stronger germicides than a solution made from a low boiling cresol, which approximates to ortho-cresol. The bulletin contains details of the experiments which were conducted for the determination of the carbolic acid equivalent. In the case of a solution prepared from a low boiling cresol a 1 in 175 dilution was superior to a 1 in 125 solution of carbolic acid in its action on bacillus coli communis. In a comparison of the action of preparations of the three cresols on the same organism it was found that in dilutions of 1 in 250 ortho-cresol was not fatal in 15 minutes, para-cresol was fatal in 12½ minutes, while meta-cresol proved fatal in seven and a half minutes. It follows that a meta-cresol is superior to para-cresol, and that both are superior to ortho-cresol. The introduction of an official preparation of the higher cresols, the germicidal value for which has once for all been determined, would be a valuable addition to medicine and surgery. Crude cresol is less poisonous than carbolic acid, it is cheaper, and, as has been shown, it has a higher germicidal value. Its solution in soap is miscible with water, turpentine, glycerine, alcohol, and fats, and is effective in dilutions of from 1 to 2 per cent. It may be prescribed in the form of a gargle, spray, douche, lotion, liniment, or ointment.

---

[1] Zentralblatt für Bacteriologie, 1903, No. 33.

## FOREIGN CONFERENCES ON EDUCATION AND HYGIENE.

THE recent successful conference in London on the hygiene of school children was the expression of an awakening of international interest in the important issues which were under discussion. Conferences dealing with some branch of the subject have recently been held in both Switzerland and Germany. In Switzerland the sixth annual conference of persons interested in the treatment of imbecile children was held this year at Solothurn. The president, in his opening address, reviewed the progress of the past decade. The number of Swiss institutions for treating imbecile children had risen in this period from 13 to 29, and the number of children treated from 411 to 1172. In 1906 the canton of Lucerne opened a public institution for the care of defective children, and this, the first case of direct public assistance, was heartily welcomed. The number of special classes—i.e., primary classes for defective children—had risen from 20 to 67 and their pupils now number 1415 instead of 567 ten years ago. The following motions were carried :—

1. Defective children—i.e., imbecile, dumb, blind, deaf, epileptic, and crippled children—should be taught in separate schools or classes in their own interest as well as that of the school and society.
2. Experience shows that the majority of these children are sent too late, if ever to the special school.
3. To meet the defects of the Education Acts, the care of these children must be the subject of legislation, and in particular their attendance at some school must be made compulsory during the usual periods.
4. Institutions for dealing with defective children must be maintained or supported by the State.
5. An annual medical examination of children entering the primary school should be held to test their mental capacity.
6. The cost of maintenance of a child in an institution is to be charged to the canton and the parish. The parents are to be called upon to contribute in a fitting manner.
7. The Federal Council should be asked to amend the Education Acts so as to allow institutions founded by private societies to qualify for grants from the subventions given by the Federation to the primary schools, provided that these institutions accept inspection and prove to be satisfactorily conducted.
8. The cantonal Governments are likewise to be asked to support private endeavour in future legislation.

In Germany, at Mannheim, the third Congress for combating venereal disease was mainly concerned in discussing the question of teaching the laws of sex to school children. It was agreed that this proceeding was desirable, but opinions differed as to whether it was better done at home or at school. The majority were in favour of approaching the matter through simple lessons in biology. Another important branch of pediatrics will be discussed at the annual meeting of the German Society of School Hygiene, which will be held at Darmstadt; this is the care of the teeth in children. Dr. Jessen of Strassburg has drawn up a schedule of information on the matter for the consideration of school authorities. It will be remembered that the same topic produced a useful debate at the recent meeting of the British Medical Association at Exeter. It is encouraging to know that there is a universal movement to study the vital problems connected with hygiene in the upbringing of children.

## THE MISTAKEN DIAGNOSIS OF TYPHOID PERFORATION.

THE *Boston Medical and Surgical Journal* of July 18th contains an important paper on the Mistaken Diagnosis of Typhoid Perforation, by Dr. C. L. Scudder. Instances of mistaken diagnosis fall naturally into three groups: (1) those in which no lesion is discoverable; (2) those in which the lesion found does not involve the peritoneum; and (3) those in which the lesion found involves the peritoneum. Among the examples of the second group recorded are cases of pneumonia, gastritis, entero-colitis, Zenker's degeneration of the abdominal muscles (beginning with hæmorrhage into the muscles), and distended bladder. The symptoms of perforation—sudden abdominal pain, tenderness, rigidity, distension, vomiting, and rapid pulse—are also symptoms of peritonitis, and therefore certain cases of peritonitis due to other causes than perforation have been mistaken for the latter. Prominent among these are cases of cholecystitis and perforation of the gall-bladder. Keen has collected 34 cases in which perforation of the gall-bladder was mistaken for typhoid perforation of the intestine. In these cases seven operations were performed, of which five were complete, with one death. All of the cases in which no operation was performed were fatal. Killiani has reported a case in which there were two perforations of the intestine and a perforation of the gall-bladder in the fourth week of typhoid fever. In a case of strangulation of Meckel's diverticulum during typhoid fever an operation was performed under the diagnosis of perforation of the intestine. Another cause of mistake is rupture of infected mesenteric glands in typhoid fever. In such cases the typhoid bacillus has been found in pure culture in the peritoneal cavity. Thrombosis of the femoral and iliac veins is also a source of error. Peritonitis may occur in typhoid fever without perforation or other discoverable lesion. In some of these cases, no doubt, an impending perforation existed. Other causes of peritonitis in typhoid fever are softened splenic infarcts, abscess of the bladder wall, and abscess of the liver. Occasionally cases of appendicitis have been operated upon under the diagnosis of typhoid perforation. Dr. Scudder reports the following case. A woman, aged 38 years, was admitted into hospital on May 20th. Four weeks before she was taken ill with malarial cramps in the abdomen and diarrhœa. On admission the abdomen was tympanitic and somewhat rigid, the temperature was 102.2° F., the pulse was 102, and the leucocytes were 9900 per c mm. The Widal reaction was obtained. On June 5th the patient was comfortable, the temperature was nearly normal, and there was no tympanites. On June 8th, at 6.30 A.M., severe abdominal pain, most intense in the lower abdomen, appeared after the action of the bowels. The abdomen was rigid and tender in the lower part. A chill and rise of temperature to 103·6° F. followed. The abdominal rigidity increased and dulness was observed in the flanks. The number of leucocytes rose to 18,000. At noon the temperature was 105° and the pulse was 130. Vaginal examination revealed fulness and increased resistance in the left fornix. Laparotomy was performed and thick puriform fluid was found in the abdominal cavity. There was no fæcal odour and no gas in the abdomen. The appendix was normal. The ileum was examined for several feet but no perforation was found. There was a left pyosalpinx which had ruptured into the abdominal cavity. Salpingectomy was performed and the abdominal cavity was flushed with saline solution. A gauze wick and rubber tubes were placed in the pelvis. The typhoid bacillus was found in the pus. Recovery ensued. Dr. Scudder could find recorded only two cases of pyosalpinx complicating typhoid fever, but in neither was a bacteriological examination made. This case shows the importance of examining the pelvis before operating for typhoid perforation in females.

---

[1] Bulletin No. 100, Bureau of Animal Industry, United States Department of Agriculture.

## THE AWARD OF A GOLD MEDAL OF THE SOCIETY OF ST. JOHN OF JERUSALEM TO A GERMAN MEDICAL MAN.

WE have great pleasure in recording that the Prince of Wales and the Chapter-General of the Order of St. John of Jerusalem have awarded the Order's medal to Dr. Albert von Lecoq of Berlin in recognition of a splendid act of humanity and devotion. This is to be made the first occasion of striking the medal in gold, as is indeed fitting, for we doubt if ever a man before played so bravely the part of the good Samaritan. Dr. von Lecoq was travelling in Chinese Turkestan last September and met at Kashgar Captain J. D. Sherer, a British officer. They agreed to travel back to India together by the Karakoram route and had crossed the Karakoram Pass. On Oct. 2nd Captain Sherer was laid up with typhoid fever and pneumonia, and Dr. von Lecoq, after looking after him for 11 days, decided to go forward to Panacuik to bring back assistance. He did so, and nine days later arrived back with a dooly, 20 Ladakhis, and fresh ponies. We can best describe what this feat entailed by quoting from the official account:—

> To perform this feat he was obliged to travel from dawn to sunset daily for nine consecutive days, crossing the dreadful Sassar and Murghi Passes twice. During this time this gallant gentleman lived on flour balls rolled by his Anjaulik servant and then dipped in melted grease, as he left meat and other stores behind him, with a complete disregard of himself and his own health, fearing Captain Sherer would run short. On Oct. 22nd they started for Panacuik and on Nov. 2nd arrived at Leh. That Dr. von Lecoq, a mere road acquaintance of Captain Sherer's and a man of different nationality, should cross the Sassar and Murghi Passes three times in 14 days, the third time in a blinding snowstorm, the first-named pass being 17,840 feet high, and the summit consisting of some three miles of perpetual glacier, appears an act of self-sacrifice, humanity, and devotion which is deserving of exceptional recognition.

We must add that this heroic man was himself in a debilitated condition from dysentery and hard living during two years' travel on scientific research in Turkestan. It has been well said that science and humanity know no boundaries and never has it been more truly proved than by this gallant German. Captain Sherer's country has rightly marked its debt of gratitude in a signal manner to a man of whom the medical profession throughout the world may justly feel proud.

## EPIDEMIC CEREBRO-SPINAL FEVER.

IN London during the month of July there were 17 cases of epidemic cerebro-spinal fever notified, of which four belonged to Islington, three to Battersea, and two to Bermondsey. In Ireland during the week ended August 17th there were six deaths from this cause registered in Belfast. In Scotland there were seven deaths registered in Glasgow, two in Edinburgh, and one in Paisley. In Glasgow the weekly report issued on August 16th showed that there were at that time 40 cases under treatment. It is announced that the governor of Dalkeith Combination Poorhouse (*Anglice*, the master of Dalkeith union workhouse), near Edinburgh, has been removed to Dalkeith fever hospital suffering from cerebro-spinal meningitis.

THE King of Italy has graciously consented to become a patron of the International Institute for the Study of the Causes of Mental Diseases and their Prophylaxis. As a consequence, we are informed, the Italian Minister of Foreign Affairs is about to invite the various Governments to nominate official delegates to the association. It may be remembered that an international committee was formed at the Milan Congress on the Care of the Insane in 1906, and it is hoped that as many members of this committee as possible will meet at Amsterdam between Sept. 2nd and 7th during the meeting of the forthcoming International Congress of Psychiatry and Neurology. In this way it should be possible to arrange definitely the programme of work of the association.

WE regret to hear that Dr. David Nicolson, C.B., Lord Chancellor's Visitor in Lunacy, was injured while proceeding on an official visit to the Hull City Asylum on August 17th. The horse attached to a hansom cab in which Dr. Nicolson was riding having bolted, and the driver being dislodged from his seat, Dr. Nicolson jumped out of the vehicle and sustained a downward dislocation of the left shoulder-joint. This was successfully reduced and the patient is now progressing satisfactorily.

His Highness Prince Henry zu Schönaich-Carolath will be President of the Fourteenth International Congress of Hygiene and Demography. Dr. Rubner, Privy Councillor of Medicine, professor of hygiene at the Royal University of Berlin, and Professor Dr. von Mayr, Under Secretary of State, Munich, will be Vice-Presidents.

THE Royal Society has provided funds for the investigations which Dr. F. H. Scott is making with respect to the metabolic processes in nerve cells, and has awarded a studentship in biology to Dr. H. M. Woodcock in connexion with reasearches into the life-history of certain hæmatozoa of birds, to be carried on at the Lister Institute of Preventive medicine.

THE St. Thomas's Hospital old students' dinner will take place at the Victoria Hall, Hotel Cecil, on Tuesday, Oct. 1st, at 7 o'clock for 7.30. The chair will be taken by Dr. Theodore Dyke Acland.

THE King has been pleased to appoint Lieutenant-Colonel James Will, R.A.M.C. (Principal Medical Officer), to be an Official Member of the Legislative Council of the East Africa Protectorate.

**PONTYPOOL HOSPITAL.**—It has been decided to expend £150 upon an electrical installation at the Pontypool Hospital, which was opened in the autumn of 1903. There is accommodation for 19 patients in this institution, which was not only opened free from debt, but has also always been able to obtain an income more than sufficient for its needs.

# MEDICAL NOTES ON THE MAHOMEDAN PILGRIMAGE OF 1907, TAKEN FROM THE REPORTS OF THE EGYPTIAN QUARANTINE DEPARTMENT.

During the three months, February, March, and April, 43,271 returning pilgrims, of whom nearly one-half were Egyptians, were landed at Tor encampment to undergo quarantine as a consequence of the existence of plague at Jeddah. Of this number 3·4 per cent., or 1465, were admitted into the Tor hospitals, and of the hospital inmates no less than 29 per cent. died, showing the grave nature of their diseases. As usual on such occasions dysentery was the chief cause of illness, besides many cases called enteritis and diarrhœa. Several different varieties of dysentery were present and although in 17 fatal cases in one hospital amœbæ were only discovered during life in the evacuations of four patients the microscope revealed amœbæ in the intestinal ulcers in every case after death. In some few instances the Shiga bacillus was found and there were many instances of diphtheritic dysentery. One of the complications of the dysentery was large numbers of intestinal parasites, especially the *Ascaris lumbricoides*. Abscess of liver is rare in returning pilgrims and so is perforation of the intestine, but peritonitis, broncho-pneumonia, and albuminuria are constantly found at necropsies. The rectum and the cæcum were the parts of the large intestine most affected and even when the whole of the large intestine was infected the lesions stop abruptly at the ileo-cæcal valve. Several times the dysentery was found to be gangrenous before death. It must not be forgotten that many of the patients are very old men, worn out with fatigue, and suffering from depression after many days of great religious excitement.

Although more than 16,000 pilgrims were landed from Jeddah only two cases of plague were discovered, both towards the end of the season; both cases were fatal, one a bubonic patient who became septicæmic and then infected his wife with pneumonic plague. Many cases of malaria were seen, mostly benign tertian or malignant tertian, and occasionally the quartan variety, which yielded to intramuscular injections of quinine.

In the isolation hospital there were 123 admissions, including small-pox, chicken-pox, erysipelas, and some cases of dysentery which were admitted when the other hospitals were too full to receive them.

For the third year Dr. Gotschlich discovered cholera vibrios in a few patients who showed no clinical or pathological signs of cholera. In the surgical wards 17 cases of tropical phagædenic ulcers were admitted. The patients treated were of many nationalities—Egyptians, Turks, Russians, and a smaller number from Tripoli, Algiers, Morocco, Syria, Tunis, Bosnia, and Bulgaria.

A large number of pilgrims this year went direct from the Sudan, for the new railway now allows them to get from Khartoum to Jeddah in less than three days at the modest price of £1 per head.

At the Suakin camp 230 vaccinations were performed on the children of the pilgrims, and one healthy negress, who chose that occasion to have her first child, required, before delivery, the operation, sometimes necessary in the Sudan, of dividing the artificial hymen which is the result of sewing up the labia majora as a sequel to clitoridectomy during childhood.

The water-supply of Jeddah was well described in a recent number of The Lancet (July 6th, p. 51), but the description of Dr. Suleiman Bey Hamada, who accompanied the caravan all the way to Mecca, makes it clear that Jeddah fully deserves the plague, though it is hard on the pilgrims coming from fairly clean countries to have to run the gauntlet there. He says that a horrible smell was noticed at a great distance from the town, and that fæcal matter and rotten fruit and vegetables were lying about everywhere. Hence arose dysentery and typhoid fever, so that every day several pilgrims died in the open street without having received any medical help. Several pious regulations exist on paper, but the local Turkish authorities have no sufficient *personnel* and are too much afraid of causing a revolt among the pilgrims to attempt to carry out the sanitary laws. During January no less than 656 deaths occurred there (including 34 from plague), mostly due to undiagnosed diseases of the digestive system. In March the deaths from plague in Jeddah reached 149, yet there is no isolation hospital and apparently no means of treating the sick! The road between Jeddah and Mecca was free from robbers this year, but more than 20 Indian corpses were left by the roadside to be disposed of by vultures and wild animals, for there is no medical man to report the death of a pilgrim on this part of the journey and still less to declare officially the cause of the death. Mecca was entered with a caravan of more than 15,000 camels and the city was found to be relatively clean, though there were many cases of dysentery and pneumonia and the small-pox patients walked about as they pleased among the throngs of excited devotees who numbered this year about 250,000. The general mortality during the feast days varied between 50 and 80 per day, chiefly amongst Indians. The pilgrims from Java and the Sudan also furnished a terrible number of deaths, but apparently there were no cases of plague transported from Jeddah.

At Yambo, on the way to Medina, the water sold to the pilgrims is said to have been disgusting, smelling badly, of a milky colour, and full of larvæ. Again, at Yambo there is no hospital provision for the sick.

Enough has been said to show the difference between the satisfactory arrangements of the International Quarantine Board of Egypt under the presidency of Dr. M. Armand Ruffer and the criminal carelessness of the Turkish Government in the Holy Places.

# THE SEVENTH CONGRESS OF SCANDINAVIAN SURGEONS.

(From our own Correspondent.)

The Seventh Congress of Surgeons from the four Scandinavian countries (Denmark, Finland, Norway, and Sweden) was opened in Christiania on August 8th, the President, Dr. Jervell of Christiania, being in the chair. The Congress was in session from August 8th to the 10th, the morning of each day being reserved for the consideration of subjects selected for discussion. During the afternoons communications were delivered by members of the Congress on various surgical topics.

On the first day Professor T. L. Borelius (Lund) opened a discussion on Resection of the Colon. His experience, gained from his own 29 cases, led him to the following conclusions: 1. In cases complicated by ileus primary resection is not to be performed, but a palliative operation, doing away with the ileus. 2. Where ileus is not present primary resection of the *ascending* colon may be carried out. 3. Resection of the *left* part of the colon ought not to be done as a primary operation, but one may choose between the Bloch-Mikulicz extraperitoneal operation or the operation in three stages (*séances*). 4. As to the transverse colon, a part of not too great length may be removed by primary intraperitoneal resection or by the Bloch-Mikulicz operation. If a larger part is to be removed it is best to resect the whole of the right or of the left half of the colon, according to the site of the disease, by the operations recommended above (3). 5. For the resection of the lowest part of the colon (in the vicinity of the rectum) Schlosser's operation in three stages is to be preferred.

Professor John Berg (Stockholm) said that since 1890 he had performed resection of the colon in 31 cases with eight deaths. He had tried the operation in two or three stages, but felt inclined to prefer the primary resection.

Professor Tscherning (Copenhagen) preferred a palliative operation in serious cases, but emphasised the impossibility of laying down hard-and-fast rules for the treatment, the cases being so different.

Professor Berg read a paper on the combined method in operation for cancer of the rectum. During the years 1890 to 1907 he had operated on 156 cases of cancer of the rectum. In 48 cases a colostomy was done with a mortality of 14·6 per cent., while in 19 not severe cases amputation or resection without auxiliary incision was performed with one death. In the majority of the patients (77) amputation or resection by means of incision in the sacral region was done with seven deaths. The combined abdomino-sacral or sacro-abdominal was used only in 12 patients, of whom six died as a result of the operation. Professor Berg drew particular attention to a mishap he had experienced in four of these 12 cases—viz., gangrene of the lower stump of the rectum—and discussed the origin of this disagreeable complication and how it might be avoided.

Notwithstanding the great mortality he thought that the combined method had a certain field of its own, especially when it could be foreseen that the removal by the sacral method would be too difficult or incomplete, or where such proved to be the case after a beginning had been made with the sacral operation.

Dr. Johan Nicolaysen (Christiania) reported two cases of Chronic Ileus, and Dr. P. Bull (Christiania) one of Volvulus of the whole of the Jejunum and Ileum.

Professor Ali Krogius (Helsingfors) illustrated and explained an ingenious method of treating the duodenal stump remaining after resection of the pylorus, so as to avoid the various unpleasant sequelæ which often arise from its defective treatment.

Professor Borelius read a paper on a series of 43 cases of Stone in the Ductus Choledochus. From July 1st, 1898, to July 1st, 1907, he had operated on 180 cases of gall-stone and had performed choledochotomy in 30 cases with six deaths. Of eight cases of stone in the ductus choledochus not operated on four died, while of six patients who were only incompletely operated on all died.

Professor Th. Rovsing (Copenhagen) said that in several cases in which a choledochotomy proved too difficult he had done a sort of choledocho-lithotripsy, gently crushing by means of two fingers the stones in the bile duct, so that the fragments might be pushed down into the intestine. Where this procedure did not prove efficient he had sometimes succeeded in forcing the stones from the bile duct back into the gall-bladder by grasping the duct firmly below the stone between two fingers and exercising a pressure in the direction upwards. In such cases it was, of course, necessary to prevent the stone from impacting itself in the hepatic duct.

Professor Rovsing communicated a note on the Antiseptic Properties of Nitrate of Silver. For many years he had been constantly using it and now preferred it to all other antiseptics in the overwhelming majority of circumstances where antiseptics were needed. His reasons for doing so were that, though not poisonous to the human body, it was one of the strongest antiseptics known, and that it retained its bactericidal power also when converted into albuminate or chloride of silver. He recommended it particularly for the impregnation of gauze for dressings. It had enabled him to do away entirely with iodoform gauze in his hospital—e.g., he always used "lapis-gauze" for replenishing the Mikulicz bag in laparotomies. "Lapis-catgut," the preparation of which was exceedingly simple, was absolutely safe and trustworthy as to sterility, agreeable to handle and tie, and, as tests had proved, stronger than raw catgut, while all other methods of preparing catgut lessened its strength. Moreover, "lapis-catgut" kept its strength for years, while iodine-catgut soon became brittle.

Professor Tscherning (Copenhagen) said that he also thought nitrate of silver an excellent antiseptic. It had been in use as such for many years at the Kommune Hospital of Copenhagen. The preparation of nitrate of silver catgut had been published years ago by a Norwegian colleague.

On August 9th an interesting discussion on the Treatment of Inflammatory Diseases of the Adnexa Uteri was opened by Professor Otto Engström (Helsingfors) and Professor Joh. Kaarsberg (Copenhagen). While Professor Engström gave a lucid exposition of the different methods of treatment, operative and not operative, Professor Kaarsberg contributed to the Congress a conspectus of 289 cases on which he had operated. Perhaps the most important feature about his communication was the information it contained about the after-history of nearly all his operation cases. Professor Kr. Brandt (Christiania), Professor F. Westermark (Stockholm), and Dr. H. Forssner (Stockholm) took part in the discussion.

Professor Tscherning demonstrated an original operation which he had devised for the removal of malignant new growths in the lower part of the hypopharynx and the adjoining part of the gullet. In contra-distinction to all other operations it spared all important nerves and vessels and gave an excellent view of the diseased region, far better than a lateral or subhyoid pharyngotomy. An incision was made in the middle line of the anterior surface of the neck, a low tracheotomy performed, whereupon the anterior wall of the larynx, with the hyoid bone and the uppermost rings of the trachea, was divided in the middle line. After inspection of the anterior of the larynx Professor Tscherning divided also the posterior wall of the larynx and the upper part of trachea in the middle line, and by inserting retractors on the pharyngeal and œsophageal surface of the severed cartilages he could with the greatest ease inspect and, if needed, excise every wrinkle and fold of the mucous membrane of the hypopharynx and uppermost part of the gullet. In the cases operated on the bleeding had been practically *nil*, this being one of the advantages of the operation. Moreover, it spared the vocal apparatus, at the same time giving just as good a view of the diseased region as if a laryngectomy had been performed.

The application of X Rays to the Service of Surgery formed the theme of three communications. Professor John Berg (Stockholm) demonstrated a series of photographs of Stones in the Urinary Bladder and related how in more than one case the x rays had been of inestimable value to him. He had in one case emptied the bladder of stones and had assured himself of the thoroughness of the operation by searching it carefully with his finger. Nevertheless, the patient's symptoms continued and on the photograph there appeared a shadow of a stone. A second operation at first failed to locate the stone, but after much searching he succeeded in finding a diverticulum with so narrow an opening that he could not get a finger-tip through it; the stone lay in this diverticulum. In other cases the x rays had helped him to diagnose prostatic stones.

Dr. O. Borchgrevink (Christiania) illustrated by x ray pictures the results of his ambulatory extension treatment of fractures of the upper limb. His apparatus was very simple, using only rubber tubing as extending force. The results, also in the difficult cases of supracondylar fracture of the humerus, were above all praise.

Dr. P. Tetens Hald (Copenhagen) showed a series of Roentgen pictures demonstrating the great help that might be derived from them in the diagnosis of affections of the accessory sinuses of the nose. While the healthy sinuses were clear and had distinct outlines, the diseased ones appeared blurred or seemed to have entirely disappeared. That the sinuses were present even in the last-mentioned cases was proved by the photographs showing probes introduced into them. Photographs of affections of all the accessory sinuses were shown and some interesting cases related illustrating the value of the method in diagnostic difficulties.

*(To be continued.)*

# SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

## THE EXHIBITION.

In connexion with the Second International Congress on School Hygiene an exhibition of school buildings and furnishing appliances was held in the central hall and adjoining rooms of the University of London. The exhibition was wide in scope and members of the Congress and others took the keenest interest in the various exhibits which illustrated recent progress in educational methods not only in this country but in Austria, Denmark, France, Germany, Holland, Italy, Spain, Sweden, and Switzerland.

Many of the stalls necessarily embraced exhibits which under a scientific classification would naturally fall under different categories, but for the purposes of this notice the exhibits may be conveniently divided into two sections, the first dealing with buildings, and including materials of construction and sanitary arrangements, and the second dealing with furnishing and equipment, including teaching and technical appliances.

Under the heading of

### *School Buildings*

may be included the numerous and useful loan collections of drawings, plans, and designs. One of the chief attractions was the collection of exhibits from schools under the control of the London County Council. The details of medical supervision were admirably shown by means of charts and diagrams, while the plans and elevations of the different types of schools under the control of the Council gave the visitor to the exhibition an excellent idea of the work that is being done by this body. Several interesting exhibits were shown by provincial schools and the Scottish section illustrated the keen interest that is taken in education north of the Cheviots. One object in the English loan collection which bore no label, but which was apparently intended to illustrate to children a lesson on the care of the baby, was a cradle containing a large doll. Though roughly made the cradle admirably suited the purpose for which it was intended and we should like to see such an article a prominent feature of every elementary school in the kingdom. The carpentry of such an article might well form part of the teaching for boys, and poor people through their children might thus become acquainted with a cheap and easily made cradle which if put into practical use might lessen the appalling number of cases of overlying.

Among exhibits competing for medals was an excellent type of portable school pavilion erected in the grounds by Messrs. Christoph and Unmack (a German firm with London representatives at 31, Queen-street, E.C.). This pavilion, measuring 32 feet by 70 feet, contained two class-rooms, a physician's room, and a corridor. This type of pavilion, which has been registered under the name of the Doecker, is largely used in Germany. The exhibit, which obtained a silver medal, was equipped with hygienic school furniture made by Messrs. Mueller of Berlin. Messrs. Humphrey of Knightsbridge, London, S.W., showed illustrations of various kinds of portable iron buildings, and the Ducker Company of Kingsway, London, W.C., showed a school-house measuring 22 by 33 feet which was erected in eight days "without nail or screw." The British Challenge Glazing Company, Limited, Bank Chambers, London, W.C., showed samples of its patent flooring for hospital and general use for which it claims, among other things, that it is uncrackable, fire-resisting, and damp proof. The same firm showed a patent glazing which seems to possess genuine merits. The Plastom Asbestos Flooring Company, Bunhill-row, London, E.C., also showed a fire- and vermin-proof flooring, while the British Doloment Company, Caxton House, Westminster, exhibited samples of its patent flooring which is said to be impervious to acids and oils. The Limmer Asphalte Paving Company, 2, Moorgate-street, London, E.C., showed specimens of paving blocks and other examples of the application of asphalt. The Chaddock Mechanical Window Company, 22–25, Cornhill, Liverpool, certainly deserved the silver medal which it obtained for its exhibit. Running through the centre of the window perpendicularly is a metal rod which fits into sockets at the top and bottom of the window frame. The window thus turns about a vertical axis and can be set at any angle according to the direction of the wind, while another advantage, and not a small one, is that both sides of the window can be cleaned from the inside. The Combined Collapsible Ventilator Company, 85, Duke-street, Liverpool, also showed an improved window and a ventilator which can be adapted to existing sashes with a view to solving the problem of ventilation without draught. Ozonair, Limited, 27, Chancery-lane, London, showed the different forms of their apparatus as applied to ventilation and various manufacturing processes. Messrs. Cassels, Park-place, Stirling, N.B., who have been awarded a silver medal, showed their Clarefont wash-basin with screw-down taps, having an inner basin in which water is allowed to flow and overflow during the time of ablution in schools, a clean supply of water being thus maintained for each pupil. Experience has shown that this system is an economical one. The same firm also showed a "one each" towel distributor for providing a separate towel to each scholar without danger of its being taken away or mislaid. Messrs. Pryke and Palmer, 40, Upper Thames-street, London, E.C., exhibited a large selection of school ironmongery as supplied to the London County Council. Interesting features of their exhibit were a portable hospital bath of steel covered with porcelain enamel and a patent window fastening for asylums and other institutions whereby a window-sash can be prevented from being opened to a larger degree than an attendant may desire. The Ajax Sanitary Company, 22, Ely-place, London, W.C., exhibited their various basins and sink fittings, which have recently been described in THE LANCET, when they were shown at the annual exhibition of the British Medical Association.[1] The exhibit of the British Sanitary Company, 341, Bath-lane, Glasgow, for which they obtained a silver medal, consisted of self-acting earth closets suitable for country schools. A very large collection of urinals, closets, and latrines, several of an excellent pattern, were shown by the Leeds Fireclay Company, 2 and 3, Norfolk-street, London, W.C., and Messrs. J. Duckett and Sons, Limited, Burnley, Lancs, had a similar exhibit. For their overflow lavatories they obtained a silver medal. Messrs. John Knight and Co., 24, Gertrude-street, Chelsea, who obtained a silver medal, displayed a large selection of drainage fittings in stoneware, and the Berkefeld Filter Company, 121, Oxford-street, London, W., showed a wide range of their well-known filters. Messrs. Candy and Co., Limited, 87, Newman-street, Oxford-street, London, W., showed their excellent stoves, "The Devon Fire," which were commended in the report of the experiments carried out under the joint control of the Commissioner of Works and the Coal Smoke Abatement Society (*vide* THE LANCET, May 19th, 1906, p. 1414). The Gas Light and Coke Company, Horseferry-road, Westminster, had an interesting exhibit, as did also Messrs. Colbran and Co., 10, Mortimer-street, London, W., the "Heaped" Fire Patent, and Messrs. A. E. Podmore and Co., 32, Charles-street, Hatton-garden, London, E.C., who showed their dust-proof Bunsen burner. The Wenham Light Company, 90, Great Russell-street, London, W.C., also exhibited their new pattern inverted mantle lamps.

### *Furnishing and Equipment.*

The two important exhibits of the Tintometer, Limited Colour Laboratories, Salisbury, and of Messrs. E. J. Arnold and Sons, Limited, Leeds and Glasgow, may be conveniently referred to under this heading. The first-mentioned firm showed apparatus and diagrams for class demonstration, together with a colour nomenclature for the precise definition of any colour. The tintometer has been applied to many purposes, industrial and scientific, and in particular has been used by Dr. George Oliver in blood examination. (Dr. Oliver's apparatus, the hæmoglobinometer and the hæmocytometer, were referred to by him in the Croonian lectures of 1896, and described in THE LANCET of Jan. 23rd, 1897, p. 251, and March 9th, 1901, p. 711.) The particular form of tintometer shown at the exhibition is adapted for educational purposes and consists of three glass standard scales in the colours red, yellow, and blue. These scales are graded into equal units, which are in colour equivalent with each other, and are used in connexion with a set of revolving colour discs, transparency frames, and diagrams. The apparatus is used not only for teaching children colours but also for testing their vision for colour blindness. Messrs. Arnold and Sons are educational publishers and also exhibited a large collection of their books and educational appliances for use in physiological and hygienic teaching, including anatomical diagrams, charts, and their well-known "Food Values Diagrams." The chief feature of their stall was, however, "The Spectrum Colour Scheme," which has been worked out by Mrs. Florence Kirk, M.R.San.I., the head-mistress of the Belle Vue Council School, Bradford. This scheme embraces a system of teaching in which improved kindergarten methods are used in conjunction with systematic instruction in the recognition of the prismatic colours. In connexion with this scheme the firm supplies an excellent prism at a low price, and paper, wool, paints, crayons, and chalks of a practically uniform standard of colour. It is worthy of note that the instruction has been so graded that no undue strain is put upon the eyes of young children. The Educational Supply Association, 42, Holborn Viaduct, London, E.C., among other educational appliances, showed some excellent adjustable desks, notably the "Farringdon," which is so designed that both desk and seat can be adjusted to suit pupils of any height. This is an important consideration when the ages of pupils vary to any great extent. The adjustable desks and laboratory fittings of the Bennett Furnishing Company, 47, Glengall-road, Peckham, London, S.E., also deserve notice. Messrs. Thomas J. Syer and Co., of 45, Wilson-street, Finsbury, London, E.C., had a very interesting collection of fittings and tools for technical schools and laboratories. Particularly noteworthy was their exhibit of metal-working tools and bench in connexion with "hand and eye training." Messrs. Harbutt, Bathampton, Bath, makers of the well-known plastic paste, "Plasticine," had an interesting exhibit of this substance, which has many uses beside modelling, such as the making of temporary cells for microscopic purposes, and so forth. Messrs. Merritt and Co., 8, White-street, Moorfields, London, E.C., exhibited their steel lockers for use in schools, and the "England Works," of Leeds, their excellent cloak-room fittings. Messrs. Newton and Co., 3, Fleet-street, London, E.C., showed their optical lanterns, and Messrs. Fletcher, Russell, and Co. a selection of their well-known furnaces, blow-pipes, and various laboratory appliances. Messrs. Spencer, Heath, and George, Limited, Goswell-road, London, E.C., showed a completely equipped educational gymnasium as applied to Ling's Swedish system and a collection of anthropometric apparatus.

---

[1] THE LANCET, August 17th, 1907, p. 458.

*Miscellaneous.*

Among the miscellaneous exhibits may be mentioned the oxygen bath of the Aeosan Company, 102, Charlotte-street, Birmingham, which is described on p. 517 of this issue. The "Sanitas" Company, Limited, Locksley-street, Limehouse, London, E., showed their various specialities, as did also Jeyes' Sanitary Compound Company, Limited, 64, Cannon-street, London, E.C.; and Messrs. Newton Chambers, Limehouse, E., exhibited their "Izal" toilet and other preparations. Messrs. N. and N. C. Bletchley, anatomical and orthopædic boot manufacturers, 89, Northgate-street, Gloucester, showed a wide selection of boots and shoes for both normal and abnormal conditions of the foot and a special bandage for weak ankles. A boot made by them with a flexible sole for ordinary use should be both useful and comfortable in cases of tender feet—most difficult cases to remedy as many surgeons know. Mr. D. H. S. Brown, 72, Hartfield-road, Wimbledon, among other things, exhibited pillow-slips and sheets the chief feature of which is a tuck running across the fabric in order to distinguish the two sides, with the object of insuring that one side only shall always be kept next the body. He also exhibited an improved support for ladies' garments. Among the publishers who exhibited books on physiology and hygiene were Messrs. Macmillan and Co., St. Martin's-street, London, W.C., and Messrs. Constable and Co., 10, Orange-street, Haymarket, London, S.W.

## MEDICINE AND THE LAW.

*The Verdict "Felo de se."*

THERE are numerous cases of persons slaying themselves as to whom there is no evidence adduced to the inquest jury of unsoundness of mind, either recent or remote. Public sentiment, however, has rendered a formal verdict "that the deceased killed himself during a state of temporary insanity" almost invariable. Following what appears to be the present-day custom of coroners, Dr. W. Wynn Westcott has usually been observed to conclude a short summing up in these cases with the question: "Will you say that this act was done during a state of temporary insanity?" During a recent week it appears that this coroner has varied his practice and has concluded by addressing the jury in these terms, "As no evidence of insanity has been laid before you are you of opinion that the deceased did wilfully kill himself and hence is *felo de se?*" In five cases during one week in three different parishes have inquest juries without the slightest moral pressure beyond this simple suggestion brought in verdicts of *felo de se.* The cases were all men. Three were at the Hackney court, all having been found in the River Lea, one, aged 74 years, afflicted with a chronic illness and *tædium vitæ;* a second, aged 62 years, suffering from poverty and lack of work; and a third, aged 53 years, a drunkard who had quarrelled with his family; one was at the Shoreditch court, his age being 51 years, he was a drunkard on the verge of delirium tremens when he took hydrochloric acid; and the last case was at Bethnal Green, an ex-prisoner, aged 38 years, who could not find work, and who took oxalic acid. The lay press, in commenting on these facts, has referred in several places to the incident as "a return to more blunt but more truthful verdicts." Probably there is a better, because truer, explanation. The inquest juries concerned were composed wholly of men of a moderate standard of education. Among such the final suggestion in the summing-up of the facts and probabilities of the case made by the president of the court would have a great influence in their minds when immediately afterwards they considered the terms of the verdict. Suggestion must have a great influence over jurymen whose knowledge of pathological conditions and legal technicalities is very small, if it exists at all; hence much may depend upon the bias of an individual coroner as to how an inquest jury will frame its verdict.

*Kaloo Nuts sold for Human Food.*

A trader in the City, named Brinkley, who had dealt in nuts for 16 years, recently made an experiment of a dangerous kind and may be congratulated that no worse result ensued for himself than a fine of £5 at the Tower Bridge police-court. According to his story, in telling which he appears to have been perfectly straightforward, he was introduced by a man, whom he described as an old traveller, to a ship's captain who had some nuts to sell of a kind not usually seen in England and he bought some. He ate several himself without any untoward result, and without any further precaution put them within reach of the public by disposing of some to a costermonger at the price of 7*s.* 6*d.* per hundredweight. The costermonger advertised them on his barrow as "the king of nuts, Kaloo, from South America," and found sufficient customers to cause several children to be taken to Guy's Hospital suffering from poisoning. One of these, who had only eaten two nuts, nearly died, and two others gave evidence at the police court to the effect that they had eaten six and seven respectively before being taken ill. Investigation by the police followed, the costermonger was traced, and the merchant who supplied him was summoned. Mr. Alfred Long, chief sanitary inspector to the borough of Southwark, gave as the result of his inquiries at Kew and elsewhere that kaloo nuts come from Central China where oils used for varnishing are extracted from them, which oils have poisonous qualities. He could find no trace of any importation of them to England during the last 50 years among firms engaged in the fruit trade in the City. Mr. G. Millson, medical officer of health of the borough of Southwark, had examined the nuts and gave evidence that apart from their inherent unwholesome qualities the nuts in question were rancid and in such a condition as in any case would render them unfit for human food. In fining Mr. Brinkley, who had sold them to the costermonger, Mr. Chapman made the observation, from which none will dissent, that to put a novelty upon the market with the intention that it should be eaten involved the responsibility of first ascertaining whether it was fit for human food or not. Mr. Brinkley is reported to have said that he had been in the nut trade for 16 years and that this was the first time that he had heard that a nut was unfit for food.

# Public Health and Poor Law.

## LOCAL GOVERNMENT BOARD.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*City of Liverpool.*—The population of Liverpool in 1906 was estimated at 739,180. The birth-rate was 32·6 and the death-rate 20·2 per 1000. The infantile mortality amounted to a high figure, 171 per 1000 births, but there was during the year considerable prevalence of measles. Amongst the agents upon which Liverpool relies for the reduction of this infantile mortality are hospital accommodation for infants suffering from measles and whooping-cough, together with special arrangements for the earliest possible notification of births, and a staff of female inspectors. For mothers who are unable to suckle their young a suitable food is provided which is "within the reach of all." Typhus fever was introduced into Liverpool on three separate occasions during 1906, the introducers being Russian emigrants. The total number of cases occurring was 52 and the disease still claims some 20 deaths annually. Dr. E. W. Hope speaks appreciatively of the system of the voluntary notification of pulmonary tuberculosis which has now been in vogue in Liverpool for several years. During 1906 there were 1842 cases notified, a very considerable number when regard is had to the fact that the notification is voluntary and that notifications are only asked for in cases where, in the opinion of the attending medical practitioner, a useful purpose is likely to be served by visits from the sanitary staff of the municipality. As regards the control of milk-borne tuberculosis, to which subject the recent report of the Royal Commission on Tuberculosis has directed public attention in an accentuated form, energetic steps are being taken in Liverpool under the Liverpool Corporation Act, 1900, which confers powers upon officers of the corporation to visit farms and to examine cows in districts outside Liverpool from which milk is introduced into the city. The Act also enables the officers to take samples of milk at the railway stations. During 1906 tubercle bacilli were apparently discovered in milk from Cheshire, Lancashire, Staffordshire, Shropshire, and North Wales. Dr. Hope reports that both the farms and the cows in the country districts are markedly inferior to those within the city, and he furnishes photographs showing the deplorable condition of some of the country cowsheds as regards light, ventilation, cleanliness, and cubic space. It will be a source of satisfaction to Londoners to learn that the London County Council has within the last few days practically obtained powers similar to those comprised in what are sometimes spoken of as the "Manchester Milk Clauses." As regards the causation of infantile diarrhœa and kindred ailments Dr. Hope has found as the result of investigations carried on over several years that amongst infants under three months of age either wholly or partially fed during the summer on artificial foods the deaths are 15 times as great as amongst an equal number of children fed upon breast milk, and although this proportion diminishes as the months of the first year of life advance the death-rate amongst those fed upon artificial foods are always much higher than upon those suckled by the mother. The municipal milk depôt continues to give satisfaction, but we are glad to see that its employment is regarded as a *pis aller*, the milk being intended solely for such infants as cannot be suckled by their mothers. As Dr. Hope states, there must be no misunderstanding upon this point, and the mother's milk must always be insisted upon where maternal suckling is practicable. The facts as regards the depôt are thus presented: "Out of 7520 infants coming very promiscuously to the depôts at varied ages and in conditions of health below the average the mortality was 96 per 1000 as against 171 per 1000 for the whole city, and 110 to 113 for the best districts, and 231 to 246 for the worst." We assume that the 7520 infants were all below one year of age. With respect to the subject of school hygiene it is satisfactory to learn that Dr. Hope has succeeded in obtaining the appointment of an additional assistant medical officer of health, who will, we gather, devote himself largely to this branch of public health.

*County Borough of Stockport.*—Dr. Meredith Young, in urging the town council of the borough to undertake a system of medical inspection of the school children in the local schools, refers to the experience of New York as regards the enormous percentage of defective children. Of 99,240 children examined in the borough of Manhattan from March 27th, 1902, to Sept. 29th, 1906, as many as 65,741, or some 65 per cent., were said to be in need of medical treatment. Some 30 per cent. manifested vision defects and 39,778 needed attention to their teeth. As many as 38,273 children are stated to have had swollen glands in the neck as the result of some present or past trouble in the throat, nose, ear, or some abnormal constitutional condition. Enlarged tonsils were found in 18,131 children, while 10 per cent. had adenoids. Heart disease was present in 1659 children and lung disease in 1039. This is a remarkable record and possibly the standard adopted in certain particulars was somewhat high, but Dr. Meredith Young will, we trust, succeed in securing medical inspection of the Stockport children.

*County Borough of Oldham.*—At the beginning of 1906 the Oldham town council adopted the voluntary notification of pulmonary tuberculosis for a trial period of six months, but we doubt whether this is long enough to enable any useful experience to be gained as to the utility of the measure. Doubtless some of the practitioners will wish to see in what way the officials of the health department deal with the information received; whether, for instance, it is used to help the patients or whether to place restrictions upon them which will render it difficult for them to obtain a livelihood and so, by lowering the resistance of the remainder of the family, encourage the development of an already latent infection or of a fresh infection. A longer limit than six months should in any case be fixed. We are glad, however, to note that in the absence of notification the disease, as measured by the death-rate, is undergoing a steady fall in Oldham.

*County Borough of St. Helens.*—Dr. J. J. Buchan states in his current annual report that use is now being made of an empty pavilion at the isolation hospital for the education of cases of pulmonary tuberculosis much on the same lines as the practices adopted at Manchester, Brighton, and other places. During 1906 42 patients were admitted, and of these 34 were discharged improved. The remaining eight died. The average duration of stay was 41 days. Voluntary notification of this disease has been in operation in St. Helens since 1899, and, on the whole, the medical officer of health is well pleased with the results.

*County Borough of Derby.*—Voluntary notification of pulmonary tuberculosis has been in operation in Derby since 1902, and Dr. M. J. Howarth reports that all cases are being notified which in the opinion of the attending physician should be visited by the health officers. In addition to the usual instructions based upon the belief that the chief cause of the disease is infection from person to person the sanitary condition of all the invaded houses is gone into, more especially as regards the presence or absence of thorough ventilation.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8578 births and 3625 deaths were registered during the week ending August 17th. The annual rate of mortality, which had been equal to 11·9, 11·7, and 11·8 per 1000 in the three preceding weeks, was again 11·8 in the week under notice. During the first seven weeks of the current quarter the death-rate in these towns has averaged 12·1 per 1000, the rate in London during the same period being 11·9 per 1000. The lowest death-rates in the 76 towns last week were 4·1 in Croydon, 4·2 in Willesden, 5·8 in Hornsey, and 5·9 in Devonport; the highest rates were 17·1 in Bolton, 17·2 in Birkenhead, 17·7 in Great Yarmouth, 17·8 in Merthyr Tydfil, and 18·7 in Stockton-on-Tees. The 3625 deaths in the 76 towns showed a slight decline from the number in the preceding week and included 407 which were referred to the principal epidemic diseases, against 362 and 378 in the two preceding weeks; of these, 130 resulted from diarrhœa, 102 from measles, 92 from whooping-cough, 38 from diphtheria, 23 from scarlet fever, and 22 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Croydon, Tottenham, Leyton, Middlesbrough, Stockport, or in 14 other of the 76 towns; the annual rate from these diseases, however, ranged upwards to 3·9 in Bootle and Stockton-on-Tees, 4·9 in Walsall, and in 6·1 in Cardiff. The deaths from diarrhœa, which had risen from 39 to 104 in the five preceding weeks, further increased last week to 130, the death-rates from this disease ranging upwards to 1·3 in Sheffield, 1·5 in Warrington, 1·6 in Wallasey, 1·7 in Rotherham, and 3·1 in Bootle. The fatal cases of measles, which had declined from 142 to 94 in the four preceding weeks, rose again last week to 102; the death-rate from this diseases was 1·4 in Merthyr Tydfil, 1·5 in Blackburn, 1·7 in Derby, 3·0 in Stockton-on-Tees, 3·8 in Walsall, and 4·2 in Cardiff. The deaths from whooping-cough, which had been 86 and 85 in the two preceding weeks, rose again last week to 92, and caused death-rates ranging upwards to 1·1 in Newcastle-on-Tyne and 1·2 in Walthamstow. The 38 fatal cases of diphtheria showed a slight decline from the number in the previous week; the highest death-rate last week from this disease was 1·5 in Warrington. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital on Saturday, the 17th inst., was 3669, against numbers increasing from 2658 to 3660 on the 14 preceding Saturdays; 430 new cases were admitted during the week, against 557, 419, and 466 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 136, 137, and 139 in the three preceding weeks, declined to 129 last week, but were slightly in excess of the corrected average number in the corresponding period of the five years 1902–06. Three deaths were attributed to cerebro-spinal fever in London last week, against one in the previous week. The causes of 38, or 1·0 per cent., of the deaths in the 76 towns' last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, and in 47 other of the 76 towns; three uncertified deaths were registered in Manchester, three in Rochdale, and two each in London, Liverpool, Birmingham, Sheffield, Preston, South Shields, Burnley, Northampton, Merthyr Tydfil, King's Norton, and Hanley.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 12·8 and 13·8 per 1000 in the two preceding weeks, declined again to 12·6 per 1000 in the week ending August 17th, but exceeded by 0·8 per 1000, the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·7 in Leith and 11·6 in Edinburgh, to 14·7 in Paisley and 19·5 in Perth. The 436 deaths in these towns showed a decrease of 43 from the number in the previous week, and included 52 which were referred to the principal epidemic diseases, against 66, 60, and 75 in the three preceding weeks. These 52 deaths were equal to an annual rate of 1·5 per 1000, which slightly exceeded the mean rate during the same period from the principal epidemic diseases in the 76 large English towns; they included 18 which were referred to whooping-cough, 15 to diarrhœa, 13 to "fever," four to measles, one to scarlet fever, and one to diphtheria, but not any to small-pox. The deaths from whooping-cough, which had been 12 and 30 in the two preceding weeks, declined again last week to 18, of which 10 occurred in Glasgow, four in Edinburgh, and two in Leith. The fatal cases of diarrhœa, which had been 21 and 22 in the two previous weeks, decreased to 15 during the week under notice, and included eight in Glasgow, three in Dundee, and two in Aberdeen. The deaths referred to different forms of "fever," which had been 15, 15, and 13 in the three preceding weeks, were again 13 last week; they included seven cases of cerebro-spinal meningitis in Glasgow, two in Edinburgh, and one in Paisley. The fatal cases of measles, which had been six in each of the two previous weeks, declined last week to four, of which two occurred in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 68 and 55 in the two preceding weeks, further decreased to 48 last week, and were 20 below the number in the corresponding period of last year. The causes of 15, or 3·4 per cent., of the deaths registered in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified deaths did not exceed 1·0 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 21·2, 18·0, and 15·7 per 1000 in the three preceding weeks, rose again to 17·8 per 1000 in the week ending August 17th. During the first seven weeks of the current quarter the death-rate has averaged 19·1 per 1000, the rates during the same period being 11·9 in London and 12·1 in Edinburgh. The 133 deaths of Dublin residents registered during the week under notice were 15 in excess of the number in the previous week, and included 17 which were referred to the principal epidemic diseases, against 12, 15, and 13 in the three preceding weeks; of these, seven resulted from measles, six from diarrhœa, three from whooping-cough, and one from "fever," but not any from small-pox, from scarlet fever, or from diphtheria. These 17 deaths were equal to an annual rate of 2·3 per 1000; the death-rate last week from the principal epidemic diseases did not exceed 1·4 in London and 1·2 in Edinburgh. The fatal cases of measles, which had been three, six, and five in the three preceding weeks, rose to seven last week. The deaths from diarrhœa, which had been four, three, and five in the three preceding weeks, further increased to six in the week under notice; while the fatal cases of whooping-cough numbered three, against four, four, and one in the three preceding weeks. The 133 deaths from all causes in Dublin last week included 36 of children under one year of age and 28 of persons aged upwards of 60 years; both these numbers were slightly in excess of the corresponding figures for the previous week. One death from violence and two inquest cases were registered; and 52, or 39·1 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths in London did not exceed 0·2, while in Edinburgh the proportion was 1·3 per cent. The 101 deaths in Belfast included six which were attributed to cerebro-spinal fever.

### VITAL STATISTICS OF LONDON DURING JULY, 1907.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·7 per 1000 of the population, estimated at 4,758,218 persons in the middle of the year; the rates in the three preceding months were 6·9, 7·1, and 7·2 per 1000 respectively. The lowest rates last month were recorded in the Cities of London and Westminster, and the boroughs of Hampstead, Chelsea, and Woolwich; and the highest rates in Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. No case of small-pox was notified in London during the month. The prevalence of scarlet fever showed a marked increase over that recorded in other recent months; this disease was proportionally most prevalent in Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Woolwich. The Metropolitan Asylums hospitals contained 3578 scarlet fever patients at the end of last month, against 2586, 2777, and 2975 at the end of the three preceding months; the weekly admissions averaged 500, against 332, 368, and 390 in the three preceding months. Diphtheria also showed an increased prevalence as compared with the previous month; among the various metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Hammersmith, Poplar, Southwark, Bermondsey, and Greenwich There were 913 diphtheria patients in the Metropolitan Asylums hospitals at the end of last month, against 946, 933, and 806 at the end of the three preceding months; the weekly admissions averaged 140, against 119, 121 and 107 in the three preceding months. Enteric fever was again less prevalent than it had been in other recent months; this disease was proportionally most prevalent in Fulham, Stoke Newington, Hackney, Southwark, and Deptford. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 66, 47, and 57 at the end of the three preceding months, had declined again to 50 at the end of last month; the weekly admissions averaged nine, against 12, nine, and 13 in the three preceding months. Erysipelas was proportionally most prevalent in St. Pancras, Finsbury, Shoreditch, Stepney, Poplar, and Deptford. The 23 cases of puerperal fever notified during the month included three in Lambeth and in Camberwell, and two in Hammersmith, Fulham, Stepney, and Southwark. Of the 17 cases notified as cerebro-spinal fever, four belonged to Islington, three to Battersea, and two to Bermondsey.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the five weeks ending August 3rd the deaths of 5191 persons belonging to London were registered, equal to an annual rate of 11·4 per 1000; in the three preceding months the rates had been 15·8, 14·0, and 12·2 per 1000. The death-rates last month ranged from 6·8 in Hampstead, 8·3 in Lewisham, 8·5 in Woolwich, 8·6 in Stoke Newington, 9·2 in Greenwich, and 9·3 in Hammersmith, to 14·1 in Southwark, 14·4 in Finsbury and in Bermondsey, 14·7 in Poplar, 14·9 in Holborn, and 15·8 in Shoreditch. The 5191 deaths from all causes included 590 which were referred to the principal infectious diseases; of these, 219 resulted from measles, 71 from scarlet fever, 49 from diphtheria, 166 from whooping-cough, nine from enteric fever, 76 from diarrhœa, and none from small-pox, from typhus fever, or from ill-defined pyrexia; in addition to these 590 deaths there were three fatal cases of cerebro-spinal fever, including two in Battersea and one in Stepney. No death from any of the principal infectious diseases was recorded in the City of London; they caused the lowest rates in Paddington, the City of Westminster, Stoke Newington, Greenwich, Lewisham, and Woolwich; and the highest rates in Chelsea, Shoreditch, Bethnal Green, Poplar, Southwark, and Battersea. The 219 fatal cases of measles were 61 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Chelsea, Hampstead, Islington, Shoreditch, Southwark, and Battersea. The 71 deaths from scarlet fever were 28 above the corrected average number; the greatest proportional mortality from this disease was recorded in Hackney, Bethnal Green, Stepney, Bermondsey, and Battersea. The 49 fatal cases of diphtheria showed a decline of 12 from the average number in the corresponding period of the five preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Kensington, Poplar, Southwark, Battersea, and Camberwell. The 166 deaths from whooping-cough were 46 in excess of the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, Fulham Chelsea, Shoreditch, Bethnal Green, and Poplar. Only nine deaths from "fever" were registered last month, against an average of 38 in the corresponding period of the five preceding years; of these nine deaths

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1907.

(*Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1907. | Notified Cases of Infectious Disease. | | | | | | | | | | | Deaths from Principal Infectious Diseases. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| LONDON .. ... ... ... ... ... ... | 4,758,218 | — | 2641 | 804 | — | 90 | 1 | 23 | 397 | 17 | 3973 | 8·7 | — | 219 | 71 | 49 | 166 | — | 9 | — | 76 | 590 | 1·3 | 5191 | 11·4 | 83 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... | 149,909 | — | 50 | 19 | — | 2 | — | — | 9 | — | 80 | 5·6 | — | 4 | 2 | — | 4 | — | — | — | 2 | 12 | 0·8 | 150 | 10·4 | 78 |
| Kensington ... ... ... ... ... ... | 181,842 | — | 48 | 30 | — | 1 | — | — | 16 | — | 95 | 5·4 | — | 6 | — | 3 | 6 | — | 1 | — | 3 | 19 | 1·1 | 206 | 11·8 | 102 |
| Hammersmith ... ... ... ... ... | 122,337 | — | 38 | 34 | — | 2 | — | 2 | 7 | 1 | 84 | 7·2 | — | — | 1 | 1 | 6 | — | — | — | 2 | 10 | 0·9 | 109 | 9·3 | 55 |
| Fulham ... ... ... ... ... ... ... | 166,749 | — | 37 | 34 | — | 6 | — | 2 | 12 | — | 91 | 5·7 | — | 8 | 1 | 2 | 8 | — | 1 | — | 5 | 25 | 1·6 | 174 | 10·9 | 85 |
| Chelsea ... ... ... ... ... ... ... | 74,857 | — | 14 | 15 | — | 1 | — | — | 6 | 1 | 37 | 5·2 | — | 11 | — | 1 | 6 | — | — | — | — | 18 | 2·5 | 96 | 13·4 | 139 |
| City of Westminster ... ... ... ... | 172,219 | — | 33 | 17 | — | 3 | — | — | 8 | — | 61 | 3·7 | — | 3 | 1 | — | 3 | — | — | — | 4 | 11 | 0·7 | 170 | 10·3 | 69 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone ... ... ... ... ... | 127,718 | — | 55 | 17 | — | 2 | — | 1 | 11 | 1 | 87 | 7·1 | — | 5 | 2 | 1 | 5 | — | — | — | 2 | 15 | 1·2 | 139 | 11·3 | 36 |
| Hampstead ... ... ... ... ... ... | 91,137 | — | 22 | 10 | — | 2 | — | — | 4 | — | 38 | 4·3 | — | 6 | — | — | 1 | — | — | — | 1 | 8 | 0·9 | 59 | 6·8 | 60 |
| St. Pancras ... ... ... ... ... ... | 236,753 | — | 90 | 30 | — | 3 | — | 1 | 27 | — | 151 | 6·7 | — | 12 | 4 | 2 | 8 | — | — | — | — | 26 | 1·1 | 246 | 10·8 | 88 |
| Islington ... ... ... ... ... ... ... | 347,017 | — | 108 | 51 | — | 10 | — | 1 | 29 | 4 | 203 | 6·1 | — | 24 | 6 | 2 | 9 | — | 1 | — | 8 | 50 | 1·5 | 384 | 11·5 | 81 |
| Stoke Newington ... ... ... ... ... | 53,613 | — | 20 | 6 | — | 2 | — | — | 1 | 1 | 30 | 5·8 | — | 1 | — | 1 | 1 | — | — | — | 1 | 4 | 0·8 | 44 | 8·6 | 123 |
| Hackney ... ... ... ... ... ... ... | 232,993 | — | 162 | 36 | — | 8 | — | — | 22 | 1 | 229 | 10·2 | — | 7 | 6 | 2 | 3 | — | 1 | — | 4 | 23 | 1·0 | 244 | 10·9 | 74 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn ... ... ... ... ... ... ... | 55,134 | — | 21 | 5 | — | 1 | — | 1 | 5 | — | 33 | 6·2 | — | 2 | 1 | — | 2 | — | — | — | 1 | 6 | 1·1 | 79 | 14·9 | 71 |
| Finsbury ... ... .. ... ... ... ... | 96,732 | — | 56 | 20 | — | 3 | — | — | 13 | — | 92 | 9·9 | — | 6 | — | — | 4 | — | — | — | 2 | 12 | 1·3 | 134 | 14·4 | 63 |
| City of London ... ... ... ... ... | 20,310 | — | 8 | 2 | — | — | — | — | — | — | 10 | 5·1 | — | — | — | — | — | — | — | — | — | — | — | 24 | 12·3 | — |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... | 115,662 | — | 65 | 15 | — | 2 | — | — | 16 | — | 98 | 8·8 | — | 10 | 1 | — | 10 | — | — | — | 8 | 29 | 2·6 | 175 | 15·8 | 114 |
| Bethnal Green ... ... ... ... ... | 130,831 | — | 141 | 27 | — | 2 | — | — | 14 | 1 | 185 | 14·7 | — | 8 | 6 | — | 8 | — | — | — | 1 | 23 | 1·8 | 169 | 13·5 | 107 |
| Stepney ... ... ... ... ... ... ... | 308,923 | — | 404 | 64 | — | 8 | — | 2 | 42 | — | 520 | 17·6 | — | 3 | 8 | 4 | 14 | — | 2 | — | 6 | 37 | 1·2 | 369 | 12·5 | 98 |
| Poplar ... ... ... ... ... ... ... | 171,086 | — | 121 | 38 | — | 2 | — | 1 | 19 | 1 | 182 | 11·1 | — | 7 | 1 | 7 | 14 | — | — | — | 2 | 31 | 1·9 | 241 | 14·7 | 116 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark ... ... ... ... ... ... | 209,781 | — | 179 | 49 | — | 7 | — | 2 | 21 | — | 258 | 12·8 | — | 28 | 4 | 3 | 3 | — | — | — | 7 | 45 | 2·2 | 283 | 14·1 | 99 |
| Bermondsey ... ... ... ... ... ... | 128,263 | — | 115 | 31 | — | 4 | — | — | 10 | 2 | 162 | 13·2 | — | 2 | 5 | 1 | 5 | — | 1 | — | 2 | 16 | 1·3 | 177 | 14·4 | 86 |
| Lambeth ... ... ... ... ... ... ... | 318,538 | — | 166 | 42 | — | 2 | 1 | 3 | 21 | 1 | 236 | 7·7 | — | 16 | 4 | 4 | 8 | — | 1 | — | 10 | 43 | 1·4 | 342 | 11·2 | 84 |
| Battersea ... ... ... ... ... ... ... | 181,736 | — | 100 | 25 | — | 1 | — | 1 | 15 | 3 | 145 | 8·3 | — | 16 | 4 | 3 | 7 | — | — | — | 1 | 31 | 1·8 | 179 | 10·3 | 85 |
| Wandsworth ... ... ... ... ... ... | 281,419 | — | 131 | 50 | — | 4 | — | 1 | 12 | — | 198 | 7·3 | — | 9 | 4 | 2 | 9 | — | 1 | — | — | 25 | 0·9 | 280 | 10·4 | 73 |
| Camberwell ... ... ... ... ... ... | 277,059 | — | 161 | 40 | — | 4 | — | 3 | 21 | — | 229 | 8·6 | — | 16 | 5 | 9 | 5 | — | — | — | 2 | 37 | 1·4 | 280 | 10·5 | 72 |
| Deptford ... ... ... ... ... ... ... | 116,510 | — | 95 | 23 | — | 6 | — | 1 | 13 | — | 138 | 12·4 | — | 5 | 2 | — | 5 | — | — | — | 2 | 14 | 1·3 | 116 | 10·4 | 75 |
| Greenwich ... ... ... ... ... ... | 107,222 | — | 68 | 34 | — | 1 | — | — | 8 | — | 111 | 10·8 | — | 2 | 1 | — | 4 | — | — | — | — | 7 | 0·7 | 95 | 9·2 | 68 |
| Lewisham ... ... ... ... ... ... | 152,532 | — | 35 | 25 | — | — | — | — | 3 | — | 63 | 4·3 | — | 1 | 2 | 1 | 4 | — | — | — | — | 8 | 0·5 | 122 | 8·3 | 63 |
| Woolwich ... ... ... ... ... ... ... | 129,336 | — | 98 | 15 | — | 1 | — | 1 | 12 | — | 127 | 10·2 | — | 1 | — | — | 4 | — | — | — | — | 5 | 0·4 | 105 | 8·5 | 69 |
| Port of London ... ... ... ... ... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

Including membranous croup.

two belonged to Stepney and one to each of seven other boroughs. The deaths from diarrhœa numbered 76 last month, against an average of 555 in the corresponding period of the five years 1902–06; the greatest proportional mortality from this disease occurred in Fulham, the City of Westminster, Islington, Shoreditch, Southwark, and Lambeth. In conclusion, it may be stated that the aggregate mortality from the principal infectious diseases in London last month was 30 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 83 per 1000. No death at this age was recorded in the City of London, while among the metropolitan boroughs the lowest rates of infant mortality were recorded in Hammersmith, St. Marylebone, Finsbury, and Lewisham; and the highest rates in Kensington, Chelsea, Stoke Newington, Shoreditch, Bethnal Green, and Poplar.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Jerome Barry has been placed on the Retired List.

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants are confirmed in that rank: Hugh E. Gotelee, John H. Spencer, Benjamin Johnson, William E. C. Lunn, Arthur H. Jacob, Clarence H. Denyer, Alexander D. Fraser, Archer Fortescue, Geoffrey Carlisle, Howard G. Gibson, Stephen Field, Frederick H. M. Chapman, Henry M. J. Perry, John L. Wood, Frederick T. Turner, Michael P. Leahy, William G. Aviss, John E. M. Boyd, Donald F. Mackenzie, Richard D. O'Connor, Owen R. McEwen, Malcolm O. Wilson, John du P. Langrishe, John C. Hart, Thomas H. Scott, Gerald F. Rudkin, Leopold A. A. Andrews, John H. Gurley, Alfred C. Elliott, William B. Purdon, Francis Casement, Edward M. Middleton, Vincent T. Carruthers, and Harold W. Farebrother.

Captain H. G. F. Stallard has joined at Aldershot for duty at the depôt and school of instruction and Captain A. H. Stafford and Lieutenant H. E. Gotelee have been posted to the Cambridge Hospital for duty. Lieutenant W. B. Purdon and Lieutenant J. C. Hart have also joined at Aldershot and been posted to the Connaught Hospital for duty.

Colonel Arthur W. P. Inman is placed on temporary half-pay on account of ill health (dated August 14th, 1907).

### VOLUNTEER CORPS.

*Rifle:* 3rd Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant-Colonel J. R. Essex is granted the honorary rank of Surgeon-Colonel (dated June 26th, 1907). 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Charles Botterill Baxter to be Surgeon-Lieutenant (dated July 1st, 1907).

### ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

4th or City of London Bearer Company: Captain A. C. Tunstall to be Major (dated July 25th, 1907).

### DEATHS IN THE SERVICES.

Major T. W. A Fullerton, I.M.S., Bengal, at Lucknow, on August 15th. He entered the service in 1895 and at the time of his death, which occurred from blood poisoning, he was surgeon to the hospital at Bahraich. He held the Kaisar-i-Hind gold medal for public service in India and two medals for service in two frontier campaigns.

Major H. F. Whitchurch, I.M.S., V.C., at Dharmsala, Punjab, India, on August 16th, at the age of 41 years. Major Whitchurch took part in the Lushai Expedition, including the relief of Changsil and Aigal (medal with clasp) and in the operations in Chitral in 1895 (mentioned in despatches and awarded medal with clasp and the Victoria Cross). The act of conspicuous bravery which obtained for him this distinction is officially described as follows. "During the sortie from Chitral Fort at the commencement of the siege Surgeon-Captain Whitchurch went to the assistance of Captain Baird, 24th Bengal Infantry, who was mortally wounded, and brought him back to the fort under a heavy fire from the enemy. Captain Baird was on the right of the fighting line and had only a small party of Gurkhas and men of the 4th Kashmir Rifles. He was wounded on the heights at a distance of a mile and a half from the fort. When Surgeon Captain Whitchurch proceeded to his rescue the enemy in great strength had broken through the fighting line; darkness had set in, ard Captain Baird, Surgeon-Captain Whitchurch, and the sepoys were completely isolated from assistance. Captain Baird was placed in a dooly by Surgeon-Captain Whitchurch, and the party then attempted to return to the fort. The Gurkhas bravely clung to the dooly until three were killed and a fourth was severely wounded. Surgeon-Captain Whitchurch then put Captain Baird upon his back and carried him some distance with heroic courage and resolution. The little party kept diminishing in numbers, being fired at the whole way. On one or two occasions Surgeon-Captain Whitchurch was obliged to charge walls, from behind which the enemy kept up an incessant fire. At one place particularly the whole party was in imminent danger of being cut up, having been surrounded by the enemy. Surgeon-Captain Whitchurch gallantly rushed the position and eventually succeeded in getting Captain Baird and the sepoys into the fort. Nearly all the party were wounded, Captain Baird receiving two additional wounds before reaching the fort." Major Whitchurch was also engaged in the campaign on the North-West Frontier of India in 1897–98, taking part in the defence of Malakand, the relief of Chakdara, the action at Landakai, and the operations in Bajaur and in the Mamund country (mentioned in despatches and two clasps). He also took part in the operations in China in 1900 (mentioned in despatches and awarded medal with clasp).

### MOIR MEMORIAL FUND.

The following gentlemen have, at the invitation of the council of the Medical College, Calcutta, agreed to serve as members of a committee, with power to add to its number, for the purpose of raising a memorial to the late Major D. M. Moir, I.M.S., professor of anatomy at the Medical College, Calcutta, who died from septicæmia contracted in the execution of his public duties. Subscriptions are invited from his friends and admirers and may be sent to the treasurer. It is hoped that sufficient money will be received to found a prize or to endow a bed, after providing for a tablet and portrait in the College Hospital. Lieutenant-Colonel F. J. Drury, I.M.S., President; Major F. J. Maynard, I.M.S.; Major R. Bird, I.M.S., C.I.E.; Major C. R. Stevens, I M.S.; Major W. J. Buchanan, I.M.S.; Rai Bahadur Dr. Koylash Chandra Bose, C.I.E.; Rai Bahadur Dr. Devendra Nath Roy; Dr. Suresh P. Sarbadhicary, treasurer, 79/1, Ahmerst-street, Calcutta; Dr. Dwijendra Nath Moitra; Assistant-Surgeon Jotish Ch. Mustafi; and Captain F. P. Connor, I.M.S., and Rai Bahadur Dr. Hira Lal Basu, honorary secretaries, Medical College.

### THE NEW DRESSING PACKET FOR THE GERMAN ARMY.

A new packet containing material for the first dressing of a wounded soldier has been served out in the German army. It weighs 25 grammes and measures, in centimetres, 7·4 by 4·5 by 1·9. The envelope, made of impermeable linen, is secured by a knotted string which has to be severed before the packet can be opened. Instructions to this effect are printed on the outside. Each envelope incloses a linen bandage impregnated with corrosive sublimate, four metres long by seven centimetres wide. It is readily divisible into three segments, and midway on each segment there is affixed a compress or pad for application to the wound. The bandage itself is white or grey, but the pads are red. On the inner flap of the envelope there are the following instructions:—

> On no account must the red pad or the wound be touched by the fingers of the operator. Taking hold of the segment of bandage with both hands at the points marked "here" he should stretch it firmly and apply the pad accurately over the wounded part, finishing the process by winding the two ends of the bandage round the injured site where they should be secured by a knot.

A new diagnosis card has also been issued for use on the field of battle. It is about 5¼ inches long by 3½ inches broad, and is meant to be attached to "the second button of the wounded man's tunic, cloak, or shirt." Each card has two red bands which can easily be torn off. If the patient can walk the bands must be removed; should he require transport one band must be left, but should he be considered "non-transportable" both the bands must remain intact. In one side of the card spaces are left for replies to the following questions: Name, rank, and corps? Wound or disease? Treatment given? Elastic band or tube, where applied? Stimulants administered, time, amount? On the other side the surgeon should add any further particulars he may deem necessary and sign his name. The cards are solely for the use of medical officers.

Surgeon-Lieutenant-Colonel C. R. Kilkelly, C.M.G., house governor and medical superintendent, Officers' Convalescent Home, Osborne, has been appointed a Member of the Fourth Class of the Royal Victorian Order.

# Correspondence.

"Audi alteram partem."

## THE NEW ADVANCE AT THE INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

*To the Editors of* THE LANCET.

SIRS,—As a slightly incorrect statement was published it would be as well to explain in some detail the important new move in the matter of school hygiene which was taken at the closing meeting of the recent International Congress.

The permanent international committee, consisting of about 60 members selected from almost every country, has hitherto only met during congresses. Arising out of the question of whether it would not be a proper thing to establish a bureau, with a permanent staff, library and museum, and so on, in some central but neutral spot, such as a Swiss or Dutch town, it was decided, as explained by Dr. Mathieu, Dr. Burgerstein, and Dr. Kerr, that it would probably lead to greater progress if such bureau was not localised, but if each country had its own centre for the diffusion of knowledge and to act as a clearing house in the matter of school hygiene statistics, laws, and regulations. Finally, to supervise in scientific matters and generally to do all that is possible at all times or places to forward the human interests which are bound up in the special lines of knowledge included in school hygiene the international committee has formed a small council.

This council has all the powers of an ordinary committee. It can form subcommittees of experts on special inquiries. The usual committee procedure is to sit round a table and discuss matters, but this council will deal with the various subjects that arise, submitting the different topics by correspondence, collating the answers, and finally making pronouncements in urgent matters after a meeting of the council.

It is obvious that for efficiency such council should be small and yet have in it elements to secure permanence and at the same time possibilities of slow but constant change. This has been done by deciding that it shall consist of the president of the past congress, the president of the congress which has just been held, and the president of the next congress. Nine other members are to be elected, of whom three are to be from the country where the congress was last held and three from the country where it will be held next, three being selected from other lands.

Certain matters, for instance, will almost at once come under the consideration of this council. Such might be quoted as :—

The question of how medical inspection of schools can best be carried out with the maximum of efficiency and minimum of cost.

The question of how far the laws of health can best be imparted to the coming generation so that later they will know how to care for themselves and those dependent on them.

The best systems or methods of physical training for both sexes at various ages.

The feeding of children requiring proper nutrition, so that it shall be done without developing pauperism and with regard to those upon whom the cost falls.

These four matters are being dealt with practically in a great variety of ways, and this council should be able to collect and analyse known facts to show which methods are best for any town or State.

It is obvious that information thus digested will have a very great value politically as well as educationally, and this council may in time come to be officially regarded as quite analogous in matters of school hygiene to that other congress of peace now in session at the Hague.

Yours faithfully,
LAUDER BRUNTON,
President of the Second International Congress on School Hygiene.
JAMES KERR,
E. WHITE WALLIS,
Honorary General Secretaries.

## SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.

*To the Editors of* THE LANCET.

SIRS,—Dr. J. C. Bowie, in his letter in your issue of August 3rd, p. 318, seems to desire to draw me into a discussion on the nature and methods of measurement of high-frequency currents rather than to make an attempt to criticise my records of the physiological effects of these currents in disease. He propounds some electrical problems which would be interesting if anyone were able to solve them, but which are apt to draw the attention of your readers away from the subject which I wished in my paper to direct their attention to. The problem he asks me to solve, regarding the wattage I am able to obtain, is a puzzle to me as well as to him. The only possible answer meantime is, I suspect, that the term wattage can hardly, with our present knowledge, be applied to high-frequency, so-called, currents. His statements as to the action of these currents on the human body are evidently based on his experience of the ordinary relatively low-tension currents. When we come to speak of high potential and high-frequency currents, however, I think the time has passed for anyone to say what might not be safely applied to the body. Professor D'Arsonval, indeed, is said to have passed a current of three ampères into his body in circumstances where the potential must have been terrific, and with, it is said, no inconvenience. Whilst I should not perhaps have the courage to do this, what right have I to say that I do not believe it to be possible ?

It is granted by physicists and is a matter of daily observation that the potential of these currents is enormous ; but if Dr. Bowie is familiar with this mode of treatment he should know that when a "current" of 500 milliampères is spoken of it is not meant that anyone can say exactly what this actually means, only that it is the heat equivalent of an ordinary galvanic current of this amount, and that to this extent it corresponds to a current of that amount. If Dr. Bowie can say exactly what it does mean more fully most of us, electricians and electro-therapeutists, will be grateful to him ; but this, though most interesting, has little to do with the matter at present in hand. When we speak of 500 milliampères as registered by the thermic milliampèremeter we speak in terms quite intelligible to all workers in this field, since we speak of a standard by which may be tested the validity of my records, because we are using the same instrument and speaking the same language. But, although I have generally, if not always, indicated the amount of current as thus measured which I was employing during my experiments, I have, by intention, avoided going into the question of the different physiological action of differing doses, leaving this and many other points for future study by myself and by others as I have before stated. My investigations since the publication of my paper in THE LANCET are more in the direction of the therapeutic possibilities of varying degrees of frequency of these currents. This also may prove a fruitful field of inquiry.

Dr. Bowie complains of my failing to take note of the importance of voltage in my records. If he refers to No. 1 of the "Questions worthy of consideration as to future investigations," he will see that he has made a mistake here. I know of no previous experiments in this direction. I am uncertain even if anyone had considered this question to any practical extent before I referred to it myself, and so I am at a loss to know why he should think that I inquired to be informed as to the importance of voltage when investigating the physiological effects of these currents in disease. Let me repeat that my object in my paper was to prove mainly that high-frequency currents had a varying effect in disease, not an invariable one, as in health ; nay, more, an effect not only differing according to the nature of the disease but differing with the varying condition and environment—mental and physical—of the patient at the time of administration. This is surely sufficiently important and sufficiently in advance of previous researches to make it worthy of criticism without spending time upon first trying to solve some electrical problems associated with high-frequency currents.

Dr. Bowie says that the consideration of five factors is essential before we can move in the matter—namely, voltage, amperage, wattage, time, and frequency. I have already referred to voltage, ampèrage, and frequency, and I have generally, if not always, stated the time; but why wattage as a fifth factor if we already have the voltage and the ampèrage? and what does Dr. Bowie mean by saying that wattage must be based on ampèrage since it is the product of voltage and ampèrage? Again, in auto-condensation, which is the mode of application, I have been considering what authority has Dr. Bowie for saying that little or no current passes through the body, though an apparently high current was being registered in the milliampèremeter in series with the body? What means does he suggest for testing this? And let me remind him that no one has said that any current passes through the body. The current is not passing through but passing into and out of the body, and I have shown in my paper that the current loses force and quantity on its way into the body. It is a current in the meter but a capacity in the body. He evidently finds it difficult to get low-tension phenomena out of his mind. We are not dealing with closed circuits here. This very error, however, ought to have prevented him from saying that a body through which a current is passing may be getting almost no current regardless of the current which a milliampèremeter in series with it was registering. When I come to his remarks on the drop of potential observed by me when carrying out my experiments I at first hope that we are now on common ground; and, since I attach considerable importance to this part of my thesis, I should have been pleased to get from him some practical criticism of it. Instead of this, however, what he gives me is a mere theoretical contradiction. So I do join issue with him when he "respectfully submits that this is impossible." Is it possible that he has made this statement without having tried the experiment for himself?

Dr. Bowie states that "no relation exists between the resistance of the body and the tension of the current on the spinthermeter." I have stated as a fact that, whilst this auto-condensation current is being applied, the difference of potential between, say, the hand and the axilla may exceed the equivalent of a spark-gap of two millimetres. Has Dr. Bowie tested this which I have declared to be a fact? If not, he surely might have done so and given us the benefit of his experience. That this difference of potential does not arise from ohmic resistance alone is, I think, true; but I should like to have Dr. Bowie's explanation of it if "resistance bears no relation to the potential difference." Does he think this resistance is a small matter? I have measured it with dry metallic electrodes as used in auto-condensation and found it to be vastly greater than I had suspected to be possible. I fear that much of what follows in Dr. Bowie's letter is too involved for me to be able to follow it. Either he has failed to grasp my meaning or I fail to grasp his. Let me say again, however, that I would rather he had stated not what he thought should be but what he really found to be the case. This is especially to be desired where he disputes the accuracy of my statement as to the fall of potential due to the passage of the current along a copper wire 25 feet long and of low ohmic resistance. He fails to see that mere ohmic resistance, unless enormous in amount, exercises practically no control on these high potential oscillations. Whether distance or the necessary bending of the wire on itself on account of the limited space in my room is the cause of the fall of potential I know not—possibly both may be; but certainly ohmic resistance has here nothing to do with it. Surely Dr. Bowie fails to see that he is giving himself away when he says: "Further, it is necessary that the electrodes be kept at the normal temperature of the body, otherwise no accurate records can be made, and this is particularly the case when observations are being taken regarding the increase of temperature due to these currents"; for if the electrodes had first been warmed to the temperature of the hands the rise in the temperature of the forearm would have been just so much greater, and thus my contention would have been strengthened. My object in recording the temperature of the room and delaying the application of the current in these thermic experiments till from 30 to 40 minutes had elapsed after the patient had been placed on the couch was to secure as much accuracy as possible. Dr. Bowie attempts to reply to my question No. 1 in a very offhand manner. But when he says that his "answer to this is, as the voltage is increased a corresponding fall in current will take place," he is evidently failing to note what I said on this point—namely, that I found from experiment that "the same quantity of current is obtainable from the same apparatus by a different arrangement of solenoid and spark gap, though there might be a different amount of potential difference to earth."

If Dr. Bowie is prepared to apply to the body 400 watts, made up of five ampères at a voltage of 80, all I have to say is that I should not like to be the victim of this experiment. But how, I may ask, is he to obtain a current of five ampères through the body from a voltage of 80 or 100, since, as in tho Apostoli treatment, it is difficult to obtain a twentieth part of this current from a voltage not much less? I am thus prepared to challenge his statement, though I am not prepared to have my "body subjected" to the trial, even with the reward of setting the question at rest. Finally, is Dr. Bowie willing to join the scientific investigation committee which I have proposed and which he says he approves of? I trust he is—that is, of course, on the understanding that he has already done some work in high-frequency treatment. In that event some real gain may come out of it.

I am, Sirs, yours faithfully,

Glasgow, August 10th, 1907. SAMUEL SLOAN.

## NATIONAL LENDING LIBRARY FOR THE BLIND.

*To the Editors of* THE LANCET.

SIRS,—Will you kindly insert an appeal on behalf of the above most useful and much needed institution as it is in urgent need of funds to carry on the work? It is practically the only lending library for the blind for the whole of Great Britain. There are 900 direct readers, and about 900 more are reached through various institutions, to which books are sent. There are 40,000 blind persons in Britain! These could all be reached had the library a larger income. Each volume costs 15*s.* to produce. Owing to the bulkiness of the volumes, as a result of the raised type, the space needed for storage is great, and a new building is absolutely required in which the 8500 volumes now in stock can be properly arranged, quickly found, and despatched through the post at "special rates," thanks to the kindness of the Hon. Sydney Buxton, Postmaster-General. The books are printed, some in the "Moon type," the rest in the "Braille type." An annual subscription of two guineas entitles a subscriber to nominate a poor reader who without the solace of books leads a sadly pitiful life in his sightless condition. We need £200 per annum more in subscriptions to carry on the work and far more than that su m in donations to enlarge the necessary premises and extend the usefulness of the lending library. Would that some wealthy man or woman might be moved by pity to purchase a site, build really suitable premises, and provide a fund for the maintenance of the building. The library was opened in 1882 by the late Mrs. Dow and the late Miss Martha Arnold, and was incorporated as a "charitable institution" in 1898. H.R.H. Princess Louise, Duchess of Argyll, is President, the patrons are the Bishop of London, the Bishop of Stepney, the Bishop of Southwark, the Duchess of Marlborough, the Earl of Kilmorey, and other distinguished persons. Full details concerning the library may be obtained from the Secretary, Miss E. W. Austin, National Lending Library for the Blind, 125, Queen's-road, Bayswater, W., to whom cheques and postal orders may be sent.

I am, Sirs, your obliged servant,

August 19th, 1907. JANE B. WHITE.

## A CASE OF PYREXIA OF UNCERTAIN ORIGIN.

*To the Editors of* THE LANCET.

SIRS,—Can you find room for the account of the following case in order that members of the profession may offer suggestions as regards diagnosis?

A female child, three and a half years old, was brought to my consulting-room on the morning of August 6th on account of "feverishness" during the night. I examined the case carefully and, apart from a temperature of 100° F., could find no physical signs of disease in any of the organs. The throat was clear but the bowels were confined. I prescribed grain doses of calomel in the form of sweets and saw the patient again in the evening of the same day. The temperature had then risen to 101°. I gave her a saline mixture and saw her again two mornings later (August 8th), when the temperature was again 100°, and as the bowels had still not been opened I ordered a little carbonate of magnesia. On the 9th I saw her again, when the temperature had risen to 101° again, and as the bowels were still confined I ordered grain doses of hydrargyrum cum creta. On the 10th the temperature rose to 102°. I began to suspect typhoid fever and treated her on those lines. I ordered an enema and the day after—viz., August 11th—the child had a good opening and the temperature fell to normal. I examined the stools and although they looked somewhat pea-soupy in colour they were certainly not distinctive and not very offensive.

Although the temperature fell to normal and the child seemed much better I again made a very careful examination, still bearing in mind a possibility of typhoid fever (on account of the stools and the somewhat apathetic appearance of the child), but could not find any trace of that disease. The spleen was not palpable nor was its percussion area enlarged, and there was no tenderness in that region The tongue was certainly not characteristic and the pulse was not dicrotic. There were no rose spots to be seen; although it being only the sixth day of illness it was perhaps still somewhat too early to expect them. There was slight congestion of the lungs and I therefore suspected a hidden pneumonia or acute miliary tuberculosis, although the breathing was not of the pneumonic type and there were no other symptoms or signs to suggest any lung mischief. The child complained of some headache, but there were no other signs whatsoever of any cerebral or meningeal trouble. There was no squint, no retraction of the head, no Kernig's sign, and an ophthalmoscopic examination gave an entirely negative result. The ears and nose were examined, but absolutely nothing abnormal could be discovered. The apathetic appearance and somewhat drowsy condition of the child began to worry me a little, and therefore, when I found on the next day, the 12th, that the temperature had again risen to 102°, I called into consultation Dr. Cecil Wall. In spite of the most careful, prolonged, and very searching examination no definite conclusion could be arrived at, all signs being absolutely negative, although this was already the seventh day of the illness. It was decided to watch the case till the tenth day and that I should then examine the blood for Widal's reaction. The consultation was held at 1 P.M. and at 4 P.M. I saw the little patient again, when her face was extremely flushed, her lips were tremulous, and she was plucking at the bed-clothes. The temperature was then 106·4°. I immediately telephoned to the consultant to come to see the child again, but before he arrived the patient died from collapse. No post-mortem examination was made.

The case presents two points of interest. Firstly, What could have been its nature? Secondly, assuming even that it was typhoid fever why should the child have died so suddenly from hyperpyrexia and collapse when only a few hours ago there appeared to be every prospect of a good recovery? I am, Sirs, yours faithfully,

M. FELDMAN.

London, E., August 16th, 1907.

## AN ASSOCIATION OF SHIP SURGEONS.

*To the Editors of* THE LANCET.

SIRS,—In answer to many letters which I received concerning my letter in your issue of August 17th may I be allowed further space to say on behalf of the B.S.S.A. (British Ship Surgeons Association) which is being formed that its aims are:—Firstly, to improve the "status" of ship surgeons. Secondly, to issue a ship surgeons' gazette monthly, in which will be published "dissertations" on diseases peculiar to sea-going persons. Members will be expressly invited to narrate their experiences and views concerning the treatment of such affections as sea-sickness, &c. A special article on "Marine Hygiene" will appear in each issue. Thirdly, to provide a medium for advertisement of "vacant posts" and "posts wanted."

The way in which it is proposed to improve the "status" of medical officers will be discussed at length later, when it is hoped that members will forward suggestions on the proposition in question. That there is need for this movement there can be very little doubt, judging from the "pay" of ships' medical officers, which does not compare favourably with that of surgeons holding equally responsible positions ashore. A committee will be formed of 12 past and present ship surgeons, six "past" and six "present." The six senior surgeons of the leading shipping companies in Great Britain will be asked to stand as the six present members.

The joint positions of honorary secretary and treasurer will be filled *pro tem.* by myself until it is convenient for the committee to fill the "posts." The annual subscription (to include monthly gazette) is proposed to be 10*s.* 6*d.* per member, which, however, is not to be forwarded until further notice. It is hoped that all medical men eligible for membership will come forward and render all the assistance possible in the formation of this much needed association. Applications for membership and other communications will be gratefully received by

Yours faithfully,

G. METCALFE-SHARPE,

Late Surgeon P. and O. and Cunard Steamship Companies.

Angram Hospital, Middlesmoor, Leeds, August 19th, 1907.

## THE TREATMENT OF TUBERCULOSIS AND LEPROSY.

*To the Editors of* THE LANCET.

SIRS,—In a preliminary note on the Successful Treatment of Tuberculosis and Leprosy (published in THE LANCET of April 13th and 20th) I suggested the possibility of converting toxins into antitoxins by oxidising bacterial products with the help of tannic acid and the natural vegetable ferments—oxydases, &c. Will you permit me to draw your attention and the attention of your readers to an abstract of a paper which appeared in the *British Medical Journal* of July 6th? I refer to the Epitome, p. 4, No. 11, "The Artificial Preparation of Therapeutic Serums." It would appear that Czajkowski successfully carried out the suggestion I made, only using the oxidising ferments of the liver and spleen in place of vegetable ferments.

I am, Sirs, yours faithfully,

S. F. WERNICH.

Somerset Strand, Cape Colony, July 29th, 1907.

## THE TREATMENT OF INEBRIETY.

*To the Editors of* THE LANCET.

SIRS,—I send for publication an account of my experience as medical superintendent of the Dadson Nursing Home for Inebriates in Norwich which has been in existence for just two years.

The treatment I have adopted has been a short one of usually four weeks and the results obtained on both men and women have been highly satisfactory. Statistics in a matter of this sort are of no great value but I take the first 50 cases, all of which were treated over a year ago and most of whom have been traced. These cases were all treated on somewhat similar lines and an account of one typical case will show the system which I think should have the consideration of those who have cases of chronic alcoholism amongst their patients.

A man, aged 47 years, entered the home on August 3rd, 1905; he had been a chronic alcoholic for years and had a distinct family history of hereditary alcoholism. I allowed him to have a certain amount of his favourite beverage, as he was drinking heavily on admission, and started him at once on one teaspoonful dose with about two ounces of water added, every two hours from 9 A.M. till 9 P.M., of the following tonic: Ammon. chlor., gr. i.; aloin, gr. ii.; tr. cinchon. co., ʒ iii.; viburnum cordial, ℥ i. Being in a shaky condition I found that an occasional dose of a mixture composed of ammon. chlor., tinct. cinchon. co., viburnum cordial, tr. capsici, and ext. kolæ liq. was very beneficial. I also gave him four times a day at intervals of four hours five minims of the following hypodermic injection: Daturinæ sulph., gr. i.; strych. sulph., gr. ii.; acid. boric., gr. v.; aq. dist., ℥ iv. During the first ten days I increased the injection gradually to double this quantity, no unfavourable symptoms being present. I am of opinion that datur. sulph. is much better than atropine, patients suffering far less from their eyes and complaining less of dryness and parched throat.

The injections and tonics were continued for three weeks and during the fourth week of treatment I reduced the number of tonics and number and quantity of injections, until at the end of the fourth week, i.e., the last day of treatment, he received only two doses of tonic and one five-minim dose of injection. Insomnia was treated by means of veronal.

This man had perfect freedom during his stay in the home. After a few days his desire for alcoholic beverages disappeared and by the end of the first week he was practically normal. His brain began to be active and he was anxious to have occupation. He went straight back to his old work and surroundings and is at the present time doing well. In private practice it is difficult to treat chronic alcoholism on these lines because the mental advantages which result from the surroundings of a special home are an essential factor in bringing about the desired results.

The following statement appeared in a medical journal which I fully confirm: "That no treatment by drugs alone can be expected to yield permanent results, and in every case the general condition of the patient must be treated by general means, by simple dietry, by tonics, and by treatment of any physical lesion, while his mental and moral fibre is built up by judicious management and sympathetic influences." I am, Sirs, yours faithfully,

Norwich. J. M. G. BREMNER, M.B. Aberd.

## A CASE OF SUPERNUMERARY DIGITS.

*To the Editors of* THE LANCET.

SIRS,—The report of a case in THE LANCET of July 20th by Dr. W. H. W. Attlee recalls a case under me in 1902. In a newly born male infant I found that there was an extra little toe on each foot just as perfectly formed as the toe which rightfully belonged there and growing from a point over the metatarso-phalangeal joint. On the left hand was a perfectly formed little finger growing from a point on the ulnar side over the metacarpo-phalangeal joint, while on the right hand, in a similar position, was a jelly-like mass hanging by a mere thread of tissue which was undoubtedly intending to become a perfect digit at some time. I removed this latter mass of tissue by a mere twisting of its small pedicle. But although this was interesting enough I was astonished to find that of four other children in the home, two girls and two boys, each of the boys had an extra little toe on each foot and had been allowed to grow up to that date without any interference with these extra digits. There were no extra digits on their hands and the girls had no deformity whatever. Neither the father nor the mother was deformed in any way, nor were they related in any way before marriage.

I am, Sirs, yours faithfully,
OSWALD C. WITHROW, M.B. Toronto,
M.R.C.S. Eng., L.R.C.P. Lond.

Fort William, Ontario, Canada, August 10th, 1907.

## CHLOROFORM ADMINISTRATION: THE "OPEN METHOD" *v.* APPARATUS.

*To the Editors of* THE LANCET.

SIRS,—In the discussion upon chloroform administration at the British Association meeting at Leicester there are two points upon which I should like to express dissent. First, Is not the danger of an under dose of chloroform a dangerous position to adopt? The explanation which Dr. Hewitt gave amounted to the fact that irregular and obstructive breathing occurred, but is not this seen in many cases in the first stage, to be met by increased caution, anxiety, call it what you will? Secondly, with regard to the "open method." Chloroform administration is so entirely one of judgment. Each case has to be treated upon its own merits. Cases differ so much in their susceptibility. The patient, not the apparatus, should be the only thing observed. With apparatus a certain percentage of chloroform to a patient, whose peculiarities, &c., are very largely an unknown quantity; with the open method an uncertain percentage is given. Directly the patient is found to be "going under" too quickly, or to present unfavourable symptoms, and when he is sufficiently under chloroform, the towel or flannel is at once removed from the patient's face and only pure air inspired; this, for quite a short time, or longer, according to the judgment of the administrator.

I am, Sirs, yours faithfully,

Chester, August 12th, 1907. HENRY W. KING.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

### *The Launceston (Cornwall) Board of Guardians and Vaccination Fees.*

AT a meeting of the Launceston board of guardians, held on August 12th, it was reported that the sub-committee which had been appointed to consider the question of the vaccination fees had conferred with the public vaccinators upon the subject, but the medical men were unanimous in declining to accept the fee of 3*s.* 6*d.* offered by the guardians. After some discussion it was decided that the public vaccinators, if they still refused to accept the reduced fees, should be given 28 days' notice to terminate their contracts.

### *The Sewage of Bath.*

In a report to the Bath sewage disposal committee Dr. H. Maclean Wilson (chief inspector of the West Riding Rivers Board) expressed the opinion that the question of sewage disposal in Bath offers no special difficulty, as the sewage must be pumped, and can easily be raised to such a level as will permit of any method of treatment. The report adds that the proposed site at Saltford, about midway between Bristol and Bath, is in most respects an excellent one for sewage works, and the works would probably be less costly than in many cases, because of the availability of materials and the ease of carriage to the site.

### *The Chippenham Board of Guardians and the Local Government Board.*

At a meeting of the Chippenham board of guardians held on August 14th it was reported that the Local Government Board had written stating that after further consideration it must adhere to its previous decision, that as there was now a qualified medical practitioner residing in the district it could not consent to the continued employment of a non-resident medical officer beyond Dec. 25th next.

### *Proposed Cottage Hospital for Neath.*

When a proposal was made about four years ago to establish a cottage hospital in Neath the scheme was opposed on the ground that the needs of the district were fully served by the hospital at Swansea. This view is not held by so many of the inhabitants of the town as was formerly the case, so that there is every possibility of a small hospital being established in Neath. In 1904 a sum of £2000 was given towards a hospital fund, one half to be used for building and the remainder to be invested. A further £300 have been subscribed and there ought to be no difficulty in a town of 15,000 inhabitants in obtaining the amount necessary to erect a building to suffice for, say, six patients. Wherever similar institutions have been established in other industrial centres in South Wales their usefulness has at once been appreciated and funds for their support have been readily obtained.

### *Illegitimacy in the Rhondda Valleys.*

In his recently issued annual report the medical officer of health of the Rhondda valleys (Dr. J. D. Jenkins) gives the amount of illegitimacy as it should be stated—namely, in proportion to the number of unmarried and widowed women at conceptive ages. There were 101 illegitimate births in the district during 1906, a number equal to 10·5 per 1000 unmarried women and widows living between 15 and 45 years. The proportion in England and Wales in 1905 was 8·2 per 1000. The infantile mortality rate during 1906 in the Rhondda was equal to 327 per 1000 illegitimate births compared with 171 per 1000 in the case of legitimate births and deaths.

### *Overcrowded and Insanitary Pembrokeshire School.*

Instances of overcrowding in some of the public elementary schools in South Wales have been frequently published, but it is to be hoped that the conditions reported by a committee of the Pembrokeshire Education Authority as having been found in a school at Haking, near Haverfordwest, do not exist in many other schools. The average attendance was 175, but there was seating accommodation for only 108, so that many of the children had no desks or seats and had to sit on the floor. There was no room for the classes to stand and the five teachers taught in the sound of each other's voices. The sanitary offices were said to be in a filthy condition and the walls of the school-rooms were so damp that the inside covering was peeling off.

### *Medical Officer of Health of Monmouthshire.*

The Monmouthshire county council has at last decided to appoint a county medical officer of health. At the meeting of the council at which this decision was arrived at it was resolved to ask the Local Government Board not to press for the appointment of a joint medical officer of health for certain colliery districts in the western part of the county, and it was further decided not to make the appointment of a county officer until the decision of the Board on this question had been received. There was an evident disposition upon the part of some members of the council to make the appointment of a county officer conditional upon the retention of the part-time medical officers in the western districts, although one very prominent member said that in his experience he had seldom found medical officers of health who were independent of the local authorities.

### *Typhoid Fever in Winchcombe in 1906.*

The medical officer of health of Gloucestershire, Dr. J. Middleton Martin, comments in his annual report upon the outbreak of typhoid fever which occurred on Cleeve-hill in the Winchcombe rural district in the autumn of 1906. There were 39 persons attacked and all the affected houses were supplied with water from two neighbouring sources which were contaminated about the same time. "The story of this outbreak," says Dr. Martin, "is all the more to be deplored, because it ought never to have occurred had attention been given to reiterated warnings."

August 20th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Proposed Testimonial to Mr. John Carswell.*

A MEETING has been called by the Lord Provost of Glasgow to consider the desirability of expressing in some tangible manner the sympathy felt for Mr. Carswell in connexion with the recent distressing incident, when he was shot at and seriously injured in the public streets by a man whom he had certified insane some time previously. The meeting was well attended and it was agreed that an attempt should be made to raise £500 by subscription for presentation to Mr. Carswell. A committee was formed, of which the Lord Provost was appointed convener, Dr. J. Crawford Renton sub-convener, and Mr. Nicol, City Chamberlain, honorary treasurer. The sum of over £60 was subscribed at the meeting.

### *Enteric Fever at Peterhead.*

The total number of cases of enteric fever notified so far since the commencement of the outbreak amounts to 340. Of these 147 have been treated in the hospital and the remainder at home. During the last week 57 cases have been discharged as well and no deaths have occurred. The number of cases notified during the past week has been 16. It is now estimated that out of the total number of cases 180 patients have fully recovered. At a monthly meeting of the Peterhead town council held recently it was agreed to provide hospital accommodation, if necessary, for fever patients from the coastguard buildings and from the Admiralty works, on the same terms as the council is charged for town's patients at Strachen Hospital. At a meeting of the public health committee, held on August 8th, the local medical practitioners were asked to attend for the purpose of making any practical suggestions with a view of an abatement of the epidemic, and the following recommendations were adopted:—

1. That every person suffering from the disease who is without proper lodging or accommodatton, or is so lodged that proper precautions cannot be taken for preventing the spread of the disease, should be removed to and detained in hospital so long as he continues in an infected condition.
2. That bi-weekly analyses of the water be taken.
3. That all bedding, clothing, or articles which have been exposed to infection shall be taken to the hospital for the purpose of disinfection.
4. That the services of an expert be obtained for the guidance of the town council, and that Dr. Matthew Hay, medical officer of health, Aberdeen, be appointed.

These recommendations were approved of at the Council meeting.

### *Nairn Town and County Hospital.*

The annual meeting of the Nairn Town and County Hospital was held on August 15th. The medical officer reported that 101 cases had been under treatment during the year. Of these 66 were cured, 19 were relieved, eight died, and eight remained in hospital. 47 out-patients received treatment. The new hospital, which was formally opened on August 15th by the Earl Cawdor, has now been successfully completed. The total cost of the hospital was £4721 11*s.* 2*d.* Towards this Mr. Mann had gifted the sum of £4000, while the free proceeds of the bazaar amounted to £1408 19*s.* 1*d.*

August 20th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Tuberculosis in Ireland.*

THE Registrar-General of Ireland, in his annual report for 1906, points out that while in England the rate for all forms of tuberculous disease has declined from 3·3 per 1000 in 1864 to 1·6 per 1000 in 1905, and in Scotland from 3·6 per 1000 in 1864 to 2·1 per 1000 in 1905, it has in Ireland risen from 2·4 per 1000 in 1864 to 2·9 in 1904 and to 2·7 per 1000 in 1905 and 1906. A decline from 2·9 per 1000 in 1904 for all forms of tuberculous disease to 2·7 per 1000 in 1905 and 1906 is something, but not much. Out of a total of 74,417 deaths registered in Ireland in 1906 no fewer than 11,756, or 15·8 per cent., were due to tuberculous disease. Of the total number of 11,756 deaths the number dying from phthisis (pulmonary tuberculosis) was 8933. Of this total 1072 died from the age of 15 to 20 years, the deaths from 20 to 25 years numbered 1444, and from 35 to 45 years they numbered 1557. The number given as dying between 25 and 35 years is 2573 (1292 males and 1281 females). It is little wonder that the Registrar-General says that, comparatively speaking, Irish people are not alive to the dangers which threaten them.

### *Queen's College, Belfast.*

It will be recollected that Sir Donald Currie gave £20,000 to the equipment fund of Queen's College, Belfast, provided a similar sum was subscribed, which was done, and the college thus benefited by £40,000; he also offered, if the students would try to raise a sum sufficient to purchase an athletic field, to be responsible for a fourth of it. The amount aimed at was £5000, but owing to most inclement weather a bazaar in aid of the fund did not succeed so well financially as was hoped. However, Sir Donald Currie, on hearing this, most generously sent last week a cheque for £2000 to pay off the amount required to complete the £5000. This splendid act of generosity has given the most profound satisfaction in Belfast circles. At the request of the authorities of Queen's College Lord Kelvin has kindly consented to come over to Belfast for the purpose of opening the new buildings which are to be devoted to scientific research and teaching. The ceremony is to take place on Sept. 20th.

### *Health of Belfast.*

For the week ended August 10th 20 cases of infectious disease were notified in Belfast: four of typhoid fever, two of scarlet fever, four of simple continued fever (whatever disease this is), one of diphtheria, four of erysipelas, and five of cerebro-spinal fever. This number is less than that of the previous two weeks which were 27 and 32. There is an increase of two in the case of cerebro-spinal meningitis. The death-rate was low—14·6. There were three deaths from cerebro-spinal fever.

### *Alleged Pollution at Stoneyford.*

The question of the pollution at Stoneyford, one of the Belfast water catchment areas, came before the Lisburn Rural Council on August 17th, when the solicitor of the council reported that by the instructions of the council, in company with Mr. J. Midgley-Taylor, C.E., London, and Mr. R. Best, barrister-at-law, he visited the Forked-Bride filter-beds to inspect the works and the grievances from which the people of the district alleged they were suffering. The caretaker at the filter-beds refused them admittance on the ground that they had no order. They were then obliged to make a circuit round the farms and through the meadows adjoining, with the caretaker in close attendance. In the opinion of the solicitor, the conduct of the Belfast Water Commissioners was "both stupid and childish and totally unbecoming a public body, for if they were satisfied that they were not at fault they should not only allow an inspection, but in fact court one to allay the feelings of the public in regard to the matter." A further report was made to the council (which is the sanitary authority of the Stoneyford area) of the foul nature of the liquid passed from the sand-washing operations into the Killultogh River. The council decided to engage the services of a competent man to keep watch and to report full particulars as to the mode of discharging the sediment and water into the river from the filter beds. The whole question of the condition of the Stoneyford area is of much importance, and the report of the

Belfast Health Commission on this point (about which they had much evidence) is awaited with great interest.

August 20th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *The University of Algiers.*

FOLLOWING the recent inspection of secondary schools (*écoles superieures*) in Algiers which was made by the late M. Moissan and Professor Bouchard, who reported in favour of the founding of an Algerian university, the Governor-General of Algeria has brought the proposal before the financial delegates and they have adopted it. This vote supports the opinion of the Minister of Finance for Algeria who has urged the creation of a university for Northern Africa. M. Moissan and Professor Bouchard, in their report, had proposed the establishment of an institute of natural science, experimental botany, zoology, and hygiene, and pointed out the political and social effects of the foundation of a university which would form a powerful link between the various races which form the population of Algeria.

### *Elimination by the Mammary Glands.*

At the Thirty-Sixth Congress of the French Association for the Advancement of Sciences, held at Rheims at the beginning of this month, M. Henri Labbé and M. Pépin communicated a paper on the above subject. Various substances absorbed by nurses can be recovered from the milk, such as garlic, onion, and asparagus, under the form of aromatic bodies. The body which most easily passes into the milk is alcohol but iodine is almost equal to it. The mammary gland seems to add to its normal function an eliminatory power for certain substances, and M. Labbé and M. Pépin considered that some products of intestinal intoxication can appear in the milk, for in the case of nurses who were ill the children whom they suckled suffered from various gastro-intestinal troubles which disappeared when the nurse was changed. M. Labbé and M. Pépin looked especially for indigo and the sulphur ethers in various milks. They laid great stress upon the chemical and biological properties of the various milks which they examined.

### *The Surgical Treatment of Paralytic Deformities of the Limbs.*

At the same congress M. Menciére gave an account of some researches upon which he had been engaged during the last ten years as to the cure of paralytic deformities of the limbs. He showed a series of lantern slides dealing with such cases as flail shoulder-joints, forearms in forced pronation, club hands, paralytic talipes equino varus or valgus, and flail knee-joints, which gave a very accurate idea of the various deformities and of the degree of anatomical correction and of functional cure which he had obtained by such operations as musculo-tendinous grafting or other operations according to the needs of the case. Some 10 per cent. of the cases were hopeless and nothing could be done for them. 70 per cent. were curable or could be so much improved as to be practically cured, and 20 per cent. were capable of very great improvement. For example, helpless cripples were made capable of walking and those who suffered from paralysed limbs were able to give up their orthopædic apparatus and to use the limb fairly well. As to the causes of the deformities 54 per cent. of patients suffered from infantile paralysis, 15 per cent. from cerebral infantile hemiplegia, 25 per cent. from spasmodic paraplegia, and 6 per cent. from paralysis due to other causes. M. Menciére's statistics deal with 250 cases of operation.

August 20th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *The Anti-malarial Campaign in Italy.*

THE campaign against malaria has been continued in 1906 with undiminished vigour and with considerable success. The experience of former years had proved the immense prophylactic value of quinine, and consequently increased attention has been paid during the past season to the distribution of this drug and to its effects as compared with other measures upon the salubrity of malarial districts. As will be seen by a glance at the table given below the quantity of State quinine distributed yearly has rapidly risen from 2242 kilogrammes in the financial year 1902–03, when its distribution was begun, to 20,723 kilogrammes in the present year of 1906–07. This result has been achieved in the face of many difficulties, such as the apathy and ignorance of the peasantry and the active opposition and competition of certain manufacturers interested in their own special preparations of the drug. The largest quantity *per capita* of the State quinine has been consumed in the Basilicata, after which in order rank Sardinia, Puglia, Latium, Calabria, the Veneto, and Sicily. It is still unfortunately the case that the State quinine does not reach all the population and that time and organisation are required to bring it freely within the reach of the poorest and most wretched in the outlying districts. Another necessity is the State distribution of some non-bitter form of quinine for the use of children. Three years ago Professor Celli proposed for this purpose the tannate of quinine, which is insoluble, or nearly insoluble, in water and hence almost tasteless. Its introduction encountered much opposition, however, even amongst the members of the Superior Council of Hygiene, on account of the long accepted but mistaken belief that the insoluble salts of quinine must necessarily be inert. Experience has shown on the contrary that the tannate of quinine is no less active therapeutically than the other more soluble salts of that alkaloid, while Professor Gaglio has proved experimentally that there is a remarkable tolerance on the part of the organism towards the tannate because it is only absorbed slowly as it comes in contact with, and is decomposed by, the juices of digestion. Its toxicity is thus little or *nil*. Made up in the form of "chocolates" the tannate is readily taken by the youngest children. Among 736 children affected with malaria in 1905–06 the tannate of quinine was used successfully by Professor Concetti in all but 19 cases (2·5 per cent.), while among 690 children treated with the tannate as a prophylactic there were only nine failures (1·15 per cent.). In all these patients it was admirably tolerated. Its action against recidivous attacks was very decided, as was likewise its antiperiodic power. From the following table it will be seen that while the consumption of State quinine has risen to over 20,000 kilogrammes the mortality from malaria throughout the whole country has diminished since 1900 by two-thirds.

| Consumption of State quinine. | | Mortality from malaria. | |
|---|---|---|---|
| Financial year. | Kilogrammes sold. | Year. | Total deaths. |
| — | — | 1900 | 15,865 |
| — | — | 1901 | 12.358 |
| 1902–1903 | 2,242 | 1902 | 9,908 |
| 1903–1904 | 7,234 | 1903 | 8,513 |
| 1904–1905 | 14,071 | 1904 | 8,501 |
| 1905–1906 | 18,712 | 1905 | 7,838 |
| 1906–1907 | 20,723 | 1906 | 4,690 |

It is true that the natural tendency to variation of the mortality curve would lead us to expect a natural descent from 1887 onwards, yet it is undeniable that in 1902 a new modifying factor was introduced by the use of State quinine which has rendered this descent much more acute, and which has, moreover, greatly impeded the recrudescence of malaria since that time throughout the whole of Italy. That this improvement has not been effected by the quinine sold by private enterprise is evident from the fact that the consumption of quinine derived from this source has meanwhile remained almost stationary. It may be safely predicted that when some appropriate preparation of the drug comes to be freely used for children under three years of age the mortality from malaria will be promptly reduced to a minimum, whilst the infant mortality from enteritis will also greatly diminish. As to its preventive effects, statistics prove that the use of State quinine has been no less successful in checking the morbidity from malaria than it has been in diminishing the mortality. Thus, for example, in the Agro Romano from 1900 onwards, as the quinine prophylaxis was gradually extended, the proportion of primary infections fell from 16·17 to 0·77 per cent. and the proportion of malarious persons from 31 to 3·4 per cent. of the protected population, while the periodic recrudescence of 1905 in the different zones of the Agro Romano was not observed at all. The same remarks hold true for other malarial districts of the Peninsula and adjoining islands. A vast amount of work still remains to be done, however, before Italy can be freed from her perennial scourge. This must be accomplished not only by better organisation of the sanitary services against malaria but by coördinating the task of the medical man with that of the engineer and that of the agriculturist.

### *The Lunacy Laws in Italy.*

A question having been put to the President by one of the councillors of the provincial deputation of Rome regarding the case of a man lately discharged from the lunatic asylum as cured, but who had subsequently committed suicide in prison during a recurrence of suicidal mania, Professor Mingazzini, medical superintendent of the asylum, has addressed a letter to the president of the deputation calling attention to the state of the law which renders such occurrences possible. The law of Feb. 14th, 1904, clearly prescribes that only those lunatics who, in addition to showing signs of mental alienation, are in some way giving rise to public scandal, or are dangerous to themselves or others, shall be definitely interned in asylums. It thus becomes the duty of the medical authorities to reject as ineligible the harmless idiot, the epileptic who is subject to maniacal attacks only at long intervals, the alcoholic who, immediately he escapes from the toxic action of alcohol, regains his usual calm, and finally all delinquents who, even though completely destitute of moral sense, do not exhibit the clinical symptoms required to raise their moral blindness to the level of recognised insanity. The asylum, in other words, must, according to the spirit of this law, be reserved for dangerous or unmanageable lunatics, and the director of the institution has no alternative but to discharge an inmate who has temporarily recovered, even when his mental condition is such as to forbode within a more or less distant period of time new and still more terrible manifestations of his latent malady. For example, if an epileptic who during an access of mania has attempted or even committed homicide remains perfectly free from further attacks for some months or at most one year, it becomes the legal duty of the director to order his discharge from the asylum. A similar thing happens to the alcoholic who after some months of abstinence, during which he regains his mental lucidity, is dismissed as cured, although it may be easily foreseen that once set at liberty he will inevitably yield to the imperious call of the drink habit. While the asylums of Italy thus shut their doors against all but the dangerous lunatic, where and by whom, asks Professor Mingazzini, are received the 60,000 epileptics whom the asylums cannot admit, the idiots, the harmless imbeciles, the constitutionally abnormal adolescents (who in Italy are more numerous than in any other European country), and all those poor old demented and paralysed creatures who are stamped as dangerous, albeit their dangerousness consists solely in the expense which their maintenance entails upon their respective families? Thrown into prisons and houses of correction or driven by illness into the wards of hospitals, these poor wretches have nothing before them but homicide, if they are endowed with the criminal temperament, or suicide if they are incapable of the struggle for existence. He urges that such institutions as have lately been established in Germany be provided for the reception of the numerous family of destitute neurasthenics who if not so taken care of become candidates for suicide or crime. Professor Mingazzini is, he adds, ashamed to think that the only asylum of which Rome can boast owes its existence to the piety of a Pope, and that the provincial deputation, after deliberating for some 20 years, has not been able to decide where to place the first stone, not of such a beneficent institution as that which he advocates, but even of a commonly decent lunatic asylum of which everyone admits the city's urgent need.

August 13th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *The Criminal Responsibility of the Insane under the New Civil Code.*

As the Austrian Civil Code is just now under reconstruction Professor von Wagner, the eminent professor of psychiatrics, in a paper recently read before the Society of Neurology and Mental Diseases, dealt with the question of reforming the present laws dealing with the responsibility of the mentally afflicted. The professor emphasised the necessity of amending the present conditions as these allow the judge too little liberty in forming his opinion as to the causes for not punishing a criminal of this type. In fact, the law is so narrowly drafted as to extend the exemption from punishment to such persons only as are entirely devoid of reasoning, individuals who are usually incapable of doing any harm. Therefore the present tendency is for judgments to go further than the law strictly allows. Professor von Wagner therefore advised the formulation of positive principles, stating the types of mental diseases which affect the evil-doer in such a way as to render him incapable of distinguishing between right and wrong and the types which have not this effect. That constant source of dispute between lawyers and psychologists, moral insanity, could also be brought into the positive part of the text. The Austrian law does not fix the position of the psychiatric expert, and leaves the judge who, as a rule, has no special knowledge in this respect, to decide the fate of mentally afflicted persons when they have come within reach of the law. Professor von Wagner thinks it advisable therefore to appoint experts with a consultative vote, and to erect special institutions where the mentally afflicted criminal can be placed under continuous observation of both the mental experts and the legal authorities. Such homes for insane criminals are contemplated already by the Government, as is shown by the budget of the Minister of Justice. Special care ought to be paid also to mentally affected children, as from these a number of criminals spring, who could be prevented from doing harm to the public if taken care of in proper time. The proposal of Professor Wagner will be brought before the next congress of psychological medicine, and if adopted will be presented to the Government as a basis of reform in this particular respect.

### *Late Opening Hours in Shops.*

An important step in the social improvement of the hard-worked shop assistant has been made by the almost universal adoption in Vienna of early closing hours for the shops of all descriptions. It was at first proposed to close these shops early enough to release the staff at 6 in the evening, but business interests suggested that people went to shop up to a later hour, so that 7 or 8 o'clock, according to the kind of business, has been agreed upon. But now the matter has been taken in hand by medical circles and it is possible that this reform will be reformed again. It has been justly emphasised that the desired effect of this measure, the possibility of open-air recreation, is not at all attained by finishing the day's work early in the evening, as there is only little fresh air to be had at that time in large towns or cities. The smoke and dust produced by the factories and the traffic is just as bad at 6 as at 8. The proper way to attain the object would be late opening of the shops at 9 o'clock, with special necessary exceptions, of course. This would allow the staff to obtain an ample supply of fresh air before coming to the shop, as in the morning the air is nearly always pure. The present opening hour is 7.30 A.M. This suggestion has aroused much interest in the parties concerned and it is possible that for once at least they will be on the side of common sense.

### *Alcohol and Mental Disorders.*

By investigations made to ascertain the influence of alcohol on the mental faculties certain facts have been elucidated which are well worthy of mention. In a report from the asylums for the insane of Austria covering the last decade 70,000 insane were dealt with, and in about 15 per cent. of these alcohol was the chief or contributing cause. The one drawback to this calculation is the fact that hereditary influence is not considered. Numerous cases of alcoholic parents without mental disorder are known who beget insane children who do not fall victims to alcoholic excesses. As a rule alcoholic parents are fairly prolific, but their offspring suffer from mental defects, and the third generation, if alcohol is still indulged in, are no more capable of procreation. Great care must be exercised in eliciting all the facts concerning the parental alcoholism. In a series of 392 alcohol-insane inmates of the Vienna lunatic asylum 80 per cent. had hereditary influences to explain their lessened resistance to the toxic effect of alcohol. Another very interesting series showed the rule that when the primary criminal drunkard begets children they come in conflict with the laws oftener than the parent, whilst *their* children, few in number, generally become a burden not to the funds of the

Ministry of Justice but to those of the charitable institutions; they are mentally so deranged as to be classified amongst the "irresponsibles." Special heed is now paid to criminal drunkards, and the possibility of placing these individuals into State asylums, not prisons, where their habit might be broken, has been often and often discussed in medical and forensic societies. The army reports also are now made use of to show the intimate connexion between alcohol and insanity, and freedom from punishment in such cases has already been the result of the investigation, which is the more to be praised from the medical point of view, as the disciplinary power of the army authorities with us is very great.

*Spondylitis Syphilitica.*

A rare case of localisation of syphilitic disease in the cervical vertebræ was reported by Dr. Okuniewski in a paper addressed to the *Wiener Klinische Wochenschrift.* An officer of the navy, 25 years old, complained of pains in the neck which were at first thought to be rheumatic but which did not react at all to the usual treatment. When examined by Dr. Okuniewski the patient could not move his head and held it as stiff as possible. There was tenderness of the trapezius and sternomastoid muscles; nothing seemed wrong with the spinal processes of the vertebræ but the patient could not open his mouth sufficiently to allow an examination of the anterior aspect of the cervical vertebral column. The patellar and Achilles reflexes were exaggerated. There was mild pyrexia; the urine was normal. As the pain continued, or rather grew worse, and as the spinal processes of the third and fourth cervical vertebræ were painful on pressure and appeared a little prominent, the head of the patient was placed in a Glisson's loop and thus immobilised. As the previous history suggested a suspicion of syphilis energetic specific treatment was advised and potassium iodide with grey ointment were used. After a fortnight's continued application of these remedies a decided improvement was seen. The Glisson loop was removed and the patient simply kept quiet in bed. Later, a plaster-of-Paris collar, which made movement of the neck impossible, was applied and the patient left the hospital. After three months of careful treatment he was discharged cured. The only trace of his severe disease was a little stiffness of the neck. Neither the spinal processes nor the bodies of the vertebræ could be felt to be enlarged, and the x rays showed no departure from the normal condition. After 14 days of antisyphilitic treatment the mouth could be opened. Syphilitic lesions in the spinal column are rare, and they can be only with difficulty distinguished from the tuberculous affections; in fact the diagnosis depends on the effect of treatment.

August 14th.

# Obituary.

## CHARLES WILLIAMS, F.R.C.S. EDIN.

NEWS of the death of this well-known East Anglian surgeon will be received with deep regret by his many friends. He had been in his usual health until a few months ago when symptoms of malignant disease of the throat became manifest. Mr. Williams was born at Gloucester, the son of a physician of that city. After serving as a pupil at the infirmary he was elected assistant house surgeon at the Bradford Hospital. He subsequently entered Charing Cross Hospital and in 1857 took the Membership of the Royal College of Surgeons of England. In 1858 he became house surgeon to the Norfolk and Norwich Hospital, with which he was connected for nearly half a century. In 1869 he was appointed assistant surgeon and in 1878 full surgeon. He was a skilful practitioner and made a number of very valuable contributions to medical literature.

Though Mr. Williams was a very busy man in his profession he found time for antiquarian researches. One of the best pieces of work of his life is the fine collection of portraits of benefactors, officials, and physicians connected with the city of Norfolk, which now adorns the board room of the hospital. As Sir Peter Eade says in his history of the hospital, "this collection is almost entirely due to the untiring energy of Mr. Charles Williams, the senior surgeon in the hospital, who has not only by his efforts obtained the majority of them but has most kindly presented them free of cost to the governors." A short catalogue and description, extending to 81 items, was published by Mr. Williams in 1890. Among the portraits is one of the best known of Caius, who was born at Norwich. Outside the profession Mr. Williams is best known by his studies of the life of Sir Thomas Browne. He possessed a fine collection of the works of that old Norwich worthy and was instrumental in forming the Browne Library which is at present in the Norwich Castle museum, and which comes largely from the collection of the late Simon Wilkin. With Sir Peter Eade Mr. Williams was one of the chief promoters of the movement to erect a monument to Sir Thomas Browne. Among his studies may be mentioned the "Measurement of the Skull of Sir Thomas Browne," "Portraits of Sir Thomas Browne," "The Pedigree," and on the occasion of the unveiling of the Browne statue he prepared a very full "Bibliography of the Religio Medici," a second edition of which has only just been issued. His knowledge of local history and antiquities was very complete and accurate, and he made a most interesting general collection of portraits and pamphlets relating to Norfolk and Norwich worthies.

## FRANCIS JAMES PEARSE, M.R.C.S. ENG., L.S.A.

THE death on August 8th of Mr. Francis James Pearse of 75, Warwick-square, S.W., at the comparatively early age of 59 years, removes from the City of Westminster a prominent local practitioner and the last male representative of an old and much respected medical family the members of which have resided in Westminster for several generations. He was the younger son of the late Mr. George Pearse of St. George's-square, S.W., with whom he was formerly in partnership and whom he subsequently succeeded. His elder brother, Mr. George Edmund Legge Pearse, F.R.C.S. Eng., who died in January, 1904, was sometime surgeon to Westminster Hospital and his uncle, the late Dr. William Grindley Pearse of Bessborough-gardens, S.W., was one of the public vaccinators recognised by the General Medical Council. Like his brother, Mr. Francis Pearse was educated at Westminster School and received his professional training at the hospital in Broad Sanctuary where he filled the post of assistant house surgeon. In 1868 he was appointed a prosector at the Royal College of Surgeons of England. He became qualified as L.S.A. in 1869 and M.R.C.S. Eng. in 1870. After he joined his father in practice Mr. Pearse was appointed surgeon to the A Division of the metropolitan police, medical officer to the United Westminster Almshouses, and for several years he was surgeon to the Western Dispensary, Westminster

The practice which he and his father carried on had been established in Westminster well over 100 years. It was founded in the reign of George III. by Dr. Grindley who had previously been an army surgeon but finally settled down in practice in Marsham-street, which was then one of the fashionable parts of Westminster. Dr. Grindley was succeeded by his son-in-law, Mr. George Pearse, who had commenced life in the navy, having been surgeon to the *San Josef*, one of Nelson's ships. On his death he was succeeded by his son, Mr. George Pearse, who died in 1891 at the age of 80 years, and was in due course, as already mentioned, succeeded by his son, the subject of the present notice.

Mr. Francis James Pearse took the keenest interest in the Volunteer movement from its early days. At the time of his death he held the post of surgeon-colonel to the Victoria and St. George's Rifle Volunteers and Army Medical Reserve. He was rather reserved in manner but those who knew him best were most warmly attached to him.

## JOHN ALFRED FOX, L.R.C.P. LOND., L.R.C.P. & S. EDIN., L.F.P.S. GLASG., L.S.A.

Mr. John Alfred Fox died at his residence, Penzance, on August 6th, from nephritis, in his forty-eighth year. The deceased was the son of the late Mr. Arthur Fox of Illogan, Cornwall, and after being a pupil to the late Mr. J. Quiller Couch, surgeon, of Fowey, Cornwall, he proceeded to Guy's Hospital Medical School. He took his qualifications in 1890 and succeeded to the practice of the late Mr. Dodge of Penzance. Mr. Fox had an extensive practice at Penzance, he was honorary surgeon to the West Cornwall Infirmary, district medical officer and public vaccinator, and also surgeon to the workhouse; he was also surgeon to the post-office staff and education committee. He was for some years a surgeon-lieutenant in the 1st Cornwall Royal Garrison Volunteer Artillery. Mr. Fox was formerly on the Penzance borough council and actively interested himself in the establishment of a meteorological observatory for the town. He was a good sportsman and a prominent supporter of the local football and cricket clubs. Mr. Fox was very popular in

Penzance and he will be much missed there, and great sympathy is felt for his widow and four children. The funeral took place at Illogan churchyard on August 10th and was largely attended.

Deaths of Eminent Foreign Medical Men.—The deaths of the following eminent foreign medical men are announced:—Dr. Georg C. Kirchhoff, the senior member of the profession in Germany, being 94 years of age. Up to the year 1900 he held an appointment as district medical officer in Leer, Hanover.—Dr. Josef Jacobi, formerly titular professor of pharmacology in Breslau and author of various papers on that subject, as well as on hygiene and ophthalmology. He was 67 years of age.

## Medical News.

University of Edinburgh.—The following is the official list of passes at the recent professional examinations for degrees in medicine and surgery:—

*First Professional Examination.*—George M. Adam, William J. Adie, Joseph R. Aeria, Robert Aitken, John E. Allan, Wallace R. Bayne, Henry Bedingfield, Delvine Bell, Archibald J. Bennee, Alexander G. Biggan, Herbert F. Blacklee, John P. Blockley, Arthur Bloom, Norman H. Bolton (with distinction), Thomas C. Britton, Niels H. Brönnum, David L. Brown, William Bruce, Cecil Burnham, A. Bruce Cheves, Jacob D. M. Claassens, Effie M. D. Craig, Philip L. Davies, Charles G. Deane, Robert C. Dickson, John M. Drew, B.A., Helen C. Dykes, Abraham Eprile, Joseph Geoghegan, John M. Gillespie, Robert Govan, M.A., John V. L. Grant, William C. M. Grant, James Gray, John W. Gray, M.A., Albert Groenewald, Spencer M. Hancox, Kenneth G. Hearne, Alfred M. V. Hesterlow, Stewart Hodgson, J. Elise Hoffmann, Harry F. Holmden (with distinction), Gwendolyn G. Hunter, William H. Incb, Robert C. Irvine, William H. Johnston, B.A., Braj B. Kapila, Edward W. Lawrence, George L. Leggat, Louis Levy, William E. Lewis, Neale L. Lochrane, Henry R. Longstaff, Adrian H. Louw, Francis R. Luke, George M'Connell, Ian Macfarlane, Alexander M. Mackay, Jessie A. MacLaren, Francis de S. M'Menamin, L. B. C. Marksman, Sesi Marshall, John S. S. Martin, Victor H. Mason, Horace M. Mills, Archibald B. Mitchell, John S. Monro, Arthur E. Moore, Hugh Morris, B.A., John T. Morrison (with distinction), R. Carlyle Moses, Thomas P. Noble, Patrick F. Nolan, Robert Park, Harold H. Proudfoot, Nicholas Purcell, Maxwell Ramsay, Mary D. Rankine, Spence D. Reid, George Richardson, John S. Robertson, John Scott, Peter M'L. Shiels, Bryce M. Smith, Charles E. H. Smith, Jacobus J. Stander, Robert S. Stevenson, Samuel D. Stewart, Sidney W. H. Stuart, TehlSingh, Dirk L. Theron, Arthur H. Towers, Patrick G. Tuohy, Peter Vieyra, Gerritt H. W. de Vos, Charles D. Walker, Chung Ching Wang, Hermann W. Webb, James B. Wilkie, Donald M'D. Wilson, George Wilson, and Walter Q. Wood.

*Second Professional Examination.*—Fergus Armstrong, Janet Armstrong, Anédée E. C. Beausoleil, John Henry Bell, Ronald A. Bell, Jackson G. Boal, William G. Brand, Peter de Bruyn, Oswald S. Bulloch, Armando D. Child, James Davie, William N. Davies, Alexander E. Drynan, William Dunlop, Alexander H. Elmslie, Herbert G. Feltham, Gerhard F. Fismer, Michael Gavin, Frederick P. Gibson, Walter E. Goss, William T. Graham, Robert Hamilton, Thomas E. Harwood, B.A., Eduard B. Hoffman, John H. Jones, Roy R. Kerr, Changatbara G. Kurien, Lina Kurz, Janet Leiper, Leonard Leslie, John S. Levack, William H. Lowe, Donald C. Macaskill, M.A., Margaret M'Cahon, Patrick M'Cool, James M'Kail, M.A., James M'C. M'Keand, Neil M'Leod, Mary M'Millan, Hector D. MacPbail, M.A., Andrew J. Macvie, Charles G. Marais, Alexander F. W. Millar, Gregor M. Miller, Alexander M'K. Minford, William Morrison, Rhoda May Murdoch, William J. Nisbet, James E. R. Orchard, Horace R. A. Philp, Johannes A. Pienaar, B.A., Ella F. Pringle, Frederick W. Rayment, Charles S. Sandeman, John M'G. Scott, John D. Skinner, William Stevenson, Arthur E. Tait, Robert H. Tait, Leonard W. O. Taylor, Seymour Williams, and Margaret C. Young.

*Third Professional Examination.*—A. H. T. Andrew, William Bainbridge, A. R. Bearn, Henry Burns, Ellison Cansfield, J. A. R. Cargill, H. G. Carter, Louis L. Cassidy, P. H. Chauvin, A. C. Court, J. C. Craig, M.A., John Crocket, J M. Dalrymple, Margaret E. Davidson, Purser Davies, Fred Dillon, Helen Forbes, W. T. Gardiner, A. B. Gordon, W. B. Grant, J. O. Hamilton, John Hewat, K. R. K. Iyengar, William P. S. Johnson, James Langwill, Robert D. Laurie, Archibald R. Leggate, Charles L. Louw, Alexandra B. MacCallum, David M'Carrol, Ranald MacDonald, George M. Mackay, M.A., Walter J. M'Keand, David L. MacKenna, John C. Mackenzie, Alexander K. Maclachlan, Alexander G. MacLeod, Ada J. Macmillan, Eva Meredith, Flora Morrison, Anna L. Muncaster, Kishanlal Nehru, Neil S. Neill, John G. Nicholson, M.A., Hilda M. Northcroft, Percy G. Palmer, Alfred A. W. Petrie, Bernard P. Phillips, Alfred R. Price, Donald Ross, Marguerite C. Ross, Herbert M. Spoor, Norman G. Thornley, Mary M. M'C. Turpie, David R. P. Walther, George S. Williamson, and Gordon Wilson.

Foreign University Intelligence.—*Berlin:* Dr. B. Rawitz, *privat docent* of Anatomy, and Dr. Klemperer, *privat-docent* of Medicine, have been granted the title of Professor.—*Budapesth:* Dr. Karl Heim has been recognised as *privat-docent* of Children's Diseases.—*Chicago* (*Rush Medical College*): Dr. Robert R. Bensley has been appointed Professor of Anatomy and Dr. Edwin O. Jordan Professor of Pathological Anatomy and Bacteriology.—*Cincinnati* (*Miami Medical College*): Dr. Magnus A. Tate has been appointed Professor of Midwifery in succession to Dr. William H. Taylor who retires.—*Clausenberg:* Dr. B. Gárnán has been recognised as *privat-docent* of Medicine.—*Greifswald:* Dr. Georg v. Voss has been recognised as *privat-docent* of Psychiatry.—*Halle:* Dr. Ernst Siefert has been recognised as *privat-docent* of Psychiatry.—*Kiel:* Dr. Kulhs has been recognised as *privat-docent* of Medicine.—*Leipsic:* Dr. Dependorf of Jena has been appointed Extraordinary Professor of Odontology.—*Naples:* Dr. Alfredo Gatti has been recognised as *privat-docent* of Ophthalmology.—*New York* (*College of Physicians and Surgeons*): Dr. Francis Huber has been appointed Professor of Medicine, and Dr. Frederick Peterson Professor of Psychiatry.—*Padua:* Dr. Giuseppe Astolfoni has been recognised as *privat-docent* of Materia Medica and Pharmacology.—*Würzburg:* Dr. Faust of Strasburg has been appointed Professor of Pharmacology in succession to Dr. Strauh who goes to Freihurg.—*Yale:* Dr. J. M. Flint of the University of California, San Francisco, has been appointed Professor of Surgery in succession to Dr. W. H. Carmalt who retires.

The Devonshire Hospital and Buxton Bath Charity.—The report of the annual meeting of the subscribers to this charity, which was held on July 30th under the chairmanship of the Duke of Portland, shows that the affairs of this useful and national charity are in a very satisfactory condition. The noble chairman, in his opening address, after referring sympathetically to the illness of the Duke of Devonshire and to the deaths of other prominent supporters of and workers in the hospital during the past year, paid a tribute to the 20 years of useful work rendered to the hospital by Mr. A. O. Haslewood, one of the honorary medical officers, who has recently retired. He then announced that the year had been a record one both in the number of patients treated and in the amount of subscriptions received. The patients numbered 3575, of whom 3295 were in-patients and 280 out-patients, and a sum of £3862 had been contributed by the general public. This increase in work had led to the acquisition of two houses for the purposes of a nursing home. The chairman then referred to the very wide area, practically the whole of England, from which the patients are drawn, and whilst thankfully acknowledging the support of the public urged that as there was still a slight adverse balance against the hospital, owing mainly to improvements, there should be still further increase in the subscriptions. He spoke with indignation of the many applicants for tickets who could themselves afford to subscribe to the hospital, and bore testimony to the enormous benefit that it confers on the class for which it is intended—the suffering poor. He moved the adoption of the report, which Mr. Drewry seconded. The Duke of Rutland moved the vote of thanks to the trustees, the committee of management, and the honorary officers of the hospital, and Sir Squire Bancroft proposed a vote of thanks to the chairman, which votes were carried with acclamation.

Presentation to a Medical Practitioner.—Mr. T. M. Dolan, M.D. Durh., J.P., was presented on Aug. 16th at the Halifax workhouse with an illuminated address and a silver rose bowl by the Poor-Law officers and staff of the Halifax union. Dr. Dolan, who has been medical officer to the workhouse for 38 years, is now convalescent from a serious illness, and his colleagues and the staff of the Halifax union chose the eve of his return to active work as an appropriate time to mark their esteem for him.

The Rockefeller Institute for Medical Research.—The Rockefeller Institute for Medical Research, New York, has adopted the following series of titles for its staff: Member, Associate Member, Associate, Assistant, Fellow, and Scholar of the Rockefeller Institute, and has made the following list of appointments: Simon Flexner, Member of the institute and director of the laboratories (pathology); S. J. Meltzer, Member of the institute (physiology and pharmacology); E. L. Opie, Member (pathology); P. A. Levene, Member (biological chemistry); Hideyo Noguchi, Assistant (pathology); John Auer, Assistant (physiology); Alexis Carrel, Assistant (experimental surgery); J. W. Jobling, Assistant (pathology); Nellie E. Goldthwaite, Assistant (chemistry); C. M. A. Stine, Fellow (biological chemistry); Donald Van Slyke, Fellow (biological chemistry); Martha Wollstein, Fellow (pathology); Maud L. Menten, Fellow (pathology); Mabel P. Fitzgerald, Fellow (bacteriology); Don R. Joseph, Fellow (physiology); Benjamin T. Terry, Fellow (protozoology); Bertha I. Barker, Scholar (pathology); and Thomas W. Clarke, Fellow (pathology). Grants to aid special researches have been made to the following: Robert M. Brown, New York; C. H. Bunting, Charlottesville, Va.; Katherine Collins, New York; Cyrus W. Field, New York; N. B. Foster, New York; Joel Goldthwaite, Boston; Holmes C. Jackson, Albany; Arthur I. Kendall, New York; Waldemar Koch, Chicago; W. G. MacCallum, Baltimore; Wilfred H. Manwaring, Bloomington, Ind.; J. W. D. Maury, New York; F. G. Novy, Ann Arbor; W. Ophüls, San Francisco; Richard M. Pearce, Albany; H. T. Ricketts, Chicago; Hermann W. Schulte, New York; Charles E. Simon, Baltimore; Aldred S. Warthin, Ann Arbor; and Francis C. Wood, New York.

DONATIONS AND BEQUESTS.—The Royal Westminster Ophthalmic Hospital has received a grant of £1000 from the trustees of the Zunz Bequest for the purpose of naming a ward in perpetuity the "Annie Zunz Ward."—The City of London Truss Society, 35, Finsbury-square, has received a legacy of £100 under the will of Mr. William Grain.—By the will of Mr. William Brindle £300 are bequeathed to the Devonshire Hospital and Buxton Bath Charity.—By the will of Mr. Harcourt Coates, L.R.C.P. Lond., M.R.C.S. Eng., a sum of about £20,000 is left to the Salisbury Infirmary for the building of a surgical ward to be called the "Harcourt and Maud Coates Ward."—By the will of Mrs. Duffield of Torquay, Torbay Hospital, Torquay, will receive £500.—The Rev. N. Shelmeldine has by will bequeathed £100 each to the Worcester Infirmary, the Tewkesbury Rural Hospital, the Pershore Cottage Hospital, and the Salford Royal Hospital.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *The Report of the Police and Sanitary Committee.*

THE Police and Sanitary Committee of the House of Commons, which deals with private Bills promoted by municipal and other authorities and proposing to create powers relating to police and sanitary regulations, has made a special report in which several matters referring to public health are touched on. The Committee states in it that the question of compulsory notification of births has been again before it and it has given the power to the Sunderland corporation. It has adhered to its policy of giving the clauses only in cases where there was a substantial voluntary effort to cope with the problem of infantile mortality. It refused them to one corporation which had no such organisation. In another case the promoters withdrew the clauses when the Committee required that the conditions should be precisely the same as those given last year as an experiment to the corporation of Huddersfield. The Committee also refers to its action with regard to "milk clauses." In the case of the London County Council Bill it considered carefully the question of amending the model clauses relating to tuberculous milk. It was satisfied as to the expediency of giving the County Council power to issue an order prohibiting the sale of milk from a particular cow or cows without necessarily condemning the whole dairy. This amendment it subsequently inserted in the Sunderland Corporation Bill. The committee also allowed power to the London County Council to defray the expenses of a dairyman appearing before it in obedience to its notice, but it allowed it only in view of the wide area from which the milk-supply of London is drawn.

### *The Prevention of Plague.*

The recent correspondence which has passed between the Secretary of State for India, on the one hand, and the Governor-General of India in Council, on the other, on the subject of measures for the prevention of plague has been published as a Parliamentary Blue-book. It consists of three despatches. In the first despatch, which was dated Nov. 30th, 1906, Mr. MORLEY forwarded to the Governor-General a representation made by the Royal College of Physicians of London regarding plague in India and regarding the memorandum of the College submitted to the Government of India in the summer of 1905; and also a memorandum by Dr. W. J. R. SIMPSON as to the measures taken at Poona for dealing with the epidemic. The Government of India sent a long letter on May 2nd, 1907, to the Secretary of State in reply to his communication, and it inclosed a statement of views on the suggestions contained in the memorandum of the Royal College of Physicians of London on the plague. To this, on July 26th, Mr. MORLEY replied that the proposals for extending the general sanitary service by the increased employment of qualified natives, details of which he desired, would be cordially supported by him within reasonable limits of cost. The correspondence is voluminous and extends to 54 printed pages.

## HOUSE OF LORDS.

### THURSDAY, AUGUST 15TH.

### *The Vaccination Bill.*

The Vaccination Bill was read a third time and passed.

## HOUSE OF COMMONS.

### WEDNESDAY, AUGUST 14TH.

### *Glycerinated Calf Lymph.*

Mr. WEIR asked the President of the Local Government Board, in view of the fact that a sum of £1350 was set down on the current estimates for the hire of calves for the production of glycerinated calf lymph, would he state the number of calves hired for this sum and the average age of calves so hired?—Mr. JOHN BURNS replied: A sum of £1350 is the amount estimated to be required for the hire of calves during the current year. The number of calves hired will depend on the number found to be necessary from time to time during the year and it cannot at present be stated what that number will be. The number hired up to June 30th was 203. The average age of the calves hired last year was four months.

Mr. WEIR further asked the President of the Local Government Board, in view of the fact that during the last financial year the Board paid a sum of £860 17*s.* 6*d.* in respect of the hire of 505 calves for the production of glycerinated calf lymph, and that these calves were not on hire for more than a fortnight, whether he would explain why the Board found it necessary to pay so large a sum as 34*s.* for the use of a calf for a fortnight?—Mr. JOHN BURNS answered: Before the lymph obtained from any calf is used the calf is slaughtered and the carcass undergoes dissection and examination in order that it may be ascertained that the animal was in perfect health and free from any taint of tuberculosis. The amount paid includes the sum for the depreciation of the value of the carcass owing to the post-mortem examination. It is not found practicable to obtain suitable calves at less terms than those now paid.

### THURSDAY, AUGUST 15TH.

### *Liverpool School of Tropical Medicine.*

Colonel SEELY asked the Under Secretary of State for the Colonies whether, in view of the work already accomplished by the Liverpool School of Tropical Medicine in combating tropical diseases, he could arrange for an increased grant to be made in order that the work may be further extended.—Mr. CHURCHILL answered: A further grant will be made of which the Secretary of State will be able to specify the amount after consultation with the Treasury.

### *A Medical Bureau at the Board of Education.*

Sir PHILIP MAGNUS asked the President of the Board of Education whether he would state what would be the constitution and *personnel* of the medical bureau to be attached to the Board of Education with the view to giving guidance and advice to the medical officers to be appointed by local education authorities to undertake the medical inspection of the children in public elementary schools.—Mr. MCKENNA said in reply: I am in communication with the Treasury on this matter, but I am not yet in a position to make any statement.

### *The Landing of Cases of Infectious Disease.*

Mr. WHITEHEAD asked the President of the Board of Trade whether his attention had been called to the fact that three passengers on board the White Star liner ss. *Persic*, which sailed from Durban on March 27th, were forced to land at Plymouth, notwithstanding that they intended to proceed to Tilbury, without being informed of the risk which one of them ran from exposure to a railway journey owing to the fact that he was suffering from typhoid fever; whether the fact of this disease having occurred on board was notified to the port authority or Board of Trade; whether it ought to have been notified, and to whom; whether the summary landing of these passengers at Plymouth relieved the ship's officers from any duty of reporting the disease on arrival at Tilbury or in any way expedited the discharge of the vessel in the port of London; whether he proposed to take any action in the matter; whether his department, or other authority, had any power to prevent the spreading of disease in this way in this country; and whether, having regard to the loss and expense incurred by several persons through the above events, he would cause full inquiry to be made into the whole matter.—Mr. JOHN BURNS (in a written answer) replied: Perhaps I may be allowed to answer this question. My attention has been called to the case mentioned in it and I have made inquiry with regard to it. The passengers referred to left the ship at Plymouth under the advice of the ship's medial officer but I do not understand that they were forced to do so. The medical officer appears not to have regarded the case as one of typhoid fever but as extremely suspicious. He states that he reported the case at Plymouth to the pilot, giving him the principal symptoms as a guide for those ashore, and that the pilot assured him the case would be looked to. I am informed that the discharge of the vessel was not in any way expedited by the landing of the passengers at Plymouth. The Local Government Board has informed the steamship company that in its opinion the ship's medical officer should either have sent an intimation in writing to the port medical officer of health respecting the case or should have mentioned it on the certificate given by him with regard to the health of the passengers and crew. The Board has suggested to the company that it should be made clear to the surgeons of their ships that in all cases where suspicion exists of infectious disease on ships arriving in any port information of the facts should be sent in writing by the surgeon to the port medical officer of health. The company has given an assurance that in future this will be done.

### *Public Health (Regulations as to Food) Bill.*

Late at night the House went into committee on the Public Health (Regulations as to Food) Bill, Mr. EMMOTT in the chair.

In the course of a discussion on an amendment moved by Mr. GRETTON

Mr. JOHN BURNS made a general statement as to the policy which the Local Government Board would pursue in administering the Bill. Regulations were to be made under the Bill and these would lie for 40 days on the Table of Parliament before they came into force. Any public body would be able to obtain copies of the rules as soon as they were made. Any apprehended hardships would be met by the Local Government Board in precisely the same way as had been done during the last 11 years in dealing with the regulations for the import of food and the shipping trade. With regard to the necessity for the regulations, he had been asked what would be done in the case of mineral waters. He would point out that in the East-end of London certain classes of mineral waters were made under such conditions that honourable Members, when they realised what these were, would agree that these waters should be brought within the scope of the Bill. The right honourable gentleman went on to refer to a case where the work of manufacture was carried on by a foreigner in Stepney in a yard beside a water-closet. The water was exposed to filthy contamination and some of the bottles had masses of matter in them that looked like mould. Several times last summer bottles filled on these premises had been returned by customers, and when Stepney people complained of bottles being dirty they were very dirty indeed. Frequently it happened that a person rented two rooms and started a mineral water factory. There was no machinery so that the place was not a workshop and it was not a factory. The sanitary conditions for the inmates might comply with the conditions of the local sanitary inspector but no other inspector had any power over premises of this kind. What the Local Government Board wanted to do was to supplement the powers of the local medical officer of health so that he might see that the conditions were not fraught with danger to the people engaged and to the consumers. He had been asked whether under this Bill it would be possible for a medical officer or an inspector to go into any kitchen. He would ask honourable members' attention as to the necessity of anyone going into a kitchen. In the district of what was supposed to be one of the best local authorities in the country there were restaurants where food was prepared for consumption and sale. In these the water-closet accommodation was reported to be in a defective condition and in 35 cases the water-closet communicated with the kitchen, and in some cases the water-closet was off the kitchen without ventilation. If the water-closet itself satisfied the sanitary inspector he had no power to prevent the preparation, storage, and distribution of food. They had, in London, districts where some of the choicest morsels and most expensive classes of food and drink were prepared in conditions which were absolutely intolerable and abominable. He had been asked what organisation was going to be resorted to for carrying out the regulations. The Local Government Board did not intend to create any new organisation. They did not intend to do anything in derogation of what any sanitary authority had the power to do. They intended to act through the existing medical officers and the local authorities for the purpose of enforcing these regulations. The local authorities with their existing staffs and their present expenditure would be able to do this work concurrently with much of their sanitary work. The Local Government Board did not intend to use these regulations as a means of harassing any trader or manufacturer in carrying on his business in a decent way. After the scandals which had been revealed in the last year or two the Board would not be doing its duty unless it sought for the powers contained in the Bill, and he asked honourable members to trust the Board in the regulations which were made under it. It was not intended that the Bill should apply to private houses.

Mr. GRETTON having withdrawn his amendment,

Mr. JOHN BURNS moved an amendment to make it clear that the Bill should not apply to ordinary private houses.

This was agreed to.

Mr. JOHN BURNS moved the following new clause: "All regulations made under this Act shall be laid as soon as may be before Parliament, and the Rules Publications Act, 1893, shall apply to such regulations as if they were statutory rules within the meaning of Section 1 of that Act, and that Act as so applied shall, notwithstanding anything in Sub-section 5 of Section 1 thereof, extend to Scotland, with the substitution of a reference to the *Edinburgh Gazette* for the reference to the *London Gazette*."

The clause having been agreed to was embodied in the Bill which then passed through Committee.

### FRIDAY, AUGUST 16TH.

### *Public Health (Regulations as to Food) Bill.*

This Bill as amended was considered on report.

Mr. JOHN BURNS, when the report stage, which was formal, had been completed, appealed to the House to give the Bill a third reading. He repeated his assurance that the regulations under it would be drawn up by the Local Government Board with full consideration for all the legitimate interests concerned.

The Bill was then read a third time.

### MONDAY, AUGUST 19TH.

### *The Medical Bureau at the Board of Education.*

Sir PHILIP MAGNUS asked the President of the Board of Education whether, having regard to the fact that Clause 10 of the Education (Administrative Provisions) Act would enable local authorities to institute a system of periodical measurement of the children in attendance at public elementary schools, he would arrange, with a view to securing uniformity of method among local authorities desirous of availing themselves of the powers conferred by the Act, that instructions should be issued by the Board as to the best means of taking such measurements; and whether he would arrange that the data obtained should be duly tabulated at the offices of the medical bureau of the Board for information and reference.—Mr. MCKENNA answered: One of the duties to be undertaken by the Board of Education in connexion with Clause 10 of the Bill referred to, when it has become an Act, will be the careful collating, tabulating, summarising, and publishing of the most important results obtained from the medical inspection carried out by local authorities in the public elementary schools in their respective areas. I am considering in what way this duty may most effectively be carried out, but I think it would be highly inadvisable to make any decision in regard to it, until I have had the advantage of the medical advice which it will be necessary for the Board to become possessed of when the Bill has become law.

### TUESDAY, AUGUST 20TH.

### *The Medical Officer at the Tokio Embassy.*

Sir WILLIAM COLLINS asked the Secretary of State for Foreign Affairs whether the medical officer to the British Embassy at Tokio was a legally qualified medical practitioner in accordance with the requirements of The Medical Act, 1858.—Sir EDWARD GREY furnished the following written answer: I must remind the honourable Member that on June 4th last, in reply to a similar question, I informed him that I was not prepared to make any statement involving an interpretation of any part of the Medical Acts. I must adhere to what I then said.

### *The Mortality of Panama Labourers.*

Mr. STAVELEY HILL asked the Under Secretary of State for the Colonies whether he would make inquiry into the rate of mortality among the labourers employed on the Panama Isthmian Canal.—Mr. CHURCHILL replied: I understand that the Secretary of State for Foreign Affairs has called for an official report but has not yet received it. I may mention, however, that very beneficial results have followed from the strict enforcement of sanitary laws and anti-mosquito regulations in the Canal zone and from the application of the new knowledge of tropical diseases to local conditions. In October, 1884, there were 21 deaths and 84 cases of yellow fever amongst 2706 non-immunes in a total of 19,243 men employed in the construction of the Canal. In October, 1905, among 4000 non-immunes in a total of 22,000 employees there was no death and only one case. This is an excellent instance of the inestimable value of the kind of research work which is being conducted by the Liverpool School of Tropical Medicine and other institutions of a similar kind.

### *The Plague Statistics.*

Mr. REES asked the Secretary of State for India whether he would consider the advisability of giving, in Official Publications and Answers, together with the actual figures relating to plague mortality, the figures per mille of the population of India, in order that comparison might not be made with a population approximating to that of the United Kingdom.—Mr. MORLEY answered: I will bear in mind the honourable Member's suggestion in cases in which the additional information would be pertinent and correct and might prevent misleading comparisons. When, as frequently happens, plague is practically confined to a province, a per mille ratio to the population of India would itself be misleading.

### WEDNESDAY, AUGUST 21ST.

### *Lead Poisoning in the China Trade.*

Mr. ALDEN asked the Secretary of State for the Home Department whether he was aware that there were 12 cases of lead poisoning in the china and earthenware trade during last month; whether this was above or below the monthly average of such cases in this trade; and what steps he proposed to take with a view to diminishing the number of such cases.—Mr. GLADSTONE replied: It is the case, as stated in the question, that 12 cases of lead poisoning were reported to the Home Office in this industry in July. The number is above the average monthly number of cases during 1906 and the first six months of 1907; but, as my honourable friend will understand, the numbers fluctuate to some extent from month to month, and the total number of cases for the first seven months of this year is considerably below the number for the corresponding months in 1906—50 as compared with 68. The whole question of lead poisoning both in the potteries and in other trades is under my consideration.

## BOOKS, ETC., RECEIVED.

BERGMANN, J. F., Wiesbaden. (F. BAUERMEISTER, 49, Gordon-street, Glasgow.)

- Urologisch-Kystoskopisches Vademecum. Von Dr. Richard Wohlauer, Berlin, Ehem. Assistent der Klinik und Poliklinik von weiland Geh.-Rat Prof. Dr. Nitze. Price M.3.60 or 3*s*. 9*d*.
- Frankfurter Zeitschrift für Pathologie. Herausgegeben von Eugen Albrecht. Erster Band. Erstes Heft. Festschrift zum 200. Geburtstage von Johann Christian Senckenberg: 28, Februar, 1907. Price 7*s*.
- Descriptive Biochemie, mit besonderer Berücksichtigung der Chemischen Arbeitsmethoden. Von Dr. Sigmund Fränkel, Dozent für Medizinische Chemie an der Wiener Universität. Price M.17, or 17*s*,

BETZ, FRANK S., Hammond, Ind., U.S.A. (A. B. WALSH AND CO., 96, Great Portland street, London, W.)

- The Abdominal and Pelvic Brain, with Automatic Visceral Ganglia. By Byron Robinson, B.S., M.D , Chicago, Illinois. Price 16*s*.

BRAUMÜLLER, WILHELM, Wien und Leipzig.

- Anatomie und Aetiologie der Genitalprolapse beim Weibe. Von Dr. Josef Halban, Privat-dozent für Geburtshilfe und Gynäkologie; und Prof. Dr. Julius Tandler, Prosektor der I. Anatomischen Lehrkanzel, in Wien. Aus dem I. Anatomischen Institute in Wien. Price, paper, K.18, or M.15; bound, K.21, or M.17.50.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

- Eye Strain and Eyesight. How to Help the Eye and Save the Sight. By John Grimshaw, M.D., B.S. Lond., D.P.H. Camb., &c. Price 1*s*. net, or cloth bound 2*s*.
- Anatomical Terminology. With Special Reference to the (BNA). By Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University, Baltimore (formerly Professor of Anatomy, Rush Medical College, University of Chicago). With Vocabularies in Latin and English and illustrations. Price 5*s*. net.
- Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M.A. and M.B. Lond., F.R.C.S. Eng., President of the Royal College of Surgeons of England; and J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy, University of Michigan. Fourth edition, revised and enlarged. Price 30*s*. net.
- Lessons in Disinfection and Sterilisation. An Elementary Course of Bacteriology, together with a Scheme of Practical Experiments illustrating the Subject-Matter. By F. W. Andrewes, M.A., M.D. Oxon., F.R.C.P. Lond., D.P.H. Cantab., Lecturer on Pathology, Pathologist, and Sanitary Officer to St. Bartholomew's Hospital, London. Second edition. Price 3*s*. 6*d*. net.

**John Bale, Sons, and Danielsson, Limited**, 83–91, Great Titchfield-street, Oxford-street, London, W.

Stray Leaves, and Some Fruit on Cancer and Tuberculosis. Based upon Physiologic Chemical Principles. Being a Thesis in Two Parts. By Henry D. McCulloch, M.B. Glasg., Fellow of the Society of Tropical Medicine and Hygiene, London. Price 10*s.* 6*d.* net.

Some of the Clinical Aspects of Pneumonia. Being the Substance of Clinical Lectures and Demonstrations delivered at the West London Hospital to the Post-Graduates attending the Practice of the Hospital. By Donald W. C. Hood, C.V.O., M.D. Cantab., F.R.C.P. Lond., Senior Physician to the Hospital. Price 7*s.* 6*d.* net.

The Haslemere Museum Gazette. A Journal of Objective Education and Field-Study. Conducted by Jonathan Hutchinson, F.R.C.S., LL.D., F.R.S., Assisted by E. W. Swanton. Esq., Curator of the Haslemere Museum. Vol. I. 1906 and 1907. Price 7*s.* net.

**Kimpton, Henry**, 13, Furnival-street, Holborn, London, E.C. (**Stenhouse, Alexander**, 40 and 42, University-avenue, Glasgow.)

The Midwives' Pocket Register and Case Book. By R. J. Blackham, L.R.C.P., L.M. Rotunda. D.P.H., R.C.P. Lond., R.C.S. Eng., Major, Royal Army Medical Corps. Price not stated.

**Lindley, Percy**, 30, Fleet-street, London, E.C.

The Great Eastern Railway Company's Tourist Guide to the Continent. Edited by Percy Lindley. Price 6*d.*

**Longmans, Green, and Co.**, 39, Paternoster-row, London, E.C.

Gardening in Town and Suburb. By Harry H. Thomas, Assistant Editor of "The Garden." Price 2*s.* 6*d.* net.

Two New Worlds. I. The Infra-world. II. The Supra-world. By E. E. Fournier d'Albe, B.Sc., Author of "The Electron Theory." Price 3*s.* 6*d.* net.

**Macmillan Company**, New York. (**Macmillan and Co., Limited**, London.)

The Major Symptoms of Hysteria. Fifteen Lectures given in the Medical School of Harvard University. By Pierre Janet, M.D., Professor of Psychology in the Collège de France, Director of the Psychological Laboratory in the Clinic of the Salpêtrière. Price not stated.

**Murray, John**, Albemarle-street, London, W.

Hygiene of Nerves and Mind in Health and Disease. By August Forel, M.D. Translated from the German by Austin Aikins, Ph.D. Price 6*s.* net.

**Paton, J. and J.**, 143, Cannon-street, London, E.C.

Paton's List of Schools and Tutors. (An Aid to Parents in the Selection of Schools.) Tenth Annual Edition, 1907–1908. Price 1*s.* 6*d.*

**Poinat, A.**, 12, Rue Jacob, Paris.

Athérome Aortique Expérimental. État Actuel de la Question. Par le Dr. L. Thevenot. Price not stated.

**Priory Press, The**, 70, High-street, Hampstead, London, N.W.

The Relation of Man to the Animal World. By Sir Samuel Wilks, Bart., M.D., LL.D., F.R.S. Price not stated.

**Pulman, George, and Sons, Limited**, 24–26, Thayer-street, Manchester-square, London, W.

Ophthalmia Neonatorum. With Especial Reference to its Causation and Prevention. (The Middlemore Prize Essay of the British Medical Association, 1907). By Sydney Stephenson, M.B., C.M., Ophthalmic Surgeon to Queen Charlotte's Hospital, London, &c. Price not stated.

**Rudeval, F. R. de**, 4, Rue Antoine Dubois, Paris.

Précis d'Électricité Médicale. Par E. Castex, Agrégé des Facultés de Médecine, Professeur de Physique Médicale à l'Université de Rennes, Chef du Service d'Électrothérapie et de Radiographie à l'Hôtel-Dieu. Deuxième Édition, revue et augmentée. Price Fr.12.

Précis de Pharmacologie. Art de formuler, Matière Médicale, Indications Thérapeutiques et Posologie. Par le Dr. Allyre Chassevant, Professeur agrégé à la Faculté de Médecine de Paris. Price Fr.10.

**Steinheil, G.**, 2, Rue Casimir-Delavigne, Paris.

Étude Histo-Chimique et Cytologique des Crachats. Par le Dr. S. Israëls de Jong, Ancien Interne Lauréat des Hôpitaux de Paris. (Travail du Laboratoire de Bactériologie de la Faculté et de la Clinique Médicale Laënnec.)

Introduction à la Thérapeutique Naturiste par les Agents Physiques and Diététiques. Par le Dr. Fernand Sandoz. Price Fr.6.

**Stuber, A. (Curt Kabitzsch)**, Würzburg.

Die Medizinischen Handschriften der kgl. Universitätsbibliothek in Würzburg. Beschreibendes Verzeichniss mit Literarhistorischen Anmerkungen. Von Dr. Ign. Schwarz. Nebst zwei Anhängen (Anatomia Cophonis. Anatomia Richardi Salernitani). Price M.7.

**Sweet and Maxwell, Limited**, 3, Chancery-lane, London, W.C. (**The Carswell Co., Limited**, 30, Adelaide-street East, Toronto.)

Employers' Liability to their Servants at Common Law, and under the Employers' Liability Act, 1880, and the Workmen's Compensation Act, 1906. By C. Y. C. Dawbarn, M.A., Barrister-at-Law, Inner Temple and Northern Circuit. Third edition. By the Author. With Notes on the Canadian Law. By A. C. Forster Boulton, M.P., of the Inner Temple, South-Eastern Circuit, and Osgoode Hall, Toronto, Barrister-at-Law. Price £1 1*s.*

**Urban und Schwarzenberg**, Berlin und Wien.

Die Krankheiten der Nase und Mundhöhle sowie des Rachens und des Kehlkopfes. Ein Lehrbuch für Praktische Aerzte und Studierende. Von Dr. Alfred Bruck, Berlin. Price not stated.

**W. B. Saunders Company**, Philadelphia and London.

A Laboratory Manual of Invertebrate Zoölogy. By Gilman A. Drew, Ph.D., Professor of Biology at the University of Maine; in Charge of Zoölogical Instruction at the Marine Biological Laboratory, Woods Holl, Massachusetts. With the Aid of the Zoölogical Staff of Instructors of the Marine Biological Laboratory, Woods Holl, Mass. Price 5*s.* net.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon.) Edin., Professor of Gynecologic Surgery at the Johns Hopkins University; Gynecologist to the Johns Hopkins Hospital, Baltimore, and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia; Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia. Volume I.

**Vogel, F. C. W.**, Leipzig.

Atlas der Klinischen Mikroskopie des Blutes. Zweite Auflage. Bearbeitet von Privatdozent Dr. E. Meyer und Professor Dr. H. Rieder in München (Unter Mitwirkung von Dr. G. Maurer, München). Price not stated.

**Wood, William, and Company**, New York.

Manual of the Diseases of the Eye. For Students and General Practitioners. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890–1903. Fifth edition, revised. Price $2.00 net.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

**Archibald, John W.**, M.B., Ch.B., has been appointed on the Resident Medical Staff of the Royal Infirmary, Aberdeen.

**Ball, W. Girling**, F.R.C.S. Eng., has been appointed Assistant Surgeon to the City of London Truss Society.

**Gask, G. E.**, F.R.C.S. Eng., has been appointed Surgeon to the City of London Truss Society.

**Gorham, P. C.**, L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Clifden District of the County of Galway.

**Harvey, Frank**, M.R.C.S., L.S.A., has been appointed Public Vaccinator for the St. Issey and St. Breock Districts by the St. Columb (Cornwall) Board of Guardians.

**Hustler, G. H.**, M.B., Ch.B. Leeds, has been appointed Government Medical Officer for Fiji.

**Niven, A. M.**, M.B., Ch.B., has been appointed on the Resident Medical Staff of the Royal Infirmary, Aberdeen.

**Stewart, Alex.**, M.B., Ch.B., has been appointed on the Resident Medical Staff of the Royal Infirmary, Aberdeen.

**Walford, Harold R. S.**, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at the Coventry and Warwickshire Hospital, Coventry.

**Wilkins, Eric M.**, M.D. Vict., M.R.C.S., has been appointed Assistant Medical Officer to the Metropolitan Asylums Board.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

**Bedford County Hospital.**—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

**Bombay Municipality.**—Two Assistant Health Officers. Salaries Rs. 750, rising to Rs. 1000, and Rs. 600, rising to Rs. 750 per mensem respectively.

**Bridgnorth and South Shropshire Infirmary.**—House Surgeon. Salary £100 per annum, with board and lodgings.

**Bury Infirmary.**—Junior House Surgeon. Salary £80, increasing to £90, with board, residence, and attendance.

**Cairo, School of Medicine (Egyptian Government, Ministry of Education).**—Assistant to the Professor of Pathology. Salary £E. 320 per annum.

**Cancer Hospital**, Fulham-road, S.W.—Two Assistant Anæsthetists. Honorarium of 25 guineas each.

**Carlisle, Cumberland Infirmary.**—Resident Medical Officer. Salary at rate of £80 and £100 per annum, with board, lodging, and washing.

**Derby County Asylum**, Mickleover.—Junior Assistant Medical Officer. Salary £120, rising to £150 per annum, with apartments, board, washing, and attendance.

**Dudley, Guest Hospital.**—Assistant House Surgeon for six months. Salary £60 per annum, with residence, board, and washing.

**Dumfries and Galloway Royal Infirmary.**—Assistant House Surgeon. Salary £40 per annum, with board and washing.

**East London Hospital for Children and Dispensary for Women**, Shadwell, E.—Medical Officer to the Casualty Department, also Second Medical Officer, both for six months, renewable. Salary of former at rate of £100 and of latter at rate of £40 per annum, with luncheon and tea. Also House Surgeon for six months. Salary £25, with board, residence, laundry, &c.

**Edmonton Workhouse**, Upper Edmonton.—Assistant Medical Officer. Salary £180 per annum, and residential allowances.

**Egyptian Government, Kasr-el-Ainy Hospital.**—Resident Medical Officer. Pay £250 a year, with quarters, servants, washing, coals, and light.

**Epsom. Surrey, London County Asylum**, Long Grove.—Fourth Assistant Medical Officer. Salary £180 a year, with board, apartments, and washing.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

HEMEL HEMPSTEAD, WEST HERTS INFIRMARY.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary £50 per annum, with board, apartment, and washing.

LEICESTER ISOLATION HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing.

LEICESTER POOR-LAW INFIRMARY.—Resident Assistant Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Physicians and Two House Surgeons. Salaries at rate of £60 per annum, with board and residence.

LOCHGOILHEAD AND KILMORICH PARISHES.—Medical Officer. Salary £100 per annum.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, lodgings, and washing.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 a year, with rooms, attendance, board, and washing.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Third and Fourth House Surgeons for six months. Salary £25, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months. Salary at rate of £80 a year, with board and lodging.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

ORKNEY, PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £51 per annum.

PAISLEY, RICCARTSBAR ASYLUM.—Assistant Resident Medical Officer. Salary £100 per annum, with board and apartments.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence and board.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £50 per annum, with board and apartments.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

TOXTETH PARK WORKHOUSE AND INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with board, washing, and apartments.

WALLASEY URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £500, increasing to £750.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Registrar and Pathologist.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons, tenable for six months.

YORK DISPENSARY.—Two Resident Medical Officers, unmarried. Salary £120 a year, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Shere, in the county of Surrey.

# Births, Marriages, and Deaths.

## BIRTHS.

COOKE.—On August 15th, at Bournemouth, the wife of Francis H. Cooke, M.R.C.S., of a son.

WALES.—On August 14th, at Mevell Hall, Gargrave in Craven, the wife of Herbert Wales, M.A., M.B., B.C., of a son.

## MARRIAGES.

FORRESTER—HARTNOLL.—On August 14th, at St. John's, Potters Bar, Charles Carmichael Forrester, M.D., to Adeline Braund, youngest daughter of the late James Hartnoll of Ganwic, Barnet.

NORMAN—HARRISON.—On August 7th, at the Parish Church, Holton St. Mary, Suffolk, J. Clement A. Norman, M.R.C.S., L.R.C.P., to Maud Welfitt, eldest daughter of George Tonkin Harrison, of The Hall, Holton St. Mary, Suffolk.

## DEATH.

BROWN.—On August 12th, aged 50 years, Walter Henry Brown, M.Sc. Leeds, F.R.C.S.I., M.R.C.S. Eng., of Highfield House, Headingley, Leeds, Consulting Surgeon, Leeds General Infirmary.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE USE AND ABUSE OF ALCOHOL.

IN THE LANCET of March 30th, 1907, we published a pronouncement with reference to the use of alcohol signed by a group of representative medical men. We have been receiving from America lately by post after post photographic reproductions of this article, which appear to have been disseminated widely in the States by a body called the National Wholesale Liquor Dealers' Association of America. We are powerless to stop this proceeding and must submit also to the further misrepresentation, which is quite sure to be made, that we are in league with the National Wholesale Liquor Dealers' Association of America. Our position in regard to this important pronouncement is exactly defined by an introductory paragraph appearing in our columns simultaneously, and we are constrained to believe that the assertions attributing to us an interest in publishing the document far and wide are made with knowledge of their incorrectness.

## HERBALIST HUMBUGS.

A NON-MEDICAL correspondent, writing in a recent issue of the *Sheffield Daily Telegraph*, holds up to proper reprobation the preposterous pretensions of herbalising quacks to an exclusive knowledge of the medicinal properties of vegetable remedies. He takes for his text a pamphlet which he has received from a herbalist company trading under the title of "doctor," from which he quotes rubbish of the following nature: "The medical profession despise herbs, and use dangerous minerals and poisons instead, to the great injury of their patient." Further extracts from this pamphlet assert that "milk is grass in a liquid condition," whilst we read that the flesh of the cow is "solid extract of herbage." The correspondent dilates at some length on the flourishing condition of modern quackery which is undoubtedly largely fostered by the broadcast distribution of this sort of lying pamphlet. We have frequently given expression to such words as those with which he concludes his letter: "The charlatan's only qualification is that he can produce a badly written pamphlet based upon a diseased notion of what medicine ought to be. That the State should permit the wholesale deception is a scandal, nay, it is a tragedy." A large part of the letter is occupied in a statement of the prior claims of the medical profession to treat disease, which many people may read with advantage, but this champion of the profession would not have weakened his cause if he had omitted to write: "There is not a single herb in the world of any value unknown to medical and pharmaceutical science." This is a somewhat too universal negative for ready acceptance. We entirely agree, however, with the remark that "the average herbalist's method of extracting the medicinal virtues from an herb are crude, unscientific, and very unreliable."

## HEALTH AND HOSPITALS IN GIBRALTAR.

A REPORT on the Blue-Book of Gibraltar for the year 1906 has been prepared by Mr. Frederick Evans, colonial secretary of the colony, and presented by command of His Majesty to both Houses of Parliament. The report states *inter alia* that the sanitary condition of Gibraltar is steadily improving. The death-rate, which in 1905 was 18·17 per 1000 of the estimated population (25,140), compares very favourably with that of the crowded towns of England and Wales. The epidemic of small-pox which commenced in October, 1905, proved to be one of the severest on record. Special measures were adopted to cope with it and all possible precautions were taken to prevent the disease being spread. When the east wind, or "Levanter," prevails during the summer months a heavy cloud hangs over the rock and the sheltered position of the town at the base of the western side of the rock makes the heat very oppressive; otherwise the sub-tropical climate is an agreeable one to reside in. The temperature is highest in the months of June, July, August, and September. The prevailing wind is easterly, although it frequently blows with considerable force in the winter months from the south-west and north-west. The mean temperature for the year was 65·1° F. Statistics taken over a period of 115 years show the average annual rainfall to be 33·33 inches. A hospital for the treatment of the sick was first established at Gibraltar in 1815, when an old building known as the "Blue Barracks" was repaired at Government expense and handed over to the public for use as a civil hospital. It was maintained by public subscriptions, assisted by an annual grant from the Government and by the contributions of paying patients. A tax was also levied on flour in aid of the hospital funds. Every vessel anchoring in the bay was required to pay 3*s.* 3*d.* Lighters, ferry-boats, &c., paid 4*s.* 4*d.* annually. In 1880 the foundation-stone of a new hospital on the same site was laid by the Governor, General Lord Napier of Magdala. The building was completed in 1888 at a cost of £24,000, which was met from Government funds. The building consists of several separate blocks, each block having been brought into use as completed. Until 1885 the hospital was divided into separate divisions: Protestant, Roman Catholic, and Hebrew. Each was under separate management, there being a deputy governor of each persuasion. In that year an Ordinance was passed under which a board of management consisting of five deputy governors was constituted. In 1889, as the result of a commission appointed to inquire into the manner in which the hospital was managed, an Ordinance was passed making the hospital a Government institution to be appointed by the Governor and under rules and regulations to be approved by the Governor. This Ordinance, slightly amended, is still in operation. The board of commissioners consists of a chairman (the colonial secretary) and five others, of whom not less than three, including the chairman, must be civil officers of the colony. A surgeon, an assistant surgeon, and a dispenser reside in the hospital. There are also a resident matron and five nursing sisters, obtained through the medium of the Colonial Nursing Association in England. An additional block was erected in 1904 at a cost of £3691. This enabled the Government to provide a new "home" with improved accommodation for matron and sisters and separate wards for female lock cases. A public dispensary is maintained at the hospital, at which persons certified to be indigent receive medical advice and medicine gratis. Persons certified to be in straitened circumstances are given medical advice and medicine on payment of a small fee. At one time the Spanish Government made an annual grant of 1250 pesetas towards the funds of the hospital, in consideration of which Spanish subjects resident in the neighbouring town of Linea received gratuitous medical treatment on the production of certificates of indigency signed by the Alcalde (Mayor) of that town. In 1891, shortly after the hospital became a Government institution, this grant was discontinued at the request of the Gibraltar Government. The practice of affording gratuitous medical treatment to residents of Linea, however, still obtains. A small building, with accommodation for two beds, was erected in 1884 at an isolated spot on the North Front. It was intended for the receipt of small-pox cases landed from ships and was considered to be a branch of the civil hospital. Two wards of four beds each were added in 1889. Until 1893 small-pox cases occurring in the town were treated in the segregation wards of the civil hospital. In that year it was decided that they should be received into the branch hospital at the North Front, but no additional accommodation was provided. During the epidemic of 1896 temporary provision was made for eight or ten more beds by the erection of a wooden building. The naval and military authorities have recently added two buildings with eight beds each for the reception of military and naval cases. The Colonial Government contemplates making additions and improvements to its buildings at an early date. The hospital is in charge of an assistant surgeon, subject to the general supervision of the surgeon of the Colonial Hospital. The number of patients under treatment at the Colonial Hospital in 1906 was 632 (495 males and 137 females). Of these 423 were discharged as cured, 84 as relieved, and 28 as not improved. There were 46 deaths. In the small-pox hospital there were 122 under treatment during the year (82 males and 40 females). Of these 99 were discharged cured and 11 died. The average stay of those who were discharged cured was about 42 days. The number of persons seeking treatment at the Colonial Hospital as out-patients continues to increase, no less than 12,367 persons (of whom 982 came from Linea) having been treated in 1906, as against a total of 10,584 in 1905 and 6397 in 1904. New buildings were erected in 1884 for the special purposes of a lunatic asylum, which was placed under the direction and management of the police magistrate, subject to the control of the Governor. There is a resident superintendent and the surgeon of the Colonial Hospital makes daily visits. Patients are admitted on the order of the police magistrate and certificate of any two duly qualified medical practitioners. There were 46 patients under treatment during last year.

## BIER'S TREATMENT.

*To the Editors of* THE LANCET.

SIRS,—Will some kind reader please tell me where I can find a detailed account of Bier's treatment?

I am, Sirs, yours faithfully,

August 17th, 1907.

MAC.

## POPULAR BACTERIOLOGY.

WE fear that the Paris correspondent of the *Daily Telegraph* has been the victim of a "scieutific" hoax; if not, he must have seriously misunderstood the information which was given him about the bacteriological flora found in a first-class carriage on the Bordeaux "rapide" train. He summarised the result of this inquiry in a recent issue of the *Daily Telegraph* and described the germs found in the carriage as follows: (1) penicilium (*sic*) glaucum, which produces appendicitis; (2) Asperbillus (*sic*) niger, which affects the digestion; (3) Bacterium Termo, or Proteus zuckeri, which generally weakens the human body (this seems a mild way of putting it); (4) stapylococus (*sic*) pyogenes aureus, which begets phlegmon; (5) Micrococcus tetragenos of tuberculosis; (6) Koch's bacillus of tuberculosis; (7) Klebsloffler's (*sic*) bacillus of diphtheria; (8) the coli bacillus which produces typhoid; (9) streptococcus lanceolatus niger, the microbe of pneumonia; and (10) Legros' bacillus septicus, which inflicts gangrene. Thus "bad begins but worse remains behind," for the playful comment is appended, "Dr. Legros' charmingly named 'sceptical bacillus' may finish you off. The sceptical microbe gives you gangrene, an affection of which there is no possible doubt." If the contributor to our esteemed contemporary had been inoculated with the "sceptic" microbe he might have avoided making the above errors.

## THE SEVEN STAGES OF DRINK.

AN interesting medical pendant to Shakespeare's great picture of the seven ages of man was furnished by a medical man when giving evidence at Marylebone police court recently. The practitioner, as reported in the daily press, took for his text not mankind in general but the drunken individual, and described seven stages in his evolution. He began by stating that he had found the defendant in "a mellow, comfortable state of drunkenness and recovering from irritation." This analytical description led Mr. Plowden, the officiating magistrate, to inquire further into the normal course of drunkenness and he drew from the witness the following list of the successive stages of an attack of alcoholic intoxication: 1, irritable; 2, mellow and comfortable; 3, pugnacious; 4, affectionate; 5, crying; 6, collapsed and incapable. But even this did not satisfy Mr. Plowden and he induced the witness to add his seventh stage as a finishing touch: "If you give them a little more—death." The magistrate was very interested and expressed a hope that the defendant would profit by the professional instruction she had heard. The medical man certainly produced a very complete composite clinical picture, but all the cases of drunkenness do not, of course, pass through the first six stages; the average drunkard exhibits one or two of them to the exclusion of the others, as no doubt the witness would have said had he been asked.

## THE VALUE OF BLOOD SERUM IN SURGERY.

IN connexion with an article on the Use of Animal Blood Serum in Surgery, by Mr. W. Stuart-Low, which was published in THE LANCET of May 4th, 1907, p. 1221, our attention has been drawn to a statement that bovinine, which is a defibrinated bullock's blood carefully preserved and containing all the elements of nutrition present in arterial blood, has been employed by many surgeons throughout the United States as a topical dressing in granulating surfaces and chronic ulcerations as well as in general tissue necroses. It is claimed that while serum albumin is of undoubted value yet its field of usefulness as compared with bovinine is narrow. While bovinine is sterile it is said that it not only protects the newly forming granulations but to some extent also supplies nutritive agents which encourage the healing process. Bovinine is simply applied to the surface of the wound or skin-graft, the sterile gauze being retained in position by a sterile gauze bandage kept constantly wet with bovinine. This plan prevents the dressing from becoming irritating and offensive which is often the case when it is protected by oiled muslin or a silk or rubber tissue.

◆

*Provincial.*—D was right in going to the case in the circumstances and evidently he is ready to hand over the case to E. If, however, the patient insists that D continue in attendance she has a right to do so.

*Interested.*—Our correspondent must not advertise his invention as Dr. ——'s patent tooth brush.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædio (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

**THURSDAY** (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St.

George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (31st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

### LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (26th).—Post-Graduate College (West London Hospital, Hammersmith road, W.).—12 noon: Pathological Demonstration. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.

**TUESDAY** (27th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Diseases of the Skin. 5 P.M.: Clinical Lecture.

**WEDNESDAY** (28th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

**THURSDAY** (29th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.

**FRIDAY** (30th).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Diseases of the Skin. 5 P.M.: Lecture:—Cases of Skin Disease.

**SATURDAY** (31st).—Post-Graduate College (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

## EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of The Lancet should be addressed *exclusively* "To the Editors," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* The Lancet *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

The Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in The Lancet of July 6th.

### VOLUMES AND CASES.

Volumes for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of The Lancet at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach The Lancet Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to The Lancet Offices.

Subscribers, by sending their subscriptions direct to The Lancet Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The Colonial and Foreign Edition (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from The Lancet Offices or from Agents, are:—

| For the United Kingdom. | | To the Colonies and Abroad. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. Charles Good, The Lancet Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

Subscribers abroad are particularly requested to note the rates of subscriptions given above. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of The Lancet necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of The Lancet have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—The Manager, The Lancet Offices, 423, Strand, London, England.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

The Lancet Office, August 22nd, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 16 | 29·89 | N.W. | 0·06 | 123 | 68 | 54 | 54 | 57 | Cloudy |
| " 17 | 29·85 | W. | 0·02 | 114 | 72 | 57 | 57 | 63 | Cloudy |
| " 18 | 29·81 | S.W. | 0·31 | 102 | 69 | 56 | 58 | 61 | Cloudy |
| " 19 | 29·85 | S.W. | ... | 116 | 68 | 54 | 55 | 58 | Cloudy |
| " 20 | 30·00 | W. | 0·05 | 114 | 61 | 50 | 53 | 57 | Cloudy |
| " 21 | 30·30 | N.W. | 0·10 | 109 | 65 | 49 | 51 | 55 | Cloudy |
| " 22 | 30·33 | N.W. | ... | 107 | 64 | 55 | 53 | 58 | Cloudy |

**During the week marked copies of the following newspapers have been received:**—*Daily Express, Morning Advertiser, Broad Arrow, Pall Mall Gazette, Hackney Mercury, Plymouth Morning News, Kensington News, Chiswick Times, Essex Times, Hertfordshire Standard, Essex Newsman, Gresham Standard, Oxford Chronicle, Glasgow Weekly Herald, Wellingborough News, Oxford Gazette, Leamington Spa Courier, Midland Evening News, Norwich Press, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Dr. B. Anningson, Cambridge; Dr. John Hill Abram, Liverpool; Messrs. Aked and Aked, Lond.: Anglo-American Pharmaceutical Co., Croydon; Aeosan Co., Birmingham, Manager of; Messrs. Allen and Hanburys, Lond.; Mr. C. S. Ascherson, Lond.

**B.**—Mr. E. Baker, Birmingham; Mr. H. Burrows, Lond.: Mrs. L. H. Beals, M.D., Ahmednagar, India; Bayer Co., Lond.; Mr. C. Birchall, Liverpool: Messrs. Burroughs, Wellcome and Co., Lond.; Mrs. Bate, Clifton; Mr. B. Bird, Thrapstone; Mr. Rupert Bucknall, Lond.

**C.**—Mr. F. W. Collinson, Preston; Cumberland Infirmary, Carlisle, Secretary of; Mr. F. W. Clarke, Chorlton-cum-Hardy; Crooksbury Santorium, Farnham, Medical Superintendent of; Dr. Myer Coplans, Leeds; Cornwall County Council Sanitary Committee, Truro, Chairman of; Central Provinces, India, Education and Medical Department of, Nagpur; Dr. C. Campbell-Horsfall, Cheltenham; Mr. Charles Cofman, Lond.: Catholic University School of Medicine, Ireland, Dublin, Registrar of.

**D.**—Dr. Clement Dukes, Rugby; Dr. J. Dulberg, Manchester; Devonshire Hospital, Buxton, Secretary of; Mr. J. T. Dodd, Oxford; Divisional Surgeon.

**F.**—Dr. Gordon FitzGerald, Manchester; Frame Food Co., Lond.; Mr. A. Fullerton, Belfast; Dr. G. M. Foy, Dublin.

**G.**—Dr. A. G. Gibson, Oxford; Messrs. G. Gillies and Co., Glasgow; Mr. Howard M. Gaynair, Ancon, Panama; Dr. Alfred Gubb, Aix-les-Bains; Dr. Edwin Goodall, Lond.; Gloucester General Infirmary, Secretary of; Great Yarmouth Hospital, Secretary of; G. F. R.; Guardian Assurance Co., Lond., Manager of; Glasgow Royal Infirmary, Secretary of; Messrs. R. W. Greeff and Co., Lond.; Grimsby and District Hospital, Secretary of; Mr. W. J. Greer, Newport, Monmouthshire.

**H.**—Dr. F. G. Haworth, Darwen; Mr. John Hatton, Buxton; Dr. John T. Hewetson, Birmingham; Mr. R. B. Hope, Lond.; Messrs. T. Holland and Son, Lond.

**I.**—The International Insurance Encyclopædia, New York, Managing Editor of; Interested.

**J.**—Dr. E. Jepson, Durham; J. D. M.; Mr. R. R. James, Lond.; Dr. H. Jarmulovsky, Kiel.

**K.**—Dr. C. F. Knight, Edinburgh; Messrs. R. A. Knight and Co,. Lond.

**L.**—Mr. H. Littlewood, Leeds; Dr. P. H. Lang, Camperdown, Victoria, Australia; Messrs. Lee and Nightingale, Liverpool; Leicester Infirmary, Secretary of; Leicester Corporation, Medical Officer of Health of: Leicester Guardians, Assistant Clerk to.

**M.**—Mr. A. Mackenzie, Inverness; *Midland Counties Herald*, Birmingham; Miss F. A. Mason, Wellington, Shropshire; Miss Mary E. H. Morris, M.B., Bath; Mr. L. McGavin, Lond.; Captain J. P. Murphy, R.A.M.C., Liverpool; Mr. M. Manshard, Basle; Dr. Myra Mackenzie, Hanley; Manchester Hospital for Consumption, Secretary of; Mill House, Purleigh, Superintendent of; Mr. E. Merck, Lond.; Sir Philip Magnus, M.P., Lond.; Dr. C. A. McBride, Lond.; Dr. S. G. Moore, Huddersfield; Manchester Royal Eye Hospital.

**N.**—Messrs. Nichols and Sellers, Lond.; Messrs. Newman and Bond, Barnsley; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.; North London Collegiate School for Girls, Assistant Secretary of; N.

**O.**—Miss E, Temple Orme, Lond.

**P.**—Mr. Y. J. Pentland, Edinburgh; Dr. C. D. Pence, Chicago; *Penny Pictorial Magazine*, Lond., Editor of; Provincial; Sir Harry B. Poland, Lond.; Messrs. Peacock and Hadley, Lond.

**R.**—Mr. R. Redpath, Newcastle-on-Tyne; Royal Southern Hospital, Liverpool, Secretary of; The Roads Improvement Association, Lond., Hon. Secretary of; Dr. A. F. Blagdon Bichards, Swansea; The Royal Sanitary Institute, Lond.; Messrs. Reynell and Son, Lond.; Dr. R. J. Roberts, Lond.; Dr. A. Reid, Blackpool.

**S.**—Dr. W. C. Swain, Bristol; Mr. G. Seymour Stritch, Dublin; Dr. E. S. Simpson, Beverley; Sheffield University, Registrar of; Sheffield Royal Hospital, Secretary of; St. Mary's Hospitals, Manchester, Secretary of; Smith's Advertising Agency, Lond.; Mr. N. K. Saha, Calcutta; Dr. J. Selkirk, Boston Spa; St. Thomas' Hospital Medical School, Lond., Secretary of; Scholastic, Clerical, &c., Association, Lond.; *South Wales Argus*, Newport, Monmouthshire; Mr. P. Sahel, Lond.; Mr. F. Smith, Brighton; Southport Infirmary, Secretary of; Mr. J. Stead, Lond.; *Shrewsbury Chronicle*, Manager of; St. Bartholomew's College, Lond., Warden of the.

**T.**—Dr. W. Aldren Turner, Lond.; Trinity College, Dublin, School of Physic, Registrar of.

**U.**—University of Edinburgh, Faculty of Medicine, Dean of; University College, Dundee, Secretary of; University College Hospital Medical School, Lond., Dean of.

**W.**—Mrs. William White, Lond.; Dr. Leonard Williams, Lond.; Dr. William Wright, Glasgow; Messrs. Wright and Co., Bristol; Mr. F. M. Wildish, Glasgow; Mr. R. Walker, Aberdeen; Mr. A. B. Waseniuska, Helsingfors; Dr. F. E. Walker, Uxbridge; Dr. Oswald C. Withrow, Fort Ontario, Ontario: Captain F. Winslow, R.A.M.C., Lond.; Messrs. H. Wilson and Son, Lond.; Messrs. W. B. Saunders Co., Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Dr. J. Adam, West Malling; Mr. H. Appleton, The Lizard; A. M. R. S.

**B.**—Mr. W. B. Brown, Sunninghill; Mr. G. G. Brown, Headingley; Mr. E. T. Blakeney, Roscommon; Mr. J. E. L. Bates, Lond.; Mr. H. Butterfield, Northampton; Dr. B.; Mr. H. C. Bradley, Burton-on-Trent: Dr. Brooks, Llandrindod Wells.

**C.**—Dr. J. Colvin, Glasgow; Chelsea Guardians, Clerk to the; Messrs. J. and A. Carter, Lond.; "Conifers," Hampton Wick, Medical Superintendent of; C. B. M.; C. F. P.

**D.**—Dr. H. Davies, Lond.; Messrs. Davy, Hill, and Hodgkinson, Lond.

**E.**—Mr. J. Evans, Maidstone; Mr. J. E. Eltoft, Pontypool; Mr. A. E. Elliott, New York; Mr. R. Edwards, Hastings; E. H. B.; E. W. D.

**F.**—Dr. R. Fleming, Glasgow; Mr. P. G. Foulkes, Truro; Dr. Forsyth, Lond.: Mr. L. O. Fuller, East Harling; Mr. F. T. Fagge, Llanfairfechan; Mrs. Forster, Christon Bank.

**G.**—Miss Gillibrand, Stockport; Mr. D. Grey, Port Seton.

**H.**—Mr. J. Heywood, Manchester; Hospital for Sick Children, Lond., Secretary of; Messrs. R. and W. Hosie, Hamilton; Mr. W. Handcock, Bradford; Mr. M. C. O. Hurly, Ynyshir; Mr. T. Hawksley, Lond.; Messrs. Abel Heywood and Son, Manchester.

**I.**—Miss Inge, Haslemere; Mr. C. B. Ingham, Friedrichshafen.

**J.**—Messrs. D. Hill Jack and Son, Glasgow; J. H. S. G.; J., Sheffield; J. M. B.; J. H., Lond.; J. E. E.; J. M. G.; J. H. M.

**L.**—Mr. H. K. Lewis, Lond.; Dr. P. W. Latham, Cambridge; Mr. A. Leckie, Lond.

**M.**—Dr. W. G. Mumford, Bath; Mr. W. G. Mortimer, Martin; Messrs. Moir and Co., Lond.; Mr. W. Mackenzie, Gosforth; Dr. B. G. Morison, Lond.; Mr. R. Mayman, Conway; Mr. R. Mosse, Berlin.

**N.**—Newport and Monmouthshire Hospital, Secretary of.

**P.**—Mr. C. J. Perrott, Bristol; Mr. J. F. Power, Gosport; Perth, City of, Royal Infirmary, Secretary of.

**R.**—Mr. E. J. Radcliffe, Otley; Dr. D. Russell, Linares; Miss E. M. Ruttledge, Bassaleg; Mr. J. Robinson, Kidderminster; R. M.

**S.**—Dr. J. Selkirk, Boston Spa; Staffordshire County Asylum, Stafford, Clerk to the; Salford Royal Hospital, Secretary of; Sheffield Corporation, Clerk to the; S. D. S.; Scarborough Hospital, Hon. Secretary of; Dr. F. E. Shipway, Chiswick; St. Mungo's College, Glasgow, Cashier of; Mr. J. Sampson, York.

**T.**—Mr. J. Thin, Edinburgh.

**W.**—Dr. H. Wales, Gargrave; Mr. A. H. Wade, St. Albans; Wallasey Dispensary, Secretary of; W. S. M., Lond.; W. B.; Worcester County Asylum, Powick, Clerk to the.

---

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.**

THE LANCET.

*LONDON: SATURDAY, AUGUST 31, 1907.*

## An Address to Students.

In the early days of October words of welcome and of warning will be addressed in a certain number of medical schools to the students entering upon the medical educational curriculum. The official introductory lecture is not now, as it was by former generations, considered to be an essential feature of the beginning of the winter session in every medical school. Nevertheless, either in the old-established manner, or through the pages of its hospital journal, or in the speeches at the inaugural dinner, or in some other formal or informal manner, each institution engaged in medical education endeavours to bring home to its new students the importance of the step they are taking in seeking entrance to the medical profession. These individual sectional congratulations will necessarily to a large extent be occupied in pointing out the advantages of the particular university or medical school to which the fortunate student has attached himself, and in endeavouring to sow the seeds of the institutional *esprit de corps* which is such an important element of medical as of all other forms of education.

### A Word of Welcome.

The Lancet—and when we speak for ourselves we speak for our readers—regards the annual festival of the induction of novices from a somewhat wider standpoint than that naturally taken by the introductory lecturer attached to one of the seats of medical learning. The five or six probationary years spent in what is technically regarded as the educational period cannot be clearly defined from that long period of study which does not cease till the medical man retires altogether from the practice of his profession. Once a medical student always a medical student, and our congratulations are offered not so much to the recruit as he enters upon his five years of more or less irresponsible institutional life as to the budding professional man seeking the perpetual service of two hard masters—science and the public. We most heartily and unreservedly, then, congratulate all those men who have decided on October 1st, 1907, to put their hand to the plough. There is only one class of man who must be exempted from such congratulations—he who, looking round for an occupation in life in which to make money easily has chosen the medical profession: with him we must condole, for he has mistaken his path. To all others, whether they be attracted by a love of science, by the possession of mechanical aptitude, by a desire for service to the afflicted, or merely by a wish to follow in the footsteps of a father or some other hero of their youth, our welcome is cordial and confident. To all such an assurance may be given that hard as a medical man's life may be in particular instances, in the great majority of cases the good features undoubtedly predominate over the evil. That there are a large number of thoroughly unsatisfactory features in many branches of practice none can doubt. Those who would minimise the defects in the organisation of the medical profession which prevent it from fulfilling its work with complete satisfaction, either to the public or to its own members, would do an ill-service to the recruits about to enter its ranks. To conceal these defects can only lead to disillusion when the student passes from the hospital to the full work of his profession. To bring them before him in his early days may secure that he will be prepared to take his share in minimising or removing them whenever opportunity arises. The existing defects, both in medical education and in the practice of medicine, are of a class that is amenable to treatment. They need deter none from joyfully and hopefully entering our ranks. Whilst the founder of The Lancet was exposing in his vigorous manner the glaring evils of the profession of his time there appeared year by year in this journal an address of welcome to new students. To Wakley, keen reformer as he was, we doubt not that the existence of abuses to be battled with and overthrown seemed an added attraction to those entering the profession. We take a less combative line and do not set forth the need of medical reform as a bait to intending students, but we confidently ask the attention of all those who are joining us to some aspects in which the education for the practise of our profession falls short of the ideal, in order that being forewarned they may be forearmed, and so may secure for themselves and for their future patients the best that is possible under existing conditions.

### The Value of Medical Training.

In urging each new colleague to try to escape the pitfalls that beset him during his official educational curriculum we appeal direct to his self-interest. The avoidance of evils that abound in his subsequent professional practice will later require the exercise of a considerable amount of altruism. It is fortunate, therefore, that the student's life in a medical school is well calculated to develop a true spirit of unselfishness. In fact, as a school of character it is doubtful if any better could be devised than the routine career of a medical student. It is not claimed that every medical student at the end of his five years' curriculum will be found to have become a saint. But if he has not developed manly qualities of self-restraint, courage, gentleness, and forbearance it is not for want of opportunity of practising these virtues. To every youth entering on his probationary training for manhood there are opportunities, whatever calling he has chosen, of showing the stuff that he is made of and of putting into practice the precepts he has learnt from his teachers, and especially from those candid friends his school fellows. During the earlier period of a medical student's career the conditions do not differ much from those of all other boys on leaving their schools of general education. The medical student's temptations may be rather greater in so far as supervision by authority over medical students is in most instances less than in the case of youths passing into office work in connexion with commerce or other branches of activity. But it must be remembered that many medical students are not youths at all, while the interest of the work is incomparably greater than in most other callings, and the risk of leisure for which reasonable occupation is hard to find need never be present to one who is entering upon the study of medicine. It is particularly in the second half of the hospital curriculum, when the student enters upon his strictly technical work, that he finds himself better placed than his contemporaries in other walks of life for unconsciously practising the higher virtues. Heaven forbid that we should schedule these virtues or that a progressive university should include their exercise amongst the compulsory subjects in an overloaded curriculum. It has been assumed by some hysterical writers that the frequent contact with pain and suffering which is a necessary feature of hospital life induces in medical students, and therefore in medical men, hardness of heart and want of sympathy. That such contact enables medical men to perform their necessary professional service without the exhibition of emotion is, of course, true, but that this implies the development of inhumanity is false. The constant opportunity of social service that a medical student can find in the wards and out-patient departments of our great hospitals is the best possible means of training his character for his future work. There is, perhaps, room for development in our hospitals of coöperation with other agencies, medical and lay, engaged in dealing with social problems. The meaning of, and the possible remedy for, the life tragedies revealed in our hospital wards would thus be made clearer. There is too much tendency, in London, at any rate, for each hospital to regard itself as an independent factor in dealing with disease. In the solution of the many sociological problems that confront us the medical profession is destined to take an important part, and there could be no better preparation for a medical man to carry out his share of the work than in studying fully the social conditions of the patients that apply for treatment at the hospitals. But the training would be still more effective if the student were taught something of the way in which sanitary, poor-law, and other authorities coöperate with the hospitals and the medical profession in the prevention as well as in the treatment of poverty, crime, and disease.

## THE LIMITATIONS OF THE MEDICAL CURRICULUM.

From the intellectual and more strictly educational standpoint the curriculum imposed upon medical students by the universities and licensing corporations has many defects. The curriculum is overcrowded, it is far too rigid, and above all it is seriously hampered by the requirements of the examinational system. The medical student may as well know these things on the threshold of his career. The mere school-boy must accept without question the course of study laid down by his masters; no good comes from raising doubts in his immature mind as to the advantages of the modern methods of education. But just as liberty to work or play must gradually be given to the undergraduate, so may the medical student, sometimes already a graduate, be invited to criticise the plans suggested for his education, and he should be allowed to some extent to choose for himself the methods best suited to his particular circumstances. Of course, he must pass his examinations, for only by passing examinations can he satisfy the State that he is fit to practise medicine. But we would strongly urge all students now commencing their studies to peruse the regulations put into their hands by authority not as if they were inspired documents to be literally obeyed but in a spirit of intelligent criticism. Let these regulations be recognised as attempts, by no means altogether successful, to meet the requirements of the average man and to checkmate the idler, while holding the balance fairly as between the opposing interests of universities, medical corporations and schools, and the State, and between the conflicting claims of the advancement of the science of medicine and the practical application of our art to the healing of disease. Properly regarded in this light as a compromise between many divergent views it is clear that official regulations can indicate an ideal course for very few individuals. Some men learn best from systematic lectures, others from personal intercourse with a demonstrator, others again from practical laboratory work, and still others by the burning of midnight oil over the perusal of text-books or monographs. An official curriculum must provide for all these methods of instruction, but the student himself and his most intimate teacher can say alone in what proportion they should be combined in any individual case. It is only after careful perusal of the regulations and conferences with a trusted teacher that a student can learn how far he may risk a relaxation of regulations in one or other direction in order that he may pursue to the full the course of study which will best develop the powers of his mind.

It is first essential that a medical student should have clearly before him the fact that the sole object of his five years' course of study is not the passing of his examinations. The passing of examinations is an incidental necessity of medical education, but the success of any man's course of study may be measured by the extent to which he has been able to shake off the fetters of the examination system. Harmful as is this system to true education, a great deal of its disadvantage could be avoided by a candid recognition by the student of the truly incidental character of an examination. He who reads a book or attends a course of lectures or practical work with the object of answering the questions which arise or have arisen in his own mind is making a proper use of the book or of the course of instruction. The moment he consciously uses either book or lecture in order to prepare himself to answer other people's questions the spirit of cram has entered and the spirit of true education suffers. To many students it may seem that this differentiation between the proper and the improper attitude towards their work is a subtle one and hardly to be maintained. It is just because it is so subtle that there is danger of its being overlooked. It is, however, vital, and the student who learns biology or chemistry not because he wants to know the deeply interesting facts of these enchanting sciences but because he wants to be able to answer the questions which the examiners at the preliminary scientific examination will ask a few months later, starts his medical education in a wrong spirit and bids fair to become one of the unhappy slaves of the examination system. Fortunately, there is no excuse, so far as the subjects of medical examinations themselves are concerned, for approaching them in any spirit but that of the most insatiable inquisitiveness. If the medical student's desire to know has not been already hampered by school methods he will have placed before him in crescendo scale subjects of study which none but the most *blasé* appetite could regard with indifference. The only possible difficulty is that the second and third courses are so inviting that there is fear that the earlier fare may suffer by comparison with those that come after—may be bolted and not digested.

### THE OVERCROWDING OF THE STUDENT'S TIME.

Medical students are sometimes consoled by their teachers for the inevitable delay in reaching the study of disease and in coming into contact with patients by a consideration of the usefulness of their early studies in enabling them to understand the later. There would not be the same necessity to plead utility if the prevalent system of examinations would allow the teachers of the ancillary sciences to present their subjects in their most interesting guise unhampered by scheduled courses of instruction and syllabuses for the guidance of external examiners. We do not propose to discuss the possibility of altering this state of things at the present moment, for that would be waste of time, but there is no reason why the student should not know what a casual perusal of recent proceeding at the meetings of the General Medical Council will reveal, that the medical curriculum is overcrowded and that the percentage of failures in examinations is quite unduly high when the industry of the pupils and the zeal of their teachers are taken into account. At the present time, while it is possible for an intelligent and industrious student, aided by a thoughtful teacher, to escape some of the difficulties of a multitude of examinations in a too rigid curriculum, it is not so easy to avoid the trouble. due to the excessive number of subjects to be dealt with. This overcrowding is especially noticeable in the latter part of his course, and is due to the fact that the State requires every medical man to be prepared to cope with a vast number of different emergencies. After he is qualified he may, and almost must, decide to restrict his practice to certain branches of professional work, but at the outset he is expected to show at least an elementary acquaintance with every professional department. It is only by the exercise of method and industry in a very high degree that it is possible for a medical student to acquire this elementary knowledge of all his subjects without running a risk that his acquaintance with each is superficial as well as elementary, while unfortunately the superficial acquaintance may suffice for the purposes of an examination even more aptly than deeper knowledge. It is essential that from the very commencement of his studies a student should work not only in the right spirit but with great industry and perseverance. He must look ahead and plan out his leisure time as well as his working hours if he is to pass his examinations in due sequence and also master the ground-work of his professional studies.

He must select forms of physical recreation which can be fitted in with the exacting duties in the medical school and will yet be sufficient to maintain a high standard of bodily health. Indifferent health will be a serious bar to the practice of medicine, and may prevent the satisfactory completion of the course of study necessary in order to secure legal qualifications. Physical exercise should be both a means of securing health and also of providing recreation and social intercourse. If it can secure social intercourse with non-medical students so much the better. Medical education is very engrossing and there is a material risk that a student's outlook may be narrowed despite, or because, of the plethora of subjects with which he has to make himself more or less familiar. He will need, when qualified, to have the widest possible knowledge of mankind and sympathy with the point of view of all classes. It is, therefore, well that a student, while not neglecting the social, literary, and sporting clubs of his own medical school, should take every opportunity of mixing with students in all other faculties of his university if he fortunately belongs to one. It is the ease with which such intercourse is obtained in the old universities that makes Oxford and Cambridge so valuable as places in which to pursue the earlier medical studies, while it is one of the set-backs to the success of the University of London that such intercourse is not yet systematically promoted. It should not, however, be impossible to secure the broadening influence of social intercourse in any city in which medical education is carried on, and it will be observed that all the provincial Scottish and Irish universities are located in or in the vicinity of comparatively large cities. The moral of our words of welcome and of warning, so far as the educational curriculum is concerned, is that its splendid opportunities and results may well be missed by the man who lets himself slide in the direction of least resistance, but will certainly be secured in more or less full measure by anyone who recognises the dangers and difficulties and sets out with the fixed purpose of making the five years of medical study the most profitable as well as the happiest years of his life.

### THE PROFESSIONAL OUTLOOK.

It is an inevitable disadvantage of the disappearance of the old apprenticeship system from medical education that only a small proportion of our modern students when first entering upon their work have a conception of what we may call the ideals of the profession. In a former generation the majority of general practitioners implanted in their pupils the professional spirit without which the highest scientific training must certainly fail in producing the right sort of medical practitioner. To-day this professional spirit must be evolved by other means if the profession is to maintain its noble traditions. If there is rather a loud outcry that these traditions are in special danger just now, we venture to hope that this is due to the excessive introspection and publicity of our time rather than to any real lowering of the high aim of the majority of the profession. This high aim is distinctly an unselfish one and must be kept constantly before each of us from the first moment of entrance into the ranks of medicine. It must be encouraged on all hands by precept and by example. Some believe that this high aim can even be compelled, to a certain extent, by regulations imposed by professional organisation. But a nation cannot be made sober by Act of Parliament, nor can a profession be inspired with lofty ideals by by-laws and codes of ethical rules. Yet such codes have their value, and of those who complain that to endeavour to govern the profession by codes agreed upon by the majority is to introduce the taint of trade unionism we would ask:—Can there be any objection to a professional union bent on maintaining in each of its units the highest traditions of an unselfish profession? Should we not all rejoice to see a profession united in its determination that every member shall do all in his power for the good of his patients and nothing that he can avoid that might harm his colleagues? It is such a spirit as this which has always actuated and still inspires the majority of the medical profession. If there is some fear that keenness of modern competition may lead to the introduction of conduct based on the commercial mottoes "caveat emptor" and "the devil take the hindmost," there are also signs that the power of the majority to prevent such conduct is steadily growing. We must teach our students from the outset the great difference which exists between our profession and a trade. He must be trained whilst still at the hospital to look forward to conducting his practice in accordance with the best professional ideals and to participating in movements for the strengthening of all the existing authorities within whose power it is to prevent backsliding in any branch of our calling.

### THE SCIENTIFIC SPIRIT.

Whilst endeavouring thus to adopt the right professional outlook the student must also acquire the true scientific spirit. Briefly this may be defined as the love of truth. The temptation to accept dogma for truth and speculation for demonstration is very great in medicine. The vast advances which are constantly taking place in our science make it above all things necessary that our students should acquire a capacity for judgment rather than a store of so-called facts. The facts of one generation of practitioners, even of one generation of students, are many of them discarded by the next. A man who has acquired a truly scientific spirit will be able to modify his point of view to suit new theories and to adapt his practice to the altered circumstances; the change of front will in his case mean a comprehension of the evolutionary principles of science. He who has merely imbibed the teaching of tradition will be without a guide when the foundations of the tradition are seen to be not truly laid. A medical man must love science for science' sake, and he must desire knowledge for the added power that it gives him to serve his fellow men. Whatever may be the medical school of the student's choice he will surely come in daily contact with men devoting themselves without stint to the search for truth. Whether the search be conducted in the laboratory or in the wards he will find his senior colleagues devoting themselves with equal zeal to the practical application of the truths of medical science to the relief of suffering. Let these men be his heroes and let him decide to carry out in practice the principles he will learn at their feet. Thus will his five years medical education be an education in the truest and highest sense and form a fitting prelude to the practice of a profession which with all its superficial faults remains one of the most satisfactory of human occupations.

## THE READING OF THE STUDENT.

IT has been our custom for very many years to make a selection among the books dealing with the various subjects of the medical student's scientific and professional education, and this selection has been subdivided usually into two great categories—viz., books recommended for pass examinations and books recommended for honours examinations. The selection of books was made with the coöperation of a representative group of professors, lecturers, and practical teachers in the different medical schools, and was regularly revised from year to year. We believe that so far as it is possible to pick out a library for the medical student that should be of practical use to him we accomplished this task, but we have decided to attempt it no longer. The place of books in the medical curriculum has been steadily altering, until the point is now reached that the only persons who can give valuable advice to medical students as to what books they should buy are those who actually superintend the instruction in the different subjects. The catalogues to be found in all recent issues of the Students' Number of THE LANCET enumerate books within whose covers there is contained more—much more—than it can be conceivably necessary for any medical student to know. We have nothing to add to and nothing to subtract from these catalogues. They do not comprise a very large library for an earnest student to read in a curriculum extending over five years, but if the books are read properly they will amply suffice. Whatever care be devoted to the making of a selective list the result will not be always perfectly satisfactory for every student, for there is no work on any subject which is suitable for all candidates and all examinations. Consequently when there are two books of equal standing it may be impossible to say which is the better of the two, and in such cases we have always given the reader a choice of alternatives. But however carefully the attempt be made to choose books for the medical student which may be useful to him in all the emergencies of his educational career, it is bound for the future to be only an attempt. The real work of the medical student is done now in laboratories, in the dissecting room, in the wards, and in laboratories again. Systematic reading, which will certainly render his negotiation of examination tests much more ready, must be done in accord primarily with his own ability to learn from books, and secondarily in response to the advice of his many teachers.

We may, however, usefully give a few general hints on the subject of reading by students. The student has to remember that there are two objects which he should have in view: the first, which is usually looked upon as the more urgent, is the passing of the various examinations which are necessary for the degree or diploma he desires to obtain. The other object is, however, of more importance ultimately, and this is the attainment of a thorough knowledge of his profession so that he may practise it to the benefit alike of his patients and himself. The books which are most suitable for the second object are not necessarily those which would afford most assistance in attaining the first. The examinations must, alas, have the prominent place while he is yet a student, for until he has surmounted these obstacles he is entirely precluded from the practice of his profession. In choosing books for a particular examination the student must avoid both reading too little and reading too much, and it is here that the advice of a teacher or a senior student should be sought. For personal knowledge of the student is necessary before he can be advised in the best way either as to what he should read or as to how he should read it. The greatest danger lies, perhaps, in reading too widely. Many students dip into many books and fail to master any. The student should recognise the scope of his examinations and should first endeavour to limit his reading to the required standing. When, however, he has made himself master of that portion of the subject which the regulations of the examination require he may go farther. A book might be very useful or even necessary for one examination and useless for another of a different standard, and if useless it is really harmful, for its perusal will take up time which might be more usefully employed. The output of volumes from the medical press has increased enormously; but on the other hand, it is every year less and less important which particular work the student selects.

Only a few years ago he was limited to the medical treatises appearing in the British Isles, but now in addition he has the very large supply of works from the other side of the Atlantic, for several American publishing houses have established branches in this country from which they are putting out works of the highest order. From these three things—the large supply of text-books, their excellent and authoritative nature, and the addition of many valuable American works to our library—arises the impossibility of suggesting to the student what should and what should not be the book he ought to buy.

### RECENT MEDICAL LITERATURE.

In drawing attention to some of the more interesting and important publications of the year we do not attempt in the course of a few brief remarks to furnish a substitute for detailed criticism. The books mentioned have all been noticed in our own columns and in those of our contemporaries during the past 12 months, and the reasons why we think it right to give them further mention appear in our reviews.

In Medicine and Pathology there have been reissues of several of the standard text-books, notably the second volume of the second edition of Dr. HOBART AMORY HARE'S *Text-book of Practice* (Henry Kimpton, 21*s.*); another work of American origin, *Modern Clinical Medicine*, by Dr. R. C. CABOT (Sidney Appleton, 21*s.*); and an excellent *Text-book on General and Special Pathology*, by Dr. R. T. HEWLETT (J. and A. Churchill, 10*s.* 6*d.*). The first volume of a new edition of Professor OSLER'S *System of Medicine* is published this month, Dr. T. MCCRAE, associate professor of medicine and clinical therapeutics at the Johns Hopkins University, being Professor OSLER'S collaborator. Other new books that may be recommended to the student in this section of his work are *Minor Maladies and their Treatment*, by Dr. LEONARD WILLIAMS (Baillière. Tindall, and Cox, 5*s.* net); *Physical Diagnosis*, by Dr. E. LE FEVRE (Hodder and Stoughton, 10*s.* net); *Medical Diagnosis*, by Dr. GRAHAM BROWN and Dr. W. T. RITCHIE (William Green and Sons. 8*s.* net); and *Chemical Pathology*, by H. GIDEON WELLS (W. B. Saunders and Co., 15*s.*). *Climatotherapy and Balneotherapy*, by Sir HERMANN WEBER and Dr. F. PARKES WEBER (Smith, Elder, and Co., 15*s.* net), has made its appearance in the third edition. Although this is not exactly a book for students, yet it is a valuable adjunct to the literature of medical treatment, and, as it is easy reading, we recommend the student to peruse it. Three interesting books dealing with the diseases of children appeared during the year. The first of these, *Functional Nervous Disorders in Childhood*, by Dr. L. GUTHRIE (Oxford Medical Manuals, Henry Frowde and Hodder and Stoughton, 7*s.* 6*d.*); is an extremely interesting work; the functional neuroses and psychoses of childhood have been all reviewed with extreme care. A second edition of Dr. H. KOPLIK'S well-known *Diseases of Infancy and of Childhood* (H. Kimpton, 25*s.*), and a work by Dr. A. C. COTTON on the *Medical Diseases of Infancy* (Lippincott, 15*s.*), will also be found of great interest. The fifth edition of Dr. H. LEWIS JONES'S *Medical Electricity* (H. K. Lewis, 12*s.* 6*d.*) has appeared, and a useful work has been written by Mr. HIGHAM COOPER on the *Use of X Rays in General Practice* (Baillière, Tindall, and Cox, 2*s.* 6*d.* net). Dr. HUGH WALSHAM'S *Roentgen Rays in the Diagnosis of Diseases of the Chest* (H. K. Lewis, 6*s.* net), can be thoroughly recommended.

No new work of first importance in General Surgery appeared during the year, though many interesting monographs on surgical topics have been written. The developments of surgery, no less than the merits of the accepted classics on the subject, make it appear unnecessary that for the present a new systematic work should be produced. The demand for new editions of three works on anæsthetics sufficiently shows that the dearth of surgical text-books does not necessarily mean any falling off in the amount of operative surgery performed. Dr. DUDLEY BUXTON'S work on *Anæsthetics* makes its appearance in a fourth edition (H. K. Lewis, 7*s.* 6*d.*) and Dr. FREDERIC HEWITT'S *Anæsthetics and their Administration* (Macmillan and Co., 15*s.*) in a third edition, while Dr. J. BLUMFELD'S much smaller *Manual on Anæsthetics* (Baillière, Tindall, and Cox, 2*s.* 6*d.* net) appears in a second edition.

Of the literature of Ophthalmological Surgery the principal contributions have been the third volume of Part I. of Mr. J. H. PARSONS'S *Pathology of the Eye* (Hodder and Stoughton, 15*s.* net) and the ninth edition of Sir H. R. SWANZY'S *Handbook of Diseases of the Eye* (H. K. Lewis, 12*s.* 6*d.*). Both these are absolutely first-class works indispensable to ophthalmologists. A useful book, entitled *Ophthalmic Operations*, has also been written by Mr. HAROLD GRIMSDALE and Mr. E. BREWERTON (Kegan Paul, Trench, Trübner, and Co., 12*s.* net).

Among text-books in Gynæcology and Midwifery the best new book of the year is Dr. T. W. EDEN'S *Manual of Midwifery* (J. and A. Churchill, 10*s.* 6*d.* net), in the review of which we were able to recommend it to students and practitioners alike as an excellent text-book.

The most important contribution to the literature of Public Health of the year was the addition to the *System of Hygiene* published under the editorship of the late Professor BROUARDEL and Dr. E. MOSNY (J. B. Baillière and Son, 9 francs). The last section to appear is the tenth, and deals with Naval Hygiene.

Of the three most important works on Psychiatry one only, the *Hygiene of the Mind* (Methuen and Co., 7*s.* 6*d.*), is by a British physician, Dr. T. S. CLOUSTON, and the work is more or less of a popular nature. The author has striven in every direction to be practical. Another valuable book is a *Text-book of Psychiatry for Physicians and Students* (Baillière, Tindall, and Cox, 21*s.* net), written by Dr. L. BIANCHI, professor of psychiatry of the University of Naples, and translated from the Italian by Dr. J. H. MACDONALD. The book exhibits a cosmopolitan acquaintance with the literature of the subject and is very well illustrated. The second edition of the English translation of Dr. EMIL KRAEPELIN'S *Lectures on Clinical Psychiatry* (Baillière, Tindall, and Cox, 10*s.* 6*d.*) also has made its appearance.

In the different departments ancillary to medicine many new editions of works which are of value to all students and teachers have made their appearance: for example, a new edition has appeared of Dr. E. H. STARLING'S *Elements of Human Physiology* (J. and A. Churchill, 12*s.* 6*d.* net), of Professor W. D. HALLIBURTON'S *Essentials of Chemical Physiology* (Longmans, Green, and Co., 4*s.* 6*d.* net), of Professor E. A. SCHÄFER'S *Essentials of Histology* (Longmans, Green, and Co., 10*s.* 6*d.*), and a ninth edition of *The Frog*, by Professor MARSHALL (David Nutt, 5*s.*). Sir ALMROTH E. WRIGHT has produced a *Handbook to the Microscope* (Constable and Co., 21*s.*) which explains to the student the principles of microscopy. The work is not an absolutely simple one, but those students who, not being satisfied with rule of thumb, are prepared to take the trouble to read Sir A. E. WRIGHT'S book will be amply repaid. Professor WERNER SPALTEHOLZ'S *Hand Atlas of Human Anatomy*, in three volumes (Lippincott, £2 2*s.*), is a valuable work for students and teachers.

### SERIAL MEDICAL LITERATURE.

The student will find it of advantage to read medical journals and magazines occasionally. We do not suggest that he should do this in any systematic manner. The text-books that he must master are sufficiently numerous; some of the time, at any rate, that he can spare had better be spent in the pursuit of general literature. But he will often benefit by reading odd articles in current medical publications. Many of the official lectures at the Royal Colleges, for example, most of which are published at full length in our columns, form excellent epitomes of our knowledge of important subjects. The student who takes the trouble to compare his views, as derived from his manual and his practical experience, with the information given by these lectures, will be surprised at the gaps in his knowledge, but gratified to find that in the process of filling up these gaps he has mastered his subject.

---

**THE INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.**—The senate of the city of Hamburg has invited the Fourteenth International Congress on Hygiene and Demography to visit the hygienic institutes of Hamburg. The excursion to Hamburg will take place after the closure of the Congress, provision having been made for 500 persons, ladies and gentlemen, to participate. The city of Hamburg is publishing a special volume to commemorate this visit and to serve at the same time as a guide to the institutes to be visited. An official reception will take place at the Hamburg Town-hall. A local committee is making arrangements for the reception of visitors. Lodgings at Hamburg will be procured on application to the Tourist Office of the Hamburg-Amerika Linie, 8, Unter den Linden, Berlin W. 64.

# THE STUDENT'S GUIDE.

## SESSION 1907-1908.

### A PREFATORY STATEMENT.

THE quantity of the subjects which fall necessarily within the scope of our educational number has now become very large, and it may be as well to explain the scheme upon which the following guide to a medical career in this country is constructed.

The General Council of Medical Education and Registration, conveniently known as the General Medical Council, is the controlling authority, under the Privy Council, of the medical education of the land. Under the provisions of the Medical Acts various universities and corporations are recognised as being examining bodies whose degrees or diplomas entitle to medical registration, and it is among the duties of the General Medical Council to keep the official register and to insure by periodical visitations that the tests of the various examining bodies are maintained at a due standard. We begin by detailing the powers of the General Medical Council, and go on to give in detail the regulations of the various examining bodies.

But the student must be taught as well as examined, and the systems under which he can obtain instruction do not conform to one pattern. The curriculum of the medical student falls into two parts, the preliminary subjects and the professional subjects. The two cannot be sharply divided—for example, to which does materia medica belong? The extent to which they are allowed to overlap under different schemes of education varies a good deal, while the extent to which they ought to overlap is a perennial subject of debate. The preliminary subjects are, to mention only the four important ones, chemistry, biology, anatomy, and physiology, and they are taught in the school proper; the professional subjects, medicine, surgery, and obstetric medicine—under which headings all forms of specialism are included—must be learned in the wards of a hospital. All schemes of medical education require a school and a hospital, but there their uniformity ends.

There are nine universities in England, four in Scotland, and two in Ireland which possess a faculty of medicine. They are prepared to educate their students to a varying extent, or to delegate the preparation of their candidates to other recognised bodies; they then examine their students, generally and in England invariably, with the help of examiners brought in from other medical centres, and bestow degrees in medicine upon the successful candidates. We give the regulations of these universities and follow with those of the Royal Colleges of the three divisions of the United Kingdom, of the Society of Apothecaries, and of the Apothecaries' Hall of Ireland.

From this point we pass to the consideration of the hospitals at which the latter part of the medical training of the students must be received. The students at these hospitals may look to the hospital medical school for the whole of their training, as, for example, the student working for the diploma of a corporation would generally do; or they may be taking out a clinical course at the hospital, intending to graduate at one of the universities. In a sense, therefore, the medical school and wards of every hospital form part of a university, by supplying an integral section of the teaching required by the university from candidates for medical graduation; and this has been recognised in the reconstitution of the University of London under which all the medical schools of the metropolis are affiliated to the University of London.

Detailed information concerning all the medical schools and their hospitals naturally forms the bulk of the STUDENTS' NUMBER of THE LANCET; but we follow upon this with an account of the condition of medical employment in the Naval, Military, and Indian Medical Service, and in the Public Health Service, concluding with a report upon the system of education in dental surgery.

We think that the reader with this brief prefatory statement before him will know where to look for any subject upon which he wants enlightenment.

# GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

### POWERS AND DUTIES OF THE GENERAL MEDICAL COUNCIL.

As there is apparently, even among members of the medical profession, a great amount of ignorance as to the powers and duties of the General Medical Council, we think it well to lay clearly before our readers what the General Medical Council is and also what it is not.

Many of the false ideas on the subject are due to the use of the shortened title, "General Medical Council." The full title is, "General Council of Medical Education and Registration of the United Kingdom." This title is in accordance with the Medical Act of 1858, by which the General Medical Council was established under the Privy Council to enable persons requiring medical aid to distinguish qualified from unqualified practitioners. The Council was thus instituted not primarily for the benefit of the medical profession but to insure an efficient medical service to the public. It is obvious that by so doing the profession itself gained, in that official sanction was given to reputable practitioners only, while a proper guarantee was afforded to the public that the standard of medical education should always keep abreast of the scientific knowledge of the day. The powers of the Council under which it fulfils these important functions fall under four heads. It is first a registering body: it registers the entry of students upon their medical studies and also the attainment by them of the degrees or other qualifications that legally entitle them to practise medicine. This last duty forms its chief service to the State, as a complete list of practitioners of legal standing is thus rendered available for the information of the public. Secondly, it assures the public that the education of medical men is kept up to an efficient standpoint by maintaining at the proper pitch the standard of the various medical examinations. Thirdly, it is a penal and disciplinary body, having power to remove from the Register any practitioner adjudged guilty of conduct "infamous in a professional respect." Here again it is the public interest that is first considered, although these powers are for the very material advantage of the medical profession. The last duty of the Council is the codification of pharmaceutical remedies, and it may be mentioned that the periodical sale of the British Pharmacopœia is a source of income that does much to insure the Council's solvency. Reform in the administration of the finances of the Council has of recent years removed acute pecuniary strain from that body, but the day should soon come when the State, recognising the public value of the work of the Council, should be willing to subsidise its efforts. Registrars are appointed by the General Council and by the Branch Councils to keep registers of qualified persons. They are bound by Section XIV. of the Act to keep their registers correctly, a duty which, mainly owing to the apathy of members of the medical profession, can only be performed with difficulty.

It is as well here to put down the advantages, such as they are, of being duly registered. A duly registered practitioner may sue in the courts of law for the recovery of charges for medical attendance or advice, or surgical attendance or advice, or for the supply of medicine, or for the performance of any operation—provided that he is not debarred from suing by being a Fellow or a Member of any corporation which objects to its Fellows or Members so suing. He may be exempted, if he so desire, from serving on juries, from serving sundry corporate and parochial offices, and from serving in the Militia. Only a registered practitioner can hold appointments in the navy, army, and in sundry Poor-law and other institutions. Only a registered practitioner can sign a valid medical certificate. Removal of the name from the Register debars a man from all the above-mentioned privileges.

The General Medical Council is in no way a medical protection society or a medical defence union. It is not a professional union or a guild charged with looking after the interests of the medical profession after the manner of the old trades guilds, except in so far as it is concerned with the education of medical students. It has no powers over any member of the medical profession except to remove the name of any offending member from the roll of the profession or Medical Register. It cannot take away any degree, or diploma, or licence, and even if a practitioner is struck off the Medical Register there is nothing in the existing state of the law to prevent such practitioner continuing to practise, provided that he does not use any name or title implying that he is registered. Practitioners may be removed from the Medical Register (1) if convicted of felony or misdemeanour in England, or in Ireland, or in Scotland of any crime or offence, and (2) on being adjudged by the General Medical Council to have been guilty of "infamous conduct in a professional respect."

The General Medical Council is, we repeat, primarily a body charged with looking after medical education; it is but little concerned with medical politics and, as a matter of fact, the time of the Council is almost entirely taken up with considering educational and registration matters, the latter including the penal cases of removal from the Register. The Council at present consists of 34 members, of whom, as will be seen by the annexed list, all but 10 are official representatives of some corporate body. Five members are chosen by the Crown on the advice of the Privy Council, and five others are elected by the members of the medical profession as Direct Representatives.

President of the General Council.—Dr. Donald MacAlister. Members of the General Council.—Dr. Norman Moore, chosen by the Royal College of Physicians of London; Mr. Henry Morris, Royal College of Surgeons of England; Sir Hugh Reeve Beevor, Bart., Apothecaries' Society of London; Mr. Arthur Thomson, M.B., University of Oxford; Dr. Donald MacAlister, University of Cambridge; Sir George Hare Philipson, University of Durham; Dr. Philip Henry Pye-Smith, University of London; Mr. Alfred Harry Young, M.B., Victoria University of Manchester; Dr. Robert Saundby, University of Birmingham; Dr. Richard Caton, University of Liverpool; Dr. Alfred George Barrs, University of Leeds; and Dr. William Tusting Cocking, University of Sheffield. Sir John Batty Tuke, M.P., chosen by the Royal College of Physicians of Edinburgh; Dr. James William Beeman Hodsdon, Royal College of Surgeons of Edinburgh; Dr. John Lindsay Steven, Faculty of Physicians and Surgeons of Glasgow; Sir Thomas Richard Fraser, M.D., University of Edinburgh; Sir Thomas McCall Anderson, University of Glasgow; Dr. David White Finlay, University of Aberdeen; and Dr. John Yule Mackay, University of St. Andrews. Sir John William Moore chosen by the Royal College of Physicians of Ireland; Sir Thomas Myles, Royal College of Surgeons in Ireland; Dr. Francis George Adye-Curran, Apothecaries' Hall of Ireland; Sir Charles Ball, University of Dublin; and Sir Christopher John Nixon, Bart., Royal University of Ireland. Nominated by His Majesty, with the advice of his Privy Council: Mr. Charles Sissmore Tomes, Mr. William Henry Power, C.B., Sir John Williams, Bart., K.C.V.O., Dr. David Caldwell McVail, and Dr. James Little. Elected as Direct Representatives: Dr. Langley Browne, Dr. H. A. Latimer, Dr. L. A. McManus, Dr. Norman Walker, Dr. William Bruce, and Dr. Leonard Kidd. Treasurers of the General Council: Dr. Philip Henry Pye-Smith and Mr. Charles Sissmore Tomes.

### THE EDUCATIONAL CURRICULUM.

*Professional Education.*—The course of professional study after registration shall occupy at least five years. The Final Examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

*Registration and Preliminary Examination of Medical Students.*—The following are the General Medical Council's Regulations in reference to the registration of students in medicine:—

Every medical student shall be registered in the manner prescribed by the General Medical Council. The registration of medical students shall be placed under the charge of the branch registrars. Every person desirous of being registered as a medical student shall apply to the branch registrar of the division of the United Kingdom in which he is residing; and shall produce or forward to the branch registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has attained the age of 16 years, and has commenced medical study. The branch registrar shall enter the applicant's name and other particulars in the Students' Register and shall give him a certificate of such registration. Each of the branch registrars shall supply to the several licensing bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is registrar, a sufficient number of blank forms of application for the registration of medical students. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than 15 days before the date of registration. In addition to the universities and schools of medicine there are many institutions where medical study may be commenced. Applications for special exceptions are dealt with by the Students' Registration Committee, which reports all such cases to the Council.

The Preliminary Examination in General Education, required to be passed previously to registration as a medical student, is as follows:—

1. English language, including grammar and composition. 2. Latin, including grammar, translation from unprescribed Latin books, and translation of English passages into Latin. 3. Mathematics, comprising (*a*) arithmetic, (*b*) algebra, including easy quadratic equations, and (*c*) geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions. 4. One of the following subjects: (*a*) Greek, (*b*) a modern language.

In many cases the Council will not accept certificates of pass in Preliminary Examination in General Education unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of medicine have been passed at the same time.

A degree in Arts of any university of the United Kingdom or of the colonies or a certificate of having passed the final examination for a degree in Arts or Science of any university in the United Kingdom is considered a sufficient testimonial of proficiency.

H. E. Allen, LL.B., Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 54, George-square, Edinburgh.—Richard J. E. Roe, Registrar of the Branch Council for Ireland, 35, Dawson-street, Dublin.

### THE EXAMINING BODIES.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student.

#### I.—*Universities in the United Kingdom.*

*University of Oxford.*—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Responsions. Moderations.

*University of Cambridge.*—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Previous Examination. General Examination.

*University of Durham.*—Matriculation Examination for Science, Letters, and Music. Senior Local Examinations.

*University of London.*—Matriculation Examination.

*Victoria University of Manchester.*—Matriculation Examination.

*University of Birmingham.*—Matriculation Examination.

*University of Liverpool.*—Matriculation Examination.

*University of Leeds.*—Matriculation Examination.

*University of Wales.*—Matriculation Examination.

*University of Edinburgh.*—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

*University of Aberdeen.*—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

*University of Glasgow.*—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

*University of St. Andrews.*—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery. Final Examination for the diploma of L.L.A.

*University of Dublin.*—Public Entrance Examination. Examination for the first, second, third, or fourth year in Arts.

*Royal University of Ireland.*—Matriculation Examination.

*Oxford and Cambridge Schools Examination Board.*—Lower certificate (to fulfil the Council's requirements). Higher certificate (to include the required subjects). Leaving certificate (the subjects to be passed at one time).

### II.—*Medical Licensing Bodies.*

*Royal Colleges of Physicians and Surgeons in Ireland.*—Preliminary Examination.

### III.—*Educational Bodies other than Universities.*

*College of Preceptors.*—Examination for a First Class Certificate; Preliminary Examination for Medical Students.

*Intermediate Education Board of Ireland.*—Middle Grade Examination; Senior Grade Examination.

*Educational Institute of Scotland.*—Preliminary Medical Examination.

*Scottish Education Department.*—Leaving Certificates in Lower and Higher Grades and in Honours.

*Central Welsh Board.*—Senior Certificate Examination.

### IV.—*Indian, Colonial, and Foreign Universities and Colleges.*

Every Certificate from Indian, Colonial, and Foreign Universities and Colleges must contain evidence that the Examination has been conducted by or under the authority of the Body granting it, must include all the subjects required by the General Medical Council, and must state that all the subjects of Examination have been passed in at one time; copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose vernacular is other than English an Examination in a Classical Oriental Language may be accepted instead of an Examination in Latin. The German Abiturienten-Examen of the Gymnasia and Real-gymnasia and the examinations entitling to the French diplomas of Bachelier ès Lettres and Bachelier ès Sciences are recognised by the General Medical Council.

The remainder of the curriculum, though all under the supervision of the Council, is in detail in the hands of the various degree- and diploma-granting bodies whose representatives are members of the General Medical Council. In the next pages we give the regulations of the various examining bodies, but it must always be remembered that the examinations are under the supervision of the General Medical Council who visit the various centres in turn and closely inspect the procedure.

# REGULATIONS
OF THE
# MEDICAL EXAMINING BODIES IN THE UNITED KINGDOM.

## UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine, *B.M. and D.M.*, and two degrees in Surgery, *B.Ch. and M.Ch.*

Graduates in Arts (B.A. or M.A.) are alone eligible for these degrees. The most convenient course for the B.A. degree for intending graduates in Medicine is to take Responsions, the Preliminary Science Examinations mentioned below, and the Final Honour School of Physiology. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed:—1. Preliminary subjects: Mechanics and Physics, Chemistry, Animal Morphology, and Botany. 2. Professional. (*a*) First Examination: Subjects—Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School; Human Physiology, unless he has obtained a first or second class in Animal Physiology in the Natural Science School; Human Anatomy and Materia Medica with Pharmacy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene. The approximate dates of the examinations are as follows:—Preliminaries—Mechanics, Physics, and Chemistry, December and June; Animal Morphology December and March; Botany, March and June; Professional (First and Second B.M.), June and December.

*The First Examination* for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. The subjects of this examination may be presented separately or in any combination or in any order, provided Anatomy and Physiology be passed together.

*The Second Examination* may be passed after the completion of the first but Pathology and Hygiene may be taken before or with the remaining subjects. Before admission to the Second Examination candidates must present Certificates of attendance on a course of laboratory instruction in Practical Pathology and Bacteriology and of having acted as post-mortem clerk for three months, surgical dresser for six months, and clinical clerk for six months. Also he must produce certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, and of proficiency in the practice of Vaccination. Also in respect of the First Examination candidates must present certificates showing that they have dissected the whole body once and have attended courses of laboratory instruction in Practical Histology and Practical Physiology.

*The degree of D.M.* is granted to Bachelors of Medicine of the University provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The Regius Professor may direct the dissertation to be read in public. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed the M.Ch. examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

*Scholarships and Prizes.*—Scholarships in Natural Science (Chemistry, Physics, Biology) of the average value of £80 per annum, tenable for four years and renewable under certain conditions for a fifth year, as well as Exhibitions of a less annual value, are awarded after competitive examination every year by most of the Colleges. Notices of vacancy, &c., are published in the *University Gazette*, and all particulars may be obtained by application to the Science Tutors of the several Colleges. One Radcliffe Travelling Fellowship is awarded annually after an examination held in February. It is tenable for three years and is of the annual value of £200. The stipend is paid by University College. The examination is in Physiology, Pathology, and Hygiene, and is partly "practical." Candidates must be graduates in Medicine of the University. The holder must travel abroad for the purpose of medical study. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject, including Physiology or Pathology. The Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of Pathological Research. The Radcliffe Prize, founded by University College (1907) is of the value of £50 and is awarded biennially for research in some branch of medical science.

More detailed information may be obtained f[illegible] the University Calendar; from the Examination Statut[illegible] 1902, which contain the official schedules of the several subjects of examination in both Arts and Medicine; from the Student's Handbook to the University (all of which are published by the Clarendon Press); from the Regius Professor of Medicine; and from the Professors in the several departments of medical science.

Professors—Anthropology: E. B. Tylor, M.A. Botany (Sherard): S. H. Vines, M.A. Chemistry (Waynflete): W. Odling, M.A. Comparative Anatomy (Linacre); G. C. Bourne, D.Sc. Human Anatomy: A. Thomson, M.A. Medicine (Regius): W. Osler, D.M., Hon. D.Sc., Natural Philosophy (Sedleian): A. E. H Love, D Sc. Physics (Wykeham): J. S E. Townsend, M.A. Physiology (Waynflete): F. Gotch, M.A., D.Sc. Zoology: E. B. Poulton, M.A., D.Sc. Pathology: G. Dreyer, M.D.

In addition to the University lectures and classes the several Colleges provide their undergraduates with tuition for all examinations up to the B.A. degree.

## UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms (three years) by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done before coming into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board, the Oxford or Cambridge Senior Local Examinations, the London Matriculation Examination, the Scotch Education Department, Responsions at Oxford, and the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either continuing mathematical and classical study and passing the ordinary examinations for B.A. or going out in one of the Honour Triposes. The Natural Sciences Tripos is the most appropriate, as some of the subjects are practically the same as those for the first and second M.B. examinations.

For the degree of *Bachelor of Medicine* (*M.B.*) five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second, and the first part of the third, examinations for M.B. Cambridge being now a complete School of Medicine, all the requisite lectures and hospital practice may be attended here, and many students remain to attend lectures and hospital practice until they have passed the first part of the third examination for M.B. The supply of subjects for Dissection is abundant, and the laboratories for Pathology, Bacteriology, and Pharmacology are well equipped. Addenbrooke's Hospital provides for the necessary clinical training.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics and Elementary Biology. These parts may be taken together or separately. The *second* includes Human Anatomy and Physiology. The *third* is divided into two parts—viz., (1) Pharmacology and General Pathology; (2) Principles and Practice of Surgery, Midwifery and Diseases Peculiar to Women, Principles and Practice of Physic. The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

As Operative and Clinical Surgery now form parts of the third M.B. examination candidates who have passed both parts of that examination are admitted to the registrable degree of *Bachelor of Surgery* (*B.C.*) without separate examination and without keeping an Act.

The degree of *Doctor of Medicine* (*M.D.*) may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools with *vivâ voce* examination; and an extempore essay has to be written on some subject relating to Physiology, Pathology, the Practice of Medicine, or State Medicine.

For the degree of *Master of Surgery* (*M.C.*) the candidate must have passed all the examinations for B.C., or if he is an M.A. have obtained some other registrable qualification in surgery. He is required either (1) to pass an examination in Surgical Anatomy and Surgical Operations, Pathology, and the Principles and Practice of Surgery, and to write an extempore essay on a Surgical Subject; or (2) to submit to the Medical Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years at least must have elapsed from the time when he completed all required for the degree of B.C. Before submitting original contributions he must have been qualified at least three years.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, Pharmacology, and General Pathology may be obtained upon sending a stamped directed envelope to the Registrary, Cambridge.

*Examinations in Tropical Medicine and Hygiene.*—Two Examinations in Tropical Medicine and Hygiene are conducted yearly by the State Medicine Syndicate of the University of Cambridge. The next examinations will be held in Cambridge on Jan. 8th and August 5th, 1908. Each examination will extend over four days.

Any person whose name is on the Medical Register is admissible as a candidate to the Examination provided (I.) that a period of not less than 12 months have elapsed between his attainment of a registrable qualification and his admission to the examination; (II.) that he produce evidence, satisfactory to the Syndicate, that he has diligently studied Pathology (including parasitology and bacteriology) in relation to Tropical Diseases, Clinical Medicine, and Surgery at a Hospital for Tropical Diseases, and Hygiene and Methods of Sanitation applicable to Tropical Climates. As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with Tropical Medicine or Hygiene; (2) any Certificate or Diploma in Public Health or Sanitary Science he may have obtained from a recognised Examining Body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the examination and by the examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The examination will be partly oral and partly practical and will have reference to the nature, incidence, prevention, and treatment of the epidemic and other diseases prevalent in tropical countries. It will comprise the following subjects: 1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical and microscopic, of poisonous or contaminated foods and waters. 2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of tropical climates, including—malaria; blackwater fever; trypanosomiasis; relapsing fever; dengue; yellow fever; plague; tetanus; beri-beri; dysentery and hepatic abscess, cholera, enteric fever, Malta fever, and specific diarrhœal affections of the tropics; diseases due to cestode and other worms; filariasis; bilharzial disease; specific boils, sores, and other cutaneous affections; mycetoma; ophthalmic affections of the tropics; affections caused by poisonous plants and animals, and by poisoned weapons; sunstroke. 3. The general effects on health in the tropics of seasons and climate, soil, water, and food. Personal hygiene, acclimatisation. Principles of general hygiene, with special reference to food- and water-supplies, sites, dwellings, drainage, and the disposal of refuse. The sanitation of native quarters, camps, plantations, factories, hospitals, asylums, jails, pilgrim, and coolie ships. Principles and methods of disinfection.

Every candidate who passes the examination to the satisfaction of the examiners will receive from the University a diploma testifying to his knowledge and skill in tropical medicine and hygiene.

The fee for the examination is £9 9*s*., and all applications for information should be addressed to Professor G. H. F. Nuttall, F.R.S., 3, Cranmer-road, Cambridge.

The Professors, Readers, and Lecturers in the various subjects are as follows. Professors—Anatomy: A. Macalister, M.D. Biology (Quick): G H. F. Nuttall, Sc.D. Botany: A. C. Seward, M.A. Chemistry: G. D. Liveing, M.A. Medicine (Downing): J. B. Bradbury, M.D. Natural Philosophy (Jacksonian): Sir James Dewar, M.A. Pathology: G. Sims Woodhead, M.A. Physic (Regius): T. Clifford Allbutt, M.D. Physiology: J. N. Langley, M.A. Surgery: F. H. Marsh, M.A. Zoology, &c.: A. Sedgwick, M.A. Readers—Botany: F. F. Blackman, M.A. Chemical Physiology: F. G. Hopkins, M.A. Lecturers—Physics: G. F. C. Searle, M.A., and C. T. R. Wilson, M.A. Botany: A. G. Tansley, M.A. Chemistry: Dr. Sell and Dr. Fenton. Organic Chemistry: S. Ruhemann, M.A. Advanced Morphology of Vertebrates: H. Gadow, M.A. Advanced Morphology of Invertebrates: A. E. Shipley, M.A. Advanced Physiology: W. H. Gaskell, M.D., and L. E. Shore, M.D. Physiology: H. K. Anderson, M.D. Physiological and Experimental Psychology: W. H. Rivers, M.A. Medical Jurisprudence: B. Anningson, M.D. Medicine: L. Humphry, M.D. Midwifery: A. C. Ingle, M.D. Surgery: G. E. Wherry, M.A., F.R.C.S. Pathology (Huddersfield): T. S. P. Strangeways, M.A. Physiological Anthropology: W. L. H. Duckworth, M.D.

## UNIVERSITY OF LONDON.

The University of London was established by Royal Charter in 1836 as a purely examining and degree conferring body with several affiliated colleges but no direct teaching functions. In 1900 it was reconstituted under the Act of Parliament 1898 and became a teaching body. Many schools already existing became constituent colleges, including all the metropolitan medical schools. It is necessary that the teachers in these should be recognised and approved by the Senate as conducting work of university rank, and in this way the University may be said to have benefited the whole of medical education in London. It also appoints teachers in special subjects to give lectures at the University and the question of a further centralisation of preliminary scientific studies is at present occupying the very serious attention of the University and its constituent schools. The medical degrees awarded by the University are those of M.D., M.S., and M.B., B.S., the two latter being now given together as a graduating degree, whereas formerly the M.B. alone was a qualifying degree and the B.S. was taken optionally as a separate examination.

*The Matriculation Examination.*—The examinations take place three times in each year—namely, on Sept. 15th (if that day be a Monday, or if not, on the Monday next preceding the 15th), on the second Monday in January, and on the second Monday in June (or July, as may be hereafter determined). The examinations in January and June (or July), but not that in September, may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the colonies. Every candidate must, on or before August 24th for the September examination, on or before Nov. 25th for the January examination, and on or before April 25th for the June (or July) examination, apply by postcard to the Principal for a form of entry, of which the first in order must be returned 14 days before the commencement of the September examination, the second on or before Dec. 1st, and the third on or before May 1st, accompanied in the same cover by a certificate showing that the candidate has completed his sixteenth year, and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, or a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate if of full age, will be accepted. As candidates cannot be admitted after the list is closed any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Principal, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2. If he withdraws his name before the last day of entry it shall be returned to him. If he fails to present himself he shall be allowed to enter for a subsequent Matriculation within eight months on payment of £1. If he retires after the commencement of the examination or fails to pass it the full fee of £2 shall be payable on every re-entry. Candidates must show a competent knowledge of each of the following five subjects, according to the details specified: 1. English—Composition, Précis-writing, salient facts in English History and Geography. 2. Elementary Mathematics—Arithmetic, Algebra (including quadratic equations and graphs of simple functions), and the subjects of Euclid (Books I. to IV.). 3. Latin, or Elementary Mechanics, or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry, or Elementary Botany. 4 and 5. Two of the following subjects, neither of which has been taken under Section 3 (if Latin be not taken one of the other subjects must be another language from the list): Latin, Greek, French, German, Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced), Elementary Mechanics, Elementary Chemistry, Elementary Physics (Heat, Light, and Sound), Elementary Physics (Electricity and Magnetism), and Botany. Additional subjects, of which, however, candidates must give notice two months previous to the examination, are: Arabic, Sanskrit, Spanish, Portuguese, Italian, Hebrew, and Zoology. A pass certificate signed by the Principal is delivered to each successful candidate after the report of the examiners shall have been approved by the Senate.

*Internal and External Students.*—Students of the University may be either internal or external. Internal students are those who have matriculated at the University and are studying in a school or schools or under one or more of the teachers of the University. The medical schools in question are those connected with University College Hospital, King's College Hospital, St. Bartholomew's Hospital, the London Hospital, Guy's Hospital, St. Thomas's Hospital, St. George's Hospital, the Middlesex Hospital, St. Mary's Hospital, Charing Cross Hospital, Westminster Hospital, and the London (Royal Free Hospital) School of Medicine for Women. The London School of Tropical Medicine and the Lister Institute of Preventive Medicine are also recognised as schools of the University in special departments. External students are those who undertake approved courses of study at schools recognised by the University but not belonging to it.

*Provincial Examinations for Matriculation.*—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Principal of the University, who will then make all necessary arrangements. Besides the University fee, a fee usually varying from £1 to £3 is charged by the local authorities and must be paid *at the local centre* immediately before the commencement of the several examinations.

*Bachelor of Medicine and Surgery.*—Every external candidate for the degree of Bachelor of Medicine and Surgery will be required—1. To have passed the Matriculation examination in this University not less than five years previously. 2. To have passed the Preliminary Scientific examination Part I. (Inorganic Chemistry, Physics, and Biology) not less than nine months after Matriculation, and the Preliminary Scientific examination Part II. (Organic Chemistry) not less than six months after Part I. 3. To have been engaged in his professional studies during five years subsequently to Matriculation and four years subsequently to passing Part I. of the Preliminary Scientific examination at one or more of the medical institutions or schools recognised by this University, one year at least of the four being spent in one or more of the recognised institutions or schools in the United Kingdom. 4. To pass two examinations in Medicine. In order to be admitted to the Bachelor's degrees internal students are required—1. To have attended prescribed courses of study in one or more schools of the University for five years after registration as internal students. 2. To have passed Part I. of the Preliminary Scientific Examination not less than one year after Matriculation, and Part II. of the same examination not less than six months after Part I. 3. To have passed two examinations in Medicine.

*Preliminary Scientific Examination.*—The Preliminary Scientific Examination, Part I. (Inorganic Chemistry, Physics, and Biology), will take place twice in each year, commencing on the third Monday in January and on the second Monday in July. It must be passed by internal students not less than one academic year after matriculation and by external students not less than nine months after matriculation. Every candidate must apply (internal students to the academic registrar and external students to the external registrar) for a Form of Entry on or before May 24th or Dec. 5th, which must be returned, accompanied by the proper fee, not later than June 1st for the July examination or Dec. 12th for the January examination. The fee is £5 for each entry to the whole examination, provided that all the subjects are taken at one time. When less than the whole examination is taken at one time it is £2 for each subject. The examination will include papers, practical work, and oral questions on Inorganic Chemistry, Physics, Botany, and Zoology. Candidates must present themselves either (1) in Inorganic Chemistry, Physics, and Biology; or (2) in Inorganic Chemistry and Physics; or (3) in Biology. If they fail in any one subject they may present themselves for re-examination in that subject alone, provided that if they fail in both inorganic chemistry and physics they must present themselves for re-examination in these two subjects taken together. Part II. of the Preliminary Scientific Examination will take place twice in each year, commencing on the Thursdays following the third Monday in January and the second Monday in July. No candidate will be admitted to this examination within six months of having passed

Part I. Every candidate must apply (internal students to the academic registrar and external students to the external registrar) for a form of entry on or before May 24th or Dec. 5th, which must be returned not later than June 1st for the July examination or Dec. 12th for the January examination. No fee will be charged for a first entry, but £2 will be charged for each subsequent entry. The examination will include a paper, practical work, and oral questions in Organic Chemistry.

*Intermediate Examination.*—The Intermediate examination in Medicine takes place twice in each year, commencing on the third Monday in January and on the first Monday in July. The subjects of the examination are Anatomy, Physiology and Histology, and Pharmacology, including Materia Medica. No candidate shall be admitted to this examination unless he have passed Part I. of the Preliminary Scientific examination at least two years previously and Part II. at least one year previously. Internal students must have completed the second and third years' course of study prescribed for them by the University and external students must produce certificates of having subsequently to having passed Part I. of the Preliminary Scientific examination been a student during two years at one or more of the medical institutions or schools recognised by this University and of having attended (1) a course of not less than 100 lectures on Anatomy; (2) a course of Dissections for not less than 12 months; (3) a course of not less than 60 lectures on Physiology; (4) courses of Experimental Physiology, Histology, and Physiological Chemistry for not less than three months each; (5) lectures and demonstrations on Pharmacology, Pharmacy, and Materia Medica for not less than three months; and (6) Practical Pharmacy for not less than two months. These certificates (as is the case also with all the certificates hereinafter mentioned) must be transmitted to the Registrar at least four weeks before the commencement of the examination. Fee for this examination £10.

*M.B., B.S. Examination.*—The M.B., B.S. examination takes place twice in each year, commencing on the last Monday in October and on the first Monday in May. No candidate will be admitted to this examination within two academic years from the date of passing the Intermediate examination. The M.B., B.S. examination under the regulations now described was held for the first time in October, 1904. Bachelors of Medicine of this University who graduated in or before May, 1904, may obtain the B.S. degree by passing the Surgical part of the M.B., B.S. examination. Every candidate must produce certificates of having passed the intermediate examination and of having subsequently attended courses of instruction in (1) Principles and Practice of Medicine, including a two months' course of instruction at a recognised Fever Hospital; (2) Clinical Methods and Physical Diagnosis; (3) Insanity; (4) Therapeutics; (5) Vaccination; (6) Principles and Practice of Surgery; (7) Operative Surgery, Surgical Anatomy, Practical Surgery, and the Administration of Anæsthetics; (8) Diseases of the Eye, Ear, and Throat; (9) Midwifery and Diseases of Women; (10) Practical Midwifery, the conduct of at least 20 Labours, and practice as a Clinical clerk in Gynæcological work; (11) Pathology and Bacteriology; (12) work of the Post-mortem room; (13) Forensic Medicine; and (14) Hygiene. He must also have attended the Medical and Surgical practice of a recognised hospital for two years and a fever hospital for two months. For internal students the above form the subjects of the fourth and fifth years of study as prescribed by the University. Candidates as external students in medicine must have been engaged in professional study during five years subsequent to matriculation and four years subsequent to passing the Preliminary Scientific Examination Part I. at one or more of the schools recognised by the University for the purpose. Candidates will be examined in Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, Midwifery, and Diseases of Women. The subjects may be divided into two groups—namely: (1) Medicine, Pathology, Forensic Medicine, and Hygiene; and (2) Surgery, Midwifery, and Diseases of Women. These groups may be taken either separately or together. The fee is £10 for each entry to the whole examination and £5 for examination or re-examination in either group. There will be no separate examination held for Honours but the list of candidates who have passed will be published in two parts—namely, an Honours list and a Pass list.

*Doctor of Medicine.*—The examination for this degree takes place twice in each year, commencing on the first Monday in December and on the first Monday in July. Candidates must have taken the degrees of M.B., B.S. not less than two years previously but for those who have taken the M.B., B.S. degrees with Honours or have done certain original work this period of delay may be reduced to one year. They may present themselves for examination in one of the following branches, namely: (1) Medicine; (2) Pathology; (3) Mental Diseases; (4) Midwifery and Diseases of Women; (5) State Medicine; and (6) Tropical Medicine. Certain conditions have to be fulfilled in each case, varying according to the nature of the branch in question. Any candidate for the degree of M.D. may transmit to the Registrar, not less than two months before the commencement of the examination, a thesis or published work having definite relation to the branch of Medicine in which he is a candidate, and if the thesis be approved by the examiners the candidate may be exempted from the written examination. The fee is £20.

*Master in Surgery.*—The examination for the degree of Master in Surgery takes place twice in each year and commences on the first Monday in December and on the first Monday in July. Candidates must produce certificates of having taken the degrees of M.B. and B.S. not less than two years previously and of having subsequently held for at least six months a resident or non-resident Surgical hospital appointment. The examination is conducted by means of printed papers and *vivâ-voce* interrogation, and the subjects are Surgery, Surgical Pathology and Anatomy, a Clinical examination, and operations on the dead body. Any candidate for the degree of M.S. may transmit to the Registrar, not later than two months before the commencement of the examination, a thesis or published work having definite relation to Surgery, and if the thesis be approved by the examiners the candidate may be exempted from the written examination in Surgery. The fee is £20.

Full details of the prescribed curricula of study, with the syllabus for each examination and the names of the recognised Internal and External Schools of the University can be obtained from the Academic Registrar, University of London, S.W.

The teaching staff of the University is organised under two heads: 1. Appointed teachers—i.e., such as are appointed by, and are paid out of the funds of, the University. 2. Recognised teachers—i.e., such as have been appointed and are paid by the several schools of the University and other institutions at which instruction is given under the auspices of the University and have been recognised by the Senate as conducting work of University standard. Thus in the Faculty of Medicine, although there are at present no appointed teachers, there are 401 recognised teachers belonging to the various metropolitan medical schools. In the Faculty of Science J. N. Collie, Ph.D., F.R.S., and S. Smiles, D.Sc., are the appointed teachers in Organic Chemistry; Sir William Ramsay, Ph.D., F.R.S., and N. T. M. Wilsmore, M.Sc., are appointed teachers in General Chemistry; and A. D. Waller, M.D., F.R.S., who is Dean of the Faculty and also Director of the Physiological Laboratory, is the appointed teacher in Physiology. There are 212 recognised teachers in the Faculty of Science. The lecturers in the Medical Sciences and the professors in the Faculties of Medicine in King's College, London, and University College, London, will be found enumerated under their respective medical schools.

## UNIVERSITY OF DURHAM.

One Diploma and six degrees are conferred—viz., the Diploma in Public Health and the degrees of Bachelor in Medicine, Bachelor in Surgery, Master in Surgery, Doctor in Medicine, Bachelor in Hygiene, and Doctor in Hygiene. These degrees are open both to Men and Women.

For the degree of *Bachelor in Medicine* there are four professional examinations. The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics. The subjects of the Second Examination are—Anatomy, Physiology, Materia Medica, Therapeutics, Pharmacology, Pharmacy. The subjects for the Third Examination are—Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology.

The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children.

It is required that at least one of the five years of professional education shall be spent in attendance at the University College of Medicine, Newcastle-upon-Tyne. Candidates who have passed the First and Second Examinations of the University will be exempt from First and Second Examinations of the Conjoint Board.

For the degree of *Bachelor in Surgery* every candidate must have passed the examination for the degree of Bachelor in Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Regional Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master in Surgery* candidates must not be less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.S. They must also have obtained the degree of Bachelor in Surgery of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor in Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice. The subjects of examination are:—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor in Medicine* candidates must be not less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.D. They must also have obtained the degree of Bachelor in Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor in Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must present an essay prepared entirely by himself, which must be typewritten, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the essay.

*Doctor of Medicine* (without residence).—The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under 40 years of age and shall have been in active practice for 15 years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, and Diseases of Women and Children, Pathology (Medical and Surgical), Anatomy (Medical and Surgical), Medical Jurisprudence, and Toxicology. The fee will be 50 guineas, of which 20 guineas will be retained if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees must give at least 28 days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-upon-Tyne. In the case of the M.D. (essay) examination candidates must send in their essays six weeks before the date of the examination.

Professors—Medicine: Sir G. H. Philipson, D.C.L. Surgery: F. Page, M.D., F.R.C.S. Physiology: T. Oliver, M.D. Anatomy: R. Howden, M.B. Comparative Pathology: G. R. Murray, M.D.

ARMSTRONG COLLEGE, NEWCASTLE.—Professors—Physics: H. Stroud, D.Sc. Chemistry: Phillips Bedson, D.Sc. Natural History: Assistant Professor, A. Meek. Botany: M. C. Potter, M.A.

## THE VICTORIA UNIVERSITY OF MANCHESTER.

Matriculation, which consists in signing the University Register, must precede entry upon any course of study. Those only can matriculate who are registered students of the University.

Four degrees in Medicine and Surgery are conferred by the University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Matriculation Examination (Faculty of Medicine), or to have passed such other examination as may be recognised by the University for this purpose.[1]

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will have attained the age of 21 years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination.

*The First Examination.*—The subjects of examination are as follows:—(1) Chemistry; (2) Physics; (3) Biology; (4) Materia Medica. Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects. The Examination is divided into three parts: Part 1, Physics and Chemistry; Part 2, Biology; Part 3, Materia Medica; and the candidates may pass in these parts separately under certain conditions.

*The Second Examination.*—The subjects of examination are as follows:—(1) Anatomy; (2) Physiology, including Physiological Chemistry and Histology. Candidates may pass in (1) and (2) separately under certain conditions.

*The Third Examination.*—(1) Pathology; (2) Pharmacology and Therapeutics; (3) Hygiene. These subjects may be taken separately under certain conditions.

*The Final Examination.*—The subjects of examination are as follows:—(1) Medicine, Systematic and Clinical (including Mental Diseases and Diseases of Children); (2) Surgery, Systematic, Clinical, and Practical; (3) Midwifery and Gynæcology (including Practical Gynæcology); (4) Forensic Medicine (including Toxicology). These subjects may be taken separately under certain conditions.

Candidates for the Final Examination must have completed the fifth year of medical study.

*Degree of Doctor of Medicine.*—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates may elect either (1) to present an original dissertation; or (2) to undergo an examination. The dissertation must embody the results of personal observation or original research, either in some department of medicine or of some science directly relative to medicine. The examination will consist of an examination in the Principles and Practice of Medicine, in Pathology, and in some other subject to be selected by the candidate. It will be partly written, partly practical.

---

[1] The following examinations are accepted in lieu of this:—1. The Board will grant exemption from the Matriculation Examination to graduates of any university of the United Kingdom, provided Latin has formed part of one of the degree examinations. 2. For particulars of the conditions under which holders of Certificates from the Universities of Oxford and Cambridge are entitled to exemption, the Calendar of the Joint Matriculation Board should be consulted. 3. Provided that the Certificate shows that all the subjects required by the General Medical Council have been included, the Board is prepared to receive applications for exemption from persons who hold Certificates of having passed the London Matriculation Examination. The fee for registering external Certificates when exemption is granted is £1.

*Degree of Master of Surgery.*—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; and (6) Pathology and Bacteriology.

Professors—Physics: E. Rutherford, M.A., D.Sc., F.R.S. Chemistry: H. B. Dixon, M.A., F.R.S. Organic Chemistry: W. H. Perkin, M.A., D.Sc., F.R.S. Zoology: S. J. Hickson, D.Sc., F.R.S. Botany: F. E. Weiss, D.Sc. Physiology: W. Stirling, M.D., D.Sc. Anatomy: A. H. Young, LL.D. Materia Medica: R. B. Wild, M.D. Comparative Pathology and Bacteriology: A. S. Delépine, M.Sc. Pathology: J. Lorraine Smith, M.D. Medicine: Graham Steell, M.D. Systematic Surgery: G. A. Wright, F.R.C.S. Clinical Surgery: F. A. Southam, F.R.C.S. Obstetrics and Gynæcology: Sir W. J. Sinclair, M.D. Forensic Medicine: J. Dixon Mann, M.D.

Communications should be addressed to the Registrar, The University, Manchester.

## UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., Ch.B., M.D., Ch.M., and also a degree and a diploma in Public Health. The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Elementary Biology. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognised by the University.

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—The student must have passed either the Matriculation Examination of the University or one of the following examinations. For the present the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of medical students, provided always that such examination shall have included the subjects of English, Latin, Mathematics, and any one of the following: Greek, French, German, or any other modern foreign language, together with Chemistry or Experimental Mechanics, or some other branch of Experimental Physics, and that all the subjects have been passed at one examination: (*a*) the previous examination of the University of Cambridge; (*b*) responsions of the University of Oxford; (*c*) the Preliminary or Matriculation Examination of any recognised University; (*d*) the (Higher) Certificate of the Oxford and Cambridge Examinations Board; (*e*) the Oxford or Cambridge Junior Local Examinations; with First or Second Class Honours, or with Distinctions in two subjects, which may be either languages or mathematics; (*f*) the Oxford or Cambridge Senior Local Examination. A Matriculation Examination will be held on Sept. 23rd, 1907, and succeeding days. First Examination.—Chemistry and Physics and Elementary Biology. Second Examination.—Anatomy and Physiology. Third Examination.—Pathology and Bacteriology, Materia Medica and Practical Pharmacy. Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, and Public Health. Two years' hospital work must have been accomplished. Final Examination.—Medicine, Surgery, Midwifery, Gynæcology, Therapeutics, Mental Diseases, and Ophthalmology. Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital and lunatic asylum. Vaccination instruction must be taken out and courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

*Degrees of Doctor of Medicine and Master of Surgery.*—At the end of one year from the date of having passed the final M.B., Ch.B. examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these degrees will be required to comply with the following regulations. Every candidate for the degree of M.D. shall present a thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations.

A thesis may be presented in any of the following departments of study: (*a*) Anatomy, including Comparative Anatomy, (*b*) Physiology, (*c*) Human or Comparative Pathology, (*d*) Bacteriology, (*e*) Pharmacology, (*f*) Therapeutics, (*g*) Medicine, (*h*) Mental Diseases, (*i*) Preventive Medicine or Public Health, (*j*) Toxicology, (*k*) Legal Medicine, (*l*) Midwifery.

Candidates for the degree of Ch.M. are required to comply with the following regulations:—At the end of one year from the date of having passed the final M.B., Ch.B. Examination candidates will be eligible to present themselves for the higher degree of Master of Surgery. Candidates for this degree will be required to comply with the following regulations: 1. Every candidate shall present a thesis, embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below; in addition the candidates will be required to pass a general examination in Principles and Practice of Surgery and to perform operations on the cadaver. 2. It will be in the power of the board of examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. 3. The candidate may be examined in that department of the medical curriculum from which the subject of his thesis is chosen and the examiners may require to see the notes of original observations on which the thesis is based, (*a*) Surgery, (*b*) Pathology, (*c*) Bacteriology, (*d*) Gynæcology. (*e*) Ophthalmology.

*Degree in Public Health.*—For the regulations for this degree and for the diploma in the same subject see p. 656.

*Fees.*—Matriculation, £2; First Examination, £2; Second Examination, £2; Third Examination, £2; Fourth Examination, £2; Final Examination, £2; Admission Fee to degrees of M.B., Ch.B., £6: M.D. or Ch.M., £2; Admission Fee to degree of M.D. or Ch.M.. £8.

Professors—Physics: J. H. Poynting, Sc.D., F.R.S. Chemistry: P. H. Frankland, Ph.D., F.R.S. Zoology: T. W. Bridge, Sc.D., F.R.S. Botany: W. Hillhouse, M.A. Medicine: R. Saundby, M.D., and A. H. Carter, M.D. Surgery: Bennet May, F.R.C.S., and G. Barling, F.R.C.S. Anatomy: A. Robinson, M.D. Physiology: E. W. Wace Carlier, M.D. Elementary Biology: T. W. Bridge, Sc.D., F.R.S. Therapeutics: A. Foxwell, M.D. Forensic Medicine: J. T. J. Morrison, F.R.C.S. Hygiene and Public Health: A. Bostock Hill, M.D. Midwifery: E. Malins, M.D. Gynæcology: J. W. Taylor, F.R.C.S. Pathology: R. F. C. Leith, F.R.C.P. Edin. Lunacy and Mental Disease: E. B. Whitcombe, M.B. Operative Surgery: Jordan Lloyd, F.R.C.S. Ophthalmology: Priestley Smith, F.R.C.S.

## UNIVERSITY OF LIVERPOOL.

The student must pass either (1) the University Matriculation Examination, or (2) the Final Examination for Graduation in Arts of any university in Great Britain and Ireland, or (3) the Matriculation Examination of the University of London, or (4) the Higher Certificate Examination of Oxford and Cambridge Joint Board, or (5) the Senior Local Examination of Oxford or Cambridge, with honours, or (6) some other examination of equal standard accepted by the Joint Matriculation Board. The course of professional study, subsequent to passing the Matriculation Examination and having been registered as a medical student, extends over five years. The degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of 21 years on the day of graduation. At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination. The other three years may be passed at any college or medical school recognised for this purpose by the University. Candidates must pass three examinations entitled respectively: the First Examination, the Second Examination, and the Final Examination. The fee is £5 for each examination. The subjects of the First Examination are: (1) Chemistry, Inorganic and Organic; (2) Biology (Zoology and Botany); and (3) Physics. The examination is divided into two parts—namely (1) chemistry and physics, and (2) biology; and candidates may pass in these parts separately. The subjects of the Second Examination are (*a*) Anatomy and Physiology (including Physiological Chemistry and Histology), and (*b*) Materia Medica and Pharmacy. Candidates may pass in *a* or *b* separately. The subjects for the Final Examination are (1) Pharmacology and Therapeutics; (2) General Pathology and Morbid Anatomy; (3) Forensic Medicine and Toxicology, and Public Health; (4) Obstetrics and Diseases of Women; (5) Surgery, Systematic, Clinical, and Practical; and (6) Medicine, Systematic, and Clinical, including Mental Diseases and Diseases of Children. Candidates may either present themselves in all the six subjects of examination on the same occasion, or may pass the examination in two parts, the first part consisting of two or three of subjects (1), (2), and (3); the second part of the remaining subjects. Candidates for the first part of the examination must have completed the fourth winter of medical study in accordance with the regulations of the University.

*Degrees of Doctor of Medicine and Master of Surgery.*—No candidate will be admitted to the degrees of Doctor of Medicine or Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examinations for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine: provided always that original work published in scientific journals or separately shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. No candidate shall be admitted to the degree unless his application after report from the Faculty of Medicine shall have been accepted by the Senate. Candidates may be required to undergo examination in any subject connected with the dissertation. The subjects of examination for the degree of Master of Surgery are (1) Surgical Anatomy, (2) Surgery, (3) Operative Surgery, (4) Clinical Surgery, (5) Ophthalmology, and (6) Pathology and Bacteriology.

Professors—Physiology: C. S. Sherrington, M.D., F.R.S. Physics: L. R. Wilberforce, M.A. Chemistry: J. Campbell Brown, D.Sc. Natural History: W. A. Herdman, D.Sc., F.R.S. Botany: R. J. H. Gibson, M.A. Anatomy: A. Melville Paterson, M.D. Medicine: T. Robinson Glynn, M D. Surgery: Rushton Parker, F.R.C.S. Pathology: Sir Rubert Boyce, M.B., F.R.S. Midwifery and Gynæcology: H. Briggs, M.D. Materia Medica and Therapeutics: W. Carter, M.D. Medical Jurisprudence: F. T. Paul, F.R.C.S. Hygiene: E. W. Hope, D.Sc. Tropical Medicine: Major Ronald Ross, C.B., F.R.S. Bio-Chemistry: D. Moore, D.Sc. Comparative Pathology: H. E. Annett, M.D.

## UNIVERSITY OF LEEDS.

Candidates presenting themselves for Matriculation in the Faculty of Medicine must pass an examination in English (Language or Literature) and English History, Mathematics and Latin, and in two of eight optional subjects. Exemption from the matriculation examination is granted to graduates of any university of the United Kingdom provided Latin has formed part of one of the degree examinations.

Four degrees in Medicine and Surgery are conferred—viz.: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), also Degrees and Diplomas in Dental Surgery and a Diploma in Public Health.

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Candidates for the degrees of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of 21 years on the day of graduation, and that they have attended courses of instruction approved by the University extending over not less than five years, two of such years, at least, having been passed in the University subsequently to the date of passing the First Examination. Candidates must also satisfy the examiners in the several subjects of the following examinations entitled respectively: the Matriculation Examination, or such other examination as may have been recognised by the Joint Matriculation Board in its stead; the First Examination; the Second Examination; and the Final Examination.

*The First Examination.*—The First Examination consists of: Part I., Physics and Chemistry; Part II., Biology. Candidates will be allowed to pass the two parts separately.

*The Second Examination.*—The Second Examination consists of: Part I., Anatomy and Physiology; Part II., Materia Medica and Pharmacy. Candidates will be allowed to pass the two parts separately.

*The Final Examination.*—The Final Examination consists of: Part I., Pathology and Bacteriology, Forensic Medicine, and Public Health. Part II., Medicine: Systematic and Clinical, including Mental Diseases and Diseases of Children; Surgery: Systematic, Clinical and Practical; Obstetrics and Gynæcology; Pharmacology and Therapeutics. Candidates will be allowed to pass the two parts separately and they may present themselves for examination in Part I. at the end of the twelfth term or fourth year of study.

*Degree of Doctor of Medicine.*—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine; provided always that original work published in scientific journals or in the Proceedings of learned societies, or separately, shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

*Degree of Master of Surgery.*—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Every candidate is also required to furnish certificates of attendance in accordance with the regulations of the University. The subjects of examination are as follows: Surgical Anatomy, Surgery, Operative Surgery, Clinical Surgery, Ophthalmology, Pathology, and Bacteriology.

*Diploma in Public Health.*—The regulations for this diploma will be found on p. 656.

Professors—Physics: W. Stroud, D.Sc Chemistry: A. Smithells, B.Sc., F.R.S. Organic Chemistry: J. B. Cohen, B.Sc. Zoology: W. Garstang, M.A. Botany: V. F. Blackman, M.A. Anatomy: T. Wardrop Griffith, M.D. Physiology and Histology: De Burgh Birch, M.D. Pathology: A. S. Grünbaum, M.D., F.R.C.P. Medicine: A. G. Barrs, M.D. Surgery: H. Littlewood, M.Sc., F.R.C.S. Obstetrics: (vacant). Public Health: J. S. Cameron, M.D. Forensic Medicine: H. J. Campbell, M.D.

## UNIVERSITY OF SHEFFIELD.

Candidates for a medical degree shall have matriculated in the University or have passed such other examination as may be recognised for this purpose by the University and sanctioned by the Joint Matriculation Board. The subjects required by the General Medical Council must be included in the Matriculation Examination or its recognised substitute.

The Degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—

A candidate for the degrees of M.B., Ch.B., shall produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First Examination.

*The First Examination.*—The subjects of examination are chemistry, physics, and biology. The examination is divided into two parts, A (chemistry and physics) and B (biology), and candidates may pass in each part separately. The Intermediate B.Sc. Examination in these subjects will, on payment of the required additional fee, be accepted instead of this examination. Candidates must, after matriculation and registration as a medical student, have attended courses of instruction (lectures and laboratory work) in chemistry, physics, and biology, for one year each.

*The Second Examination.*—The subjects of examination are anatomy, physiology, materia medica, and pharmacy. The examination is divided into two parts, A (anatomy and physiology) and B (materia medica and pharmacy), and candidates may pass in either part separately. Candidates must have completed the third winter session of professional study, must have passed the first examination, and must have attended (1) lectures on anatomy and dissections during two winter sessions and one summer session; (2) lectures on physiology during two winter sessions, practical physiology during two winter sessions, and histology during one summer session; and (3) materia medica and pharmacy for three months.

*The Third or Final Examination.*—The subjects of examination are divided into two parts—namely, A (forensic medicine and toxicology, public health, and pathology and morbid anatomy) and B (medicine, including pharmacology and therapeutics, mental diseases, and diseases of children, surgery, obstetrics, and gynæcology). Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination or for Part B must have completed the fifth year of study.

*Degree of Doctor of Medicine.*—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch. B. at least one year previously, must present a thesis embodying observations in some subject approved by the professor of medicine, and must pass an examination in the Principles and Practice of Medicine.

*Degree of Master of Surgery.*—Candidates for the degree of Ch. M. must have passed the examination for the degrees of M.B., Ch. B. at least one year previously and must, since taking the degrees of M.B., Ch. B., have held for not less than six months a surgical appointment in a public hospital or other public institution, affording full opportunity for the study of Practical Surgery.

The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology.

Professors—Physics: W. M. Hicks, Sc.D., F.R.S. Chemistry: W. Palmer Wynne, D.Sc., F.R.S. Biology: Alfred Denny, F.L.S. Anatomy: C. J. Patten, M.D. Physiology: J. S. Macdonald, B.A. Medicine: D. Burgess, M.A., F.R.C.P. Materia Medica, &c.: W. T. Cocking, M.D. Surgery: R. J. Pye-Smith, F.R.C.S. Pathology: J. M. Beattie, M.D. Midwifery: R. Favell, M.R.C.S. Ophthalmology: Simeon Snell, F.R.C.S. Public Health: H. Scurfield, M.D., D.P.H.

---

## UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

A diploma in Tropical Medicine and Hygiene (D.T.M. and H.) is granted to graduates in Medicine and Surgery of the University of not less than six months' standing. The course of study includes (1) Practical Bacteriology; (2) Diseases of Tropical Climates; (3) Tropical Hygiene; (4) a Practical Course in Medical Entomology and Protozoology and Venomous Animals; and (5) a Course of Clinical Instruction in Tropical Diseases. Any two of these courses may be taken under Extra-academical Teachers and exemption from the latter course may be granted to those graduates who have been engaged for a period of at least 12 months in the treatment of Tropical Diseases in any tropical or subtropical country. The examinations for the diploma, which will embrace all the foregoing subjects, are held in January and July of each year.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: Provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin or Greek.

No one is admitted to the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least 100 lectures, or 50 lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of 25 meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the Pharmaceutical Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, and one of the three following, viz.—Diseases of Children; Diseases of the Larynx, Ear, and Nose; and Diseases of the Skin, or such other special departments as may from time to time be determined. The candidate must have attended, under the superintendence of a registered medical practitioner, 12 cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general hospital or other public charitable institution and have conducted personally six or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

With respect to the places and institutions at which the studies of the candidate may be prosecuted, the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court. Of the subjects of study, 16 in number—viz., Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh or in some other university of the United Kingdom, or in some Foreign or Colonial university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court, or in a college incorporated with, or affiliated to, a university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court.

Women are admitted to graduation in medicine under practically the same conditions as men, excepting that, until provision is made in the University for instruction of women in all subjects of the medical curriculum, the regulations as to places of study contained in the foregoing paragraph do not apply to them. The Medical College for Women, 30, Chambers-street, Edinburgh, has been recognised as a medical school whose courses of instruction qualify for graduation.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—First, in Chemistry, Zoology, Botany, and Physics; second, in Anatomy and Physiology; third, in Materia Medica and Therapeutics and Pathology; and fourth, in Surgery, Medicine, Midwifery, Forensic Medicine, and Public Health, and clinically in Medicine, Surgery, and Gynæcology in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes. Candidates who have passed their examination in the first division of these subjects may be admitted to examination in the second division at the end of their third winter session. Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in the third division at the end of the fourth winter session. Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in the fourth or final division when they have completed the fifth year of study.

Under a new medical ordinance it is provided that candidates may pass all or any of the subjects of the first division—viz., Botany, Zoology, Physics, or Chemistry—at a university in the United Kingdom or at any other university approved by the Senate for this purpose, when such subjects qualify for a degree in arts or science. In the second division the examination in Physiology may be taken at any time and in Anatomy at any time after the first half session of the third winter session. In the third division the examination in Pathology may be taken at any time after the end of the third summer session in the case of students who begin the medical curriculum in October and at the end of the fourth summer session in the case of students who begin their medical curriculum in May. In Materia Medica the examination may be taken at any time after the end of the fourth winter session. Candidates may be admitted to examination in Practical Pharmacy and in the physical, chemical, and botanical characters of medicinal substances at any examination held after they have completed the qualifying course of study. In the fourth division a student after taking the prescribed courses of study may be examined in Forensic Medicine and Public Health at any time, in Midwifery at any time after the end of the first half session, of the fifth winter session, in the Practice of Medicine and Surgery at any time after the end of the fifth winter session, and in Clinical Medicine (including the subject of Diseases Peculiar to Women) and Clinical Surgery at the end of the fifth year of study. These new ordinances apply to students who enter the University at or after the beginning of the winter session 1907, but students who have entered before this date have the option of finishing their course under the existing regulations or of taking advantage of the new ordinances.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2*s.*, and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First Division of the Examination (Botany, Zoology, Physics, and Chemistry), £6 6*s.*; for the Second Division (Anatomy, and Physiology) £5 5*s.*; for the Third Division (Pathology and Materia Medica and Therapeutics), £4 4*s.*; and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, Midwifery, Clinical Gynæcology, and Forensic Medicine and Public Health), £7 7*s.*

*Bachelors of Medicine* and *Bachelors of Surgery* may proceed to the degrees of *Doctor of Medicine* and *Master of Surgery* after they have spent one year in the medical or surgical wards respectively of a hospital, or the Military or Naval Medical Services, or in scientific work bearing directly on their profession, or two years in practice. In each case an examination must be passed and a thesis submitted for approval of the Faculty. The fee to be paid for the degree of M.D. is £10 10*s.*, and the fee to be paid for the degree of Ch.M. is £10 10*s.*

Professors—Natural Philosophy: J. G. Macgregor, D.Sc. Materia Medica: Sir Thomas R. Fraser, M.D., F.R.S. Forensic Medicine: H. Harvey Littlejohn, M.B., F.R.C.S.E. Chemistry: A. Crum Brown, M.D. Surgery: John Chiene, C.B., M.D. Medicine: J. Wyllie, M.D. Anatomy: D. J. Cunningham, M.D. Pathology: William Smith Greenfield, M.D. Midwifery: Sir John Halliday Croom, M.D. Clinical Medicine: Sir T. R. Fraser, W. S. Greenfield, and J. Wyllie. Clinical Surgery: T. Annandale, M.D., F.R.C.S. Botany: I. Bayley Balfour, M.D. Physiology: E. A. Schäfer, M.D. Zoology: J. Cossar Ewart, M.D. Public Health, &c.: C. Hunter Stewart, M.B., D.Sc

---

## UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but eight of the subjects other than clinical must be taken in this or some other recognised university entitled to confer the degree of M.D., and at least two years of the course must be taken in Glasgow University. Under the new regulations six degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M.; B.Sc. in Public Health; D.Sc. in Public Health; and B.Sc. in Pharmacy. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, with possible options to students whose native language is not English in the case of the fourth subject. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination but must do so at not more than two occasions.

*For the degrees of M.B. and Ch.B.* a curriculum of five years is required, in each of the first four of which the student must attend at least two five months' courses, or alternately one five months' course and two courses of two and a half months. The minimum of attendance in the first four years includes five months' courses in the following subjects:—Anatomy, Practical Anatomy (two courses), Chemistry, Materia Medica and Therapeutics, Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women and Infants, and Pathology; and courses of two and a half months in the following: Practical Chemistry, Physics, Botany, Zoology, Practical Physiology, Practical Pathology, Medical Jurisprudence, and Public Health. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted as clerk in medical and dresser in surgical wards, and must have had six months' out-door practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 12 cases of labour, or three months of the Practice of a Lying-in Hospital, six cases being personally conducted. The University also requires further study in Post-Mortem Examinations, Fevers, and Ophthalmology, and recommends study in other special subjects. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics, or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry, to be taken after the completion of the included courses (candidates being at liberty to take two subjects at a time); the second comprising Anatomy, Physiology, and Materia Medica and Therapeutics, to be taken at the end of the third winter session; the third comprising Pathology, Medical Jurisprudence, and Public Health, to be taken at the end of the fourth winter session; and the fourth or final, comprising Surgery, Clinical Surgery, Practice of Medicine, Clinical Medicine, and Midwifery, to be taken on completion of the fifth year of study.

*The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery)* are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

*Fees.*—The Fees for M.B. and Ch.B. are £23 2*s*. The class fee in each subject of the curriculum for M.B. and Ch.B. is £2 2*s*., £3 3*s*., or £4 4*s*., and the present fees for hospital attendance are £10 10*s*. The fee for M.D. is £10 10*s*. (stamp duty being now abolished), and for Ch.M. £10 10*s*.

During last academic year there were 653 men and 58 women attending University courses in the Faculty of Medicine—a total of 711. The great majority of the students take their hospital course at the Western Infirmary, where clinical instruction is given by professors of the University and other physicians and surgeons. Clinical instruction on Fevers is given at Ruchil and Belvidere Hospitals, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Ear, the Throat and Nose, and Insanity. Queen Margaret College, hitherto conducted as a separate institution for the higher education of women, has now been made over to the University and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical instruction female students are admitted to the Royal Infirmary.

Bursaries and Prizes to the annual amount of over £1000 are appropriated to medical students, and Scholarships and Fellowships to the annual amount of about £1600 may be held by medical students who have gone through the Arts course.

Professors—Natural Philosophy: A. Gray, LL.D., F.R.S. Materia Medica: Ralph Stockman, M.D. Chemistry: John Fergusson, LL.D. Surgery: Sir William Macewen, M.D., F.R.S. Practice of Medicine: Sir Thomas McCall Anderson, M.D. Midwifery: Murdoch Cameron, M.D. Anatomy: John Cleland, M.D., F.R.S. Zoology: John G. Kerr, M.A. Botany: F. O. Bower, D.Sc., F.R.S. Physiology: D. Noel Paton, M.D. Forensic Medicine: John Glaister, M.D. Clinical Surgery: Sir H. C. Cameron, M.D. Clinical Medicine: S. Gemmell, M.D. Pathology: Robert Muir, M.A., M.D.

## UNIVERSITY OF ABERDEEN.

The University of Aberdeen grants four degrees in Medicine and Surgery—viz., Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine (M.B.), and Bachelor of Surgery (Ch.B.). The two degrees of M.B. and Ch.B. are not conferred separately and the higher degrees of M.D. and Ch.M. are only granted to holders of the M.B. and Ch.B. degrees.

*Degrees of M.B. and Ch.B.*—Before commencing his medical studies each student must pass a Preliminary Examination in (1) English, (2) Latin, (3) Mathematics, and (4) Greek, or French, or German. In the case of a candidate whose native language is not English an examination in the candidate's native language may be substituted for one in French or German, and an examination in any other classical language for one in Latin or Greek. The curriculum for the degrees extend over a period of five years, during which attendance is required in the following subjects: Botany, Zoology, Physics, Chemistry (Systematic and Practical), Anatomy (Systematic and Practical), Physiology (Systematic and Practical), Materia Medica and Therapeutics, Practical Pharmacy, Pathology (Systematic and Practical), Medical Jurisprudence and Public Health, Surgery, Medicine, and Midwifery.

Candidates must attend for at least three years the medical and surgical practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons, and they must have attended courses of at least nine months in clinical medicine and clinical surgery. The candidate must have acted as clerk in the medical and dresser in the surgical wards of a hospital and must have attended for at least six months the practice of a dispensary or the out-practice of a hospital, &c. Attendance is also required on courses in Mental Diseases, Fevers, Ophthalmology, Post-mortem Examinations, and other special subjects. The candidate is also required to have been properly instructed in Vaccination and to have attended at least 12 Midwifery cases.

Professional Examinations are held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fee for the degrees of M.B. and Ch.B. amounts to £23 2*s*. Matriculation fee for the winter and summer sessions, £1 1*s*.; summer session alone, 10*s*. 6*d*.

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: City Fever Hospital, Sick Children's Hospital, General Dispensary, and Lying-in and Vaccine Institutions (daily), Royal Lunatic Asylum, Ophthalmic Institution, &c.

*Degrees of M.D. and Ch.M.*—Candidates for either of these degrees must already hold the degrees of M.B. and Ch.B. of Aberdeen. A thesis has to be presented for approval by the Medical Faculty and an examination has to be passed in Clinical Medicine or Clinical Surgery as the case may be. Fee for each of the degrees £10 10*s*.

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

Professors—Natural Philosophy: C. Niven, M.A., F.R.S. Physiology: J. A. MacWilliam, M.D. Medicine: David White Finlay, M.D. Chemistry: F. R. Japp, LL.D., F.R.S. Anatomy: R. W. Reid, M.D., F.R.C.S. Surgery: A. Ogston, C.M. Materia Medica: J. T. Cash, M.D., F.R.S. Midwifery: W. Stevenson, M.D. Forensic Medicine: Matthew Hay, M.D. Botany: J. W. H. Trail, M.D., F.R.S. Pathology: D. J. Hamilton, M.B. Natural History: J. Arthur Thomson, M.A.

## UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE, ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE).

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 45 (St. Andrews, No. 4) of the Commissioners under the Universities (Scotland) Act, 1889. These regulations came into force on April 19th, 1897. Four degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical studies each student shall pass a Preliminary Examination in (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects:—(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other Modern Language, (ζ) Logic. A degree in Arts or in Science in any of the Universities of the United Kingdom and in some colonial or foreign universities shall exempt from the

Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the Final Examination for the Diploma of L.L.A.

*Degree of Bachelor of Medicine and Bachelor of Surgery.*—Candidates must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine, and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery (12 cases of labour), Vaccination, Children's Diseases, Fevers, Ophthalmology, and Post-mortem Examinations.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

*Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., first, in Botany, Zoology, Physics, and Chemistry; second, in Anatomy, Physiology, and Materia Medica; third, in Pathology, and Forensic Medicine and Public Health; and fourth, in Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of Doctor of Medicine shall be 10 guineas, exclusive of any stamp duty which for the time may be demanded. The fee to be paid for the degree of Master of Surgery shall be 10 guineas.

The whole medical curriculum can be taken in University College or the first two years in United College.

*Bursaries, United College, St. Andrews.*—Fourteen Taylour Thomson Bursaries for female Medical students of the annual value of from £20 to £30 each, tenable for one or two years. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination and who are prepared to take two Anni Medici at the United College, St. Andrews.

*University College, Dundee.*—(*a*) Open to either sex. Eleven Entrance Bursaries of £15, tenable for one year. (*b*) Open to either sex: Four £20 and three £15, second year. (*c*) Four £20 and two £15, third year. (*d*) Bute Bursary, founded in 1893 by the late Most Honourable the Marquis of Bute, K.T. This Bursary consists of the free proceeds of £1000. (*e*) Two Bursaries of the annual value of £25, tenable for three years at either University College, Dundee, or at any Scottish University (local candidates only).

Professors—Natural Philosophy: J. P. Kuenen, Ph.D. Chemistry: James Walker, D.Sc. Natural History: D'Arcy W. Thompson, B.A. Botany (White's): Patrick Geddes, F.R.S.E. Anatomy (Cox's): J. Yule Mackay, LL.D. Physiology: E. W. Reid, B.A. Pathology: L. R. Sutherland, M.B., C.M. Surgery: D. Macewan, M.D. Medicine: Alexander M. Stalker, M.D. Midwifery: J. A. C. Kynoch, M.B., F.R C.P. Edin. Materia Medica: C. A. Marshall, M.D.

*United College of St. Salvator and St. Leonard.*—Professors—Natural Philosophy: A. S. Butler, M.A. Natural History: W C. MacIntosh, M.D., LL.D., F.R.S. Medicine: J. Bell-Pettigrew, M.D., LL.D., F.R.S. Chemistry: Thomas Purdie, B.Sc., Ph.D, LL.D., F.R.S. Anatomy: James Musgrove, M.D.. C.M.

For further particulars apply to the Dean of the Medical Faculty, University College, Dundee.

## UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

*Matriculation.*—All students in the School of Physic intending to practise Physic must pass a matriculation examination, for which a fee of 5*s.* is payable. No student can be admitted for the winter course after Nov. 25th.

*Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).*—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be concurrent with the medical course and the B.A. degree need not be taken before the final medical examinations, but the medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Practical and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics, Physiology and Practical Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Dublin Hospital (one year at a recognised London or Edinburgh hospital before the commencement of the Dublin curriculum may be counted as one year spent in such Dublin hospital); (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months; (5) Practical Midwifery with Clinical Lectures, including not less than 30 cases, six months; (6) Ophthalmic Surgery, three months. Three groups of examinations have to be passed. Preliminary Scientific Examination, including Physics and Chemistry, Botany and Zoology. The Intermediate Medical Part I, including Anatomy and Institutes of Medicine (Practical Histology and Physiology). The Intermediate Medical Part II., including Applied Anatomy and Applied Physiology; and the Final Examination, which is divided into Part I., Materia Medica, Jurisprudence, and Pathology; and Part II., Medicine, Surgery, Midwifery, Gynæcology, Clinical Medicine, Mental Diseases, Clinical Surgery, Operations, and Clinical Ophthalmology. Part I. may be passed in the fourth year and Part II. in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

*Doctor in Medicine.*—A Doctor in Medicine must have passed all the qualifying examinations and must be a B.A. of three years' standing. He must also read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

*Master in Surgery.*—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects:—1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

*Master in Obstetric Science.*—A Master in Obstetric Science must be fully qualified and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery. He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

*University Diplomas.*—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees. A diploma in Medicine, Surgery, and Midwifery is a registrable qualification conferred upon candidates who have completed a full five years' course in Medicine and two years in Arts. The diploma, like the degree, qualifies for registration. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

Professors—Natural Philosophy: F. Purser, M.A. Anatomy and Surgery: A. F. Dixon, D.Sc., M.B. University Anatomist: Sir C. B. Ball, M.D., M.Ch. Physic (Regius): James Little, M.D. Surgery (Regius): Sir C. B. Ball, M.Ch. Surgery: E. H. Taylor, M.D. Botany: H. H. Dixon, Sc.D. Chemistry: Sidney Young, Sc.D. Comparative Anatomy and Zoology: H. W. Mackintosh, M.A.

## ROYAL UNIVERSITY OF IRELAND.

All Degrees, Honours, Exhibitions, Prizes, Scholarships, and Studentships in this University are open to students of either sex.

Candidates for any degree in this University must have passed either the Matriculation Examination or the Senior Grade Examination of the Board of Intermediate Education for Ireland in the subjects prescribed for the Matriculation Examination of this University. Candidates can only claim exemption from the Matriculation Examination of this University by applying for such exemption in the same year in which they shall have passed aforesaid examination. Students from other universities and colleges are included in this rule.

The following degrees, &c., are conferred by the University in this Faculty:—Bachelor of Medicine, Doctor of Medicine, Bachelor of Surgery, Master of Surgery, Bachelor of Obstetrics and Master of Obstetrics; in Sanitary Science, a special diploma; and in Mental Disease, a special diploma.

The course for degrees in Medicine, &c., is of at least five years' duration.

*The First Examination in Medicine.*—Students may be admitted to this examination after the lapse of one academical year from the time of their matriculation. They must also have previously passed the First University Examination and completed the first year of the medical curriculum. The subjects of this examination are Natural Philosophy, Systematic Chemistry, Zoology and Botany. The examination in each subject will comprise two parts:—(1) a written examination and (2) a practical examination. Particular weight will be given to the practical part of the examination. Candidates at the First Examination in Medicine who at the First University Examination did not obtain 30 per cent. of the marks assigned to French or German will be required to present themselves for a qualifying examination in French or German. Failure to obtain 30 per cent. of the marks assigned to either of those languages will involve the loss of the examination.

*The Second Examination in Medicine.*—Students will be admitted to this examination after the lapse of one medical year from the time of passing the First Examination in Medicine, provided they have completed the second year of the medical curriculum. The subjects for this examination are Anatomy, Physiology, and Practical Chemistry.

*The Third Examination in Medicine.*—Students will be admitted to this examination after the lapse of one medical year from the time of passing the Second Examination in Medicine, provided they have completed the third year of the medical curriculum. The subjects for this examination will be Anatomy, Physiology, and Materia Medica (Pharmacology and Therapeutics).

*The Examination for the Medical Degrees.*—Students will be admitted to this examination after the lapse of not less than one medical year from the time of passing the Third Examination in Medicine, provided they have completed the course of medical studies prescribed for the entire medical curriculum. The examination consists of three parts or divisions:—(*a*) Medicine, including Therapeutics and Pathology, Mental Diseases, Medical Jurisprudence and Sanitary Science. (*b*) Surgery, Theoretical, Clinical, Operative; Surgical Anatomy, with Ophthalmology and Otology; Surgical Pathology. (*c*) Midwifery and Diseases of Women and Children. Each part of this examination must be passed as a whole. Upon completing satisfactorily his examination in all three divisions the candidate will, in addition to the parchment diplomas recording his admission to the Medical Degrees of M.B., B.Ch., and B.A.O., receive a certificate of having passed a qualifying examination in the subjects of Medicine, Surgery, and Midwifery. The fee for this certificate is £10, which must be paid prior to the candidate's admission to these Degrees.

*The M.D. Degree.*—Candidates may present themselves for the examination for this degree after the lapse of three academical years from the time of obtaining the degrees of M.B., B.Ch., B.A.O. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval medical service. Every candidate will be examined at the bedside, and required to diagnose at least three medical cases, and prescribe treatment, and to write detailed reports on at least two cases to be selected by the examiners and to discuss the questions arising thereon.

*The M.Ch. Degree.*—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval medical service. The examination for this degree will comprise Surgical Diseases and Surgery, both theoretical and operative; Surgical Anatomy; Ophthalmology and Otology; Surgical Pathology; and will include—(*a*) a written examination; (*b*) a clinical examination; (*c*) an examination on Surgical Instruments and Appliances; and (*d*) an examination in Operative Surgery.

*The M.A.O. Degree.*—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval medical service. The examination will comprise the Theory and Practice of Midwifery and of Diseases of Women and Children, Pathology, and the Use of Instruments and Appliances and will include—(*a*) a written examination; (*b*) a clinical examination so far as practicable; and (*c*) an oral examination, with practical illustrations.

## UNIVERSITY OF WALES.

This University has not as yet the privilege of granting degrees in Medicine. At the three constituent Colleges of Aberystwyth, Bangor, and Cardiff there are Professors of Chemistry, Botany, Zoology, and Physics, so that the students of the University can obtain proper instruction in the ancillary subjects. The foundation of a Medical Faculty has been laid at University College, Cardiff, where there is a recognised school of medicine

*University College, Cardiff: School of Medicine.*—All classes are open to both men and women students who may spend three out of their five years of medical study at Cardiff. The courses of study are recognised as qualifying for the Preliminary Scientific and Intermediate Examination in Medicine in the University of London and for the corresponding examinations in the other Universities. Students who are preparing for these examinations may compound for their courses by paying a fee of £57 10*s.*, while a composition fee of £41 10*s.* includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board. In all cases the composition fees may be paid by instalments. Hospital instruction is given at the Cardiff Infirmary. The attention of students about to matriculate is drawn to the numerous entrance scholarships and exhibitions, varying in value from £10 to £30 per annum, offered for competition at University College, Cardiff, in September next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registrar. In the department of Public Health established in 1899 instruction is given qualifying for the D.P.H. examinations. Further information may be obtained from the Dean of the Faculty of Medicine.

*Lecturers.*—Physics: Professor A. L. Selby. Chemistry: Professor C. M. Thompson. Zoology: Professor W. N. Parker. Botany: Professor A. H. Trow. Anatomy: Professor David Hepburn. Physiology: Professor J. B. Haycraft. Materia Medica and Therapeutics: Dr. W. Mitchell Stevens. Bacteriology: Mr. H. A. Schölberg. Public Health and Hygiene: Dr. E. Walford and Dr. W. Williams. Midwifery: Dr. E. J. Maclean. Vaccination: Mr. H. A. Schölberg.

## EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.[2]

Any candidate who desires to obtain both the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of professional study at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. Six months of the curriculum may be spent in an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.

*Professional Examinations.*—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Victoria Embankment, W.C., 14 clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the *First Examination* are—Chemistry, Physics, Elementary Biology, and Practical Pharmacy. A candidate may take this examination in three parts at different times (Chemistry and Physics must be taken together until the required standard is reached in both or in one of these subjects, but a candidate will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other). A candidate will be admitted to examination in Chemistry and Physics, in Practical Pharmacy, and Elementary Biology on producing evidence of having passed the required Preliminary Examination and of having received instruction in these subjects at a recognised institution, or he may take Pharmacy at any time during the curriculum. (*Note:* In the case of students who commence their professional studies after June 1st, 1904, certificates must be produced of 180 hours' instruction and laboratory work in chemistry; 120 hours' instruction and laboratory work in physics; and 120 hours' instruction and laboratory work in biology. These courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education.) Synopses of the subjects of examination may be obtained on application. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry, Physics, or Biology he must produce evidence of further instruction at a recognised Institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the *First Examination* are as follows: For the whole examination, £10 10*s.*; for re-examination after rejection in Parts I. and II., £3 3*s.*; and for re-examination in each of the other parts, £2 2*s.*

The subjects of the *Second Examination* are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination on production of the required certificates of professional study. The study of Anatomy and Physiology before passing in two of first three parts of the First Professional Examination is not recognised.

A candidate referred on the *Second Examination* will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the *Second Examination* are: £10 10*s.* for the whole examination and £6 6*s.* for re-examination after rejection.

The subjects of the *Third* or *Final Examination* are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a Medical School and Hospital, not less than one year after passing the Second Examination, on production of the required certificates. Candidates may present themselves for examination in Medicine and Surgery at the completion of the five years' curriculum, not less than two years from the date of passing the Second Examination, on production of the required certificates. Candidates may take this examination in three parts at different times, or they may present themselves for the whole examination at one time. They will be required to produce the following evidence before being admitted to the several parts of the *Third* or *Final Examination*—viz., in Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology, and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Instruction in the Administration of Anæsthetics; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum; in Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser; Instruction in the Administration of Anæsthetics; and Clinical Instruction in Ophthalmology; in Midwifery of having attended Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; and of attendance on 20 Labours.

---

[2] The diploma of Member of the Royal College of Surgeons of England and the Licence of the Royal College of Physicians of London are no longer granted separately except to students who commenced their professional study prior to Oct. 1st, 1884.

The fees for admission to the *Third* or *Final Examination* are as follows: For the whole examination, £21. Part I. For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, Forensic Medicine, and Public Health, £5 5*s.*; for re-examination in Practical Pharmacy (if taken at this examination), £2 2*s.* Part II. For re-examination in Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances, £5 5*s.* Part III. For re-examination in Midwifery and Diseases Peculiar to Women, £3 3*s.*

A candidate referred on the *Third* or *Final Examination* will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

Students of recognised universities in England, Scotland, and Ireland, who have passed examinations for a degree in Medicine at their universities in the subjects of the First and Second Examinations of the Examining Board, may enter for the Final Examination at the expiration of two years from the date of passing in Anatomy and Physiology, on production of the required certificates.

Graduates in Medicine of certain recognised Indian, Colonial, and Foreign universities may present themselves for the Final examination under special conditions which can be ascertained on application to the Secretary.

## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

In addition to the diplomas granted by the English Conjoint Board, the Royal College of Physicians of London and the Royal College of Surgeons of England grant honour diplomas, which no longer give the right to practise professionally if held separately. The Royal College of Physicians of London has two such diplomas, the *Fellowship* which is a purely honorary distinction and the *Membership* which is obtained by examination.

*Membership.*—Every candidate for the Membership of the College must furnish proof of having attained the age of 25 years. Candidates must not be engaged in trade, dispense medicine, make any engagement with a chemist, or any other person for the supply of medicine, or practise medicine or surgery in partnership, by deed or otherwise. Any candidate being already registered or having passed a qualifying examination in accordance with the Medical Act of 1886, who has obtained the degree of Doctor or Bachelor of Medicine at a University in the United Kingdom, in India, or a British colony, or who has obtained a foreign qualification entitling him to practise medicine or surgery in the country where such qualification has been conferred, wherein the courses of study and the examinations to be undergone previously to graduation have been adjudged by the Censors' Board to be satisfactory, will (if the Censors think fit) be admitted to the Pass Examination. The nature and extent of this examination will, in the case of each candidate, be determined by the Censors' Board. All other candidates must produce proof of having passed the examinations required for the Licence of the College. The examination is directed partly to pathology and partly to the practice of medicine and may be modified in circumstances to be ascertained by application to the Registrar. For example, candidates under 40 years of age are examined in an ancient or modern language, a test from which their seniors are exempt. The fee for admission as a Member of the College is 40 guineas, except when the candidate for Membership is a Licentiate of the College, in which case the fee already paid for the Licence shall be deducted from the 40 guineas. The fee for the examination is £6 6*s.*

*Fellowship.*—The *Fellows* are selected annually from the ranks of the *Members.*

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Royal College of Surgeons of England confers its diploma of Fellow upon a few distinguished persons in an honorary capacity. A certain number of Members of long standing are also elected to the Fellowship. But the bulk of the Fellows obtain the diploma as the result of examination.

*Fellowship.*—The examination for the Fellowship is divided into two parts—viz., the First Examination and the Second Examination. The subjects of the First Examination are Anatomy and Physiology and the questions on these subjects may require an elementary acquaintance with Comparative Anatomy and Physiology. The examination is partly written and partly *vivâ voce.* The subjects of the Second Examination are Surgery, including Surgical Anatomy and Pathology. The examination is partly written and partly *vivâ voce* and includes the examination of patients and the performance of operations on the dead body. The examinations are held during the months of May and November of each year.

The fees for examination are:—First Examination, each admission, five guineas. Second Examination, each admission, 12 guineas. Of such examination fees 17 guineas will be reckoned as part of the fee payable upon admission to the Fellowship. The fee to be paid upon admission to the Fellowship is 30 guineas, except when the candidate is a Member of the College, in which case the fee is 20 guineas.

A Member of the College is admissible to the First Examination at any time after receiving his Diploma of Membership. A candidate who is not a member of the College is admissible to the first Professional Examination for the Fellowship on the production of evidence of having passed the First and Second Examinations of the Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England (or, if a member of a University recognised by the College for the purpose, of having passed the Examinations in his University equivalent to the First and Second Examinations of the Board) and on the production of certificates of attendance upon certain courses of study described in the Regulations.

A Member of the College is admissible to the Second Examination at any time after having passed the First Examination, on producing satisfactory evidence of having been engaged not less than six years in the study (or study and practice) of the profession.

A candidate who is not a Member of the College must possess the registrable surgical and medical degrees recognised by the Council and must have been engaged in the study (or study and practice) of the profession for not less than four years subsequent to the date of obtaining the recognised qualification, one year of which shall have been spent in attendance on the Surgical Practice of a recognised hospital. The diploma of Fellow is not conferred upon successful candidates until they have attained the age of 25 years.

The Regulations may be obtained on application to the Secretary of the Examining Board, Examination Hall, Victoria Embankment, London, W.C.

## ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or Glasgow, or both, the student may obtain the diplomas of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess legal qualifications in Medicine or Surgery. Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries. The regulations which follow are for candidates who commenced study after Jan. 1st, 1892.

*Professional Education.*—1. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction: Physics, three months; Elementary Biology, three months; Chemistry, six months; Practical or Analytical Chemistry, three months; Anatomy, during at least six months; Practical Anatomy, twelve months; Physiology, six months; Materia Medica, three months; Pathology (including Practical Pathology), six months; Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery and the Diseases of Women and Children, three months; Medical Jurisprudence and Public Health, three months. The number of lectures certified as attended at any school not situated in Scotland should not be less than three-fourths of the total number of lectures delivered in a course. 2. The candidate must also produce the following certificates:—(*a*) Of having personally attended not less than six cases of labour, or alternatively attendance on 12 cases of labour, at least five of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner. (*b*) Of having attended, for three months, instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for 27 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. Evidence must be produced that the candidate has acted as Surgical Dresser and Medical Clinical Clerk for not less than three months in the wards in each case. (*d*) Of having attended for six months the practice of a public dispensary specially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second examinations. (*e*) Of having been instructed in the Theory and Practice of Vaccination by a Public Vaccinator authorised by the Local Government Board to grant certificates of proficiency in vaccination and of having performed operations under the teacher's inspection during a period of not less than six weeks.

In addition to the courses above prescribed candidates are required to attend the following courses: Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months.

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. The period of three years devoted to hospital practice may include clinical instruction in special subjects, and should also include instruction in administration of anæsthetics and attendance at post-mortem examinations. The student's regularity of attendance in the wards and out-patients' departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Candidates shall be subjected to four professional examinations:

*First Examination.*—The First examination shall embrace the following divisions of subjects—(1) Physics, (2) Chemistry, including Practical Chemistry, and (3) Elementary Biology. The fees payable for admission to the First examination shall be for the whole examination, £5; for each division separately, £2 10*s.*

*Second Examination.*—The Second examination shall embrace Anatomy and Physiology including Histology; and candidates may be admitted to this examination at the end of the second year of medical study. The fees payable for admission to the Second examination shall be—for the whole examination, £5, and for re-entry after rejection, £3 for both subjects, and £2 if one of the subjects has been passed.

*Third Examination.*—The Third examination shall embrace Pathology and Materia Medica with Pharmacy. The fees payable for admission to the Third examination shall be—for the whole examination, £5; for re-entry in both subjects after rejection, £3; and £2 if one of the subjects has been passed.

*Final Examination.*—The Final examination shall not be taken earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women and of New-born Children; and Medical Jurisprudence and Public Health. All candidates shall be subjected, in addition to the written and oral examinations, to clinical examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope Examination of the Urine and Urinary Deposits, Surgica Appliances, Bandages, Surface markings, &c. The fees payable for the Final examination shall be,—for the whole examination, £15, for re-entry in all subjects after rejection, £5.

Candidates who enter on the footing of having passed the earlier examination at another Board shall pay the fees in respect of these examinations, as well as the Final examination fees.

There are six periods of examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespectively of the place of the previous examination. The Registrar in Edinburgh is Mr. J. Robertson, solicitor, 54, George-square; and the Registrar in Glasgow, Mr. A. Duncan, LL.D., 242, St. Vincent-street, to whom fees and certificates must be sent for the respective examinations.

*Note.*—In applying for copies of the Regulations students should state whether they commenced medical study before or after Jan. 1st, 1892, a warning which it is to be hoped has no longer much application.

## ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

In addition to the diplomas granted by the Scottish Conjoint Board the Royal College of Physicians and the Royal College of Surgeons of Edinburgh grant honour diplomas which no longer give the right to practise professionally if held separately, and also grant their Single Licence to candidates already possessing legal qualifications for professional practice.

The Royal College of Physicians of Edinburgh grants a *Membership* and a *Fellowship.*

*Membership.*—A candidate, who must be a Licentiate of the College of Physicians or a graduate of a British or Irish University and 24 years of age, is examined in medicine, therapeutics, and in any branch of the departments of medicine, such as general pathology, psychology, public health; obstetrics, tropical medicine, or medical jurisprudence. A candidate who for 40 years has been in the practise of his profession may be excused any or all of the examination. The fee for the Membership is £36 15*s.*, 15 guineas of which will be returned to any successful candidate who was already a Licentiate of the College at the time of qualifying for the Membership.

*Fellowship.*—The Fellows are selected, save with rare exceptions, from the ranks of the *Members.* They must be 25 years of age. The fee is £64 18*s.*

The College grants its *Single Licence* on terms similar to those of the Royal College of Surgeons of Edinburgh, as mentioned in the next section.

## ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The Royal College of Surgeons of Edinburgh grants a diploma of Fellowship after examination to the holders of the surgical degrees of diplomas of the recognised British examining bodies, as well as of the holders of the surgical degrees of the Universities of Canada, Australia, New Zealand, and the Indian Empire. The candidates for the examination must be 25 years of age and must have been engaged in practice for at least two years. The examination is of a practical nature, partly written and partly *viva voce*, and includes surgery and surgical anatomy, operative surgery, and clinical practice. One optional subject can also be taken, the range of these specialisms covering every branch of medicine. The fee to be paid on obtaining Fellowship is £45, £15 of which will be returned to those who already hold the Licentiateship of the College. Three weeks' notice of intention to present himself for examination must be given by the candidate to Mr. James Robertson, solicitor, 54, George-square, Edinburgh, clerk to the College, together with credentials signed by two Fellows of the College, one of whom must be a resident in Edinburgh, unless a special application be made to the President of the College. In certain circumstances registered medical practitioners who have distinguished themselves in the practice of their profession are admitted to the Fellowship without examination.

The Royal College of Surgeons of Edinburgh admits to the examination for its Single Licence any candidate who already holds a Diploma in Medicine of any British, Indian, or Colonial university or of any British or Colonial College of Physicians, or of the Society of Apothecaries of London or Apothecaries' Hall, Dublin, granted under the provisions of the Medical Act, 1886, whose preliminary examination and course of professional study is proved to be sufficient to fulfil the requirements of the College, or to those who have passed a full examination for any of the above. Female practitioners are now admitted to the Licence of the College but not to the Fellowship, and the regulations for the Licence apply to practitioners of either sex.

Every candidate for a surgical diploma must have followed his course of study in a university, or in an established school of medicine, or in a provincial school specially recognised by the College of Surgeons of that division of the United Kingdom in which it is situate.

Under the title Established School of Medicine are comprehended the medical schools of those cities of Great Britain and Ireland in which Diplomas in Surgery are granted, and such colonial and foreign schools as are similarly circumstanced in the countries in which they exist.

*Professional Examination for the Diploma of the College.*—Candidates for the Diploma of the College will be subjected to one professional examination, partly in writing and partly practically and orally.

Opportunities for the examinations will be presented four times in each year. On each of these occasions the candidates will assemble to write answers to the questions proposed, and the clinical and oral examinations shall be conducted on the days immediately succeeding.

Unsuccessful candidates will be remitted to their studies for a period to be determined by the judgment of the examiners, but not in any case for less than three months.

The examination will embrace the principles and practice of surgery (including operative surgery and surgical pathology), clinical surgery, and surgical anatomy, and will not take place before the termination of the full period of study.

Applications for examination must be made to Mr. James Robertson, not later than one week prior to the date of examination.

On the production of the required documents Mr. Robertson will give the candidate an order authorising the examiners to admit him to examination.

The fee of £15 15*s.* payable to the College must be lodged in the hands of Mr. Robertson not later than one week preceding the examination day. The sum of £10 10*s.* will be returned to each unsuccessful candidate. Under special circumstances candidates can be examined on days other than those fixed by the regulations. The fee for a special examination is as follows, viz., £20 for examination, of which £10 will be returned to candidates remitted on examination.

In order to test more effectually the practical knowledge of candidates recent dissections and anatomical specimens will be employed during examination. They will also be subjected to a practical clinical examination in the Surgical Hospital, including the application of surgical apparatus, bandages, surface markings, &c., and may, if it be considered necessary to test their knowledge, be required to perform operations on the dead body.

## THE FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Like the preceding corporations, the Faculty of Physicians and Surgeons of Glasgow grant a Fellowship and a Licence to be held as separate qualifications.

*Fellowship.*—The Fellowship of the Faculty is granted after examination in medicine or surgery, together with an optional subject, which may be anatomy or physiology or be selected from any special branch of medicine or surgery, and 14 days' notice must be given by the candidate of his intention to present himself to Mr. Alexander Duncan, LL.D., the Faculty Hall, Glasgow. The fee for the Fellowship is £30, half of which sum is returned to any successful candidate who already holds the Licence of the faculty. In certain circumstances Fellows may be elected as a mark of distinction.

*Licence.*—The Licence of the faculty is granted as a separate qualification to qualified practitioners after examination in surgery, including surgical anatomy and clinical surgery. The fee is 15 guineas.

## ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS, IRELAND.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence of having before entering on medical studies, passed a Preliminary Examination in general education recognised by the Royal Colleges. Each candidate before receiving his diplomas must produce a registrar's certificate or other satisfactory evidence that he has attained the age of 21 years.

*Preliminary Examination.*—The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

*Professional Examinations.*—Candidate must pass four Professional Examinations—at the end of the first, second, third, and fifth years respectively of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other Licensing body. All examinations shall be conducted so far as possible by demonstration of objects placed before the candidates.

*First Professional Examination.*—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; and (2) of having attended a course of—(*a*) lectures on Theoretical Chemistry, winter course; (*b*) Practical Chemistry, three months' summer or winter course; (*c*) Elementary Biology; and (*d*) Physics.

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Biology. The fee for this examination is £15 15*s.*

*Second Professional Examination.*—Candidates are not admissible to this examination before the end of their second winter session. Every candidate is required, before admission to the Second Professional Examination, to produce evidence of having passed the First Professional Examination, and certificates of having attended—(1) Anatomical Dissections, two courses of six months; (2) Practical Histology, three months; (3) Lectures on (*a*) Anatomy, six months; (*b*) Physiology, six months; (*c*) Practical Physiology and Histology, three months.

The subjects of the Second Professional Examination are the following:—(1) Anatomy; and (2) Physiology and Histology. The fee for this examination is £10 10*s.*

*Third Professional Examination.*—Candidates are not admitted to this examination before the end of their third winter session. Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination and, in addition to the certificates required for the Second Professional Examination, certificates of having attended—(*a*) Pathology; (1) Systematic, (2) Practical, three months each; (*b*) Materia Medica, Pharmacy, and Therapeutics, three months; (*c*) Forensic Medicine and Public Health, three months; (*d*) Surgery, six months. Satisfactory evidence must be produced of attendance in fever wards in connexion with the hospital attendance in either the third or a subsequent year.

The subjects for the Third Professional Examination are the following:—(1) Pathology; (2) Materia Medica, Pharmacy, and Therapeutics; (3) Public Health and Forensic Medicine. The fee for this examination is £9 9*s.*

*Final Professional Examination.*—Candidates may take one or two sections of this examination at the end of the third year but cannot complete it till the expiry of four years from the passing the First Professional Examination. Every candidate is required before admission to produce evidence (1) of having passed the Third Professional Examination; (2) of having attended—(*a*) at a General Hospital for 27 months; (*b*) Clinical Instruction in Ophthalmic and Aural Surgery for three months; (*c*) a Midwifery Hospital or Maternity, six months; (*d*) Vaccination; and (*e*) Clinical Instruction in Mental Diseases, one month; and (3) Courses of Instruction at a recognised medical school in (*a*) Medicine, six months; (*b*) Surgery, six months; (*c*) Operative Surgery, three months; and (*d*) Midwifery (including Diseases Peculiar to Women and to New-born Children), six months.

The subjects for the Fourth Professional Examination are the following:—(1) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (2) Surgery, including Operative Surgery and Ophthalmic Surgery; (3) Midwifery, including Diseases of Women and New-born Children and Vaccination. Every candidate shall produce evidence of having acted as medical clinical clerk and as surgical dresser. Candidates may present themselves for examination in *all* the subjects of the Final Examination at the *same* time or in certain groups of subjects. The fee for this examination is £6 6*s.* Further particulars can be obtained on application to Alfred Miller, Secretary of the Committee of Management, Royal College of Physicians, Dublin.

## ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The College issues its Licences in Medicine and in Midwifery to practitioners whose names appear on the Medical Register of the United Kingdom.

*The Licence in Medicine.*—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

*The Licence in Midwifery.*—Candidates must produce certificates of registration. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

*Fees.*—Fee for the Licence to practise Medicine, £15 15*s.* Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16*s.* —to be lodged in one sum. Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege and will be required to pay the full fee of five guineas for the Licence in Midwifery. Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £5 5*s.* Fee for special examination for the Licence to practise Midwifery, £10 10*s.* The examinations for these Licences are held in the week following the first Friday in February, May, and November.

*The Membership.*—Examinations for Membership are held in January, April, July, and October. The fee for the examination is £21 to Licentiates of the College, or £36 15*s.* to non-Licentiates. Further particulars can be obtained from the Registrar of the Royal College of Physicians of Ireland, Kildare-street, Dublin.

## ROYAL COLLEGE OF SURGEONS IN IRELAND.

*The Licence in Surgery.*—Candidates who hold registrable surgical diplomas (including the Licence of the Apothecaries' Companies of London and Dublin granted since October, 1886) are admitted to examination without further evidence of study. Candidates who hold medical qualifications only (including the L.S.A. granted before October, 1886) will be required to produce certificates of two courses of lectures in Anatomy and Dissections, one course of Practical Histology, one course of lectures in Surgery, and one course of Operative Surgery. Candidates are examined in Surgery, Clinical Surgery, Operative Surgery on the subject, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly *vivâ voce*, and partly practical. The fee is £26 5*s.*, of which £5 5*s.* is retained by the College in the case of unsuccessful candidates.

*Diploma in Midwifery.*—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance on a course of lectures on Midwifery and Diseases of Women and Children in some school recognised by the Council; (*b*) attendance on six months' practice in connexion with a recognised lying-in hospital or dispensary for lying-in women and children; and (*c*) of having conducted at least 30 labour cases. The fee for the examination is £15 15*s.*, of which £5 5*s.* is retained by the College in case the candidate is unsuccessful.

*Fellowship Examinations.*—A candidate for the Fellowship shall make application to the President and Council to be admitted to examination and if the Council decide to entertain that application it shall lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to the application being considered, and the candidate shall then, if approved by the Council, be admitted to the next Sessional examination or to a special examination if granted by the Council, at such date as the President may fix. In order that these regulations may be carried out candidates are required to lodge their applications complete with the Registrar at least one month before the date of examination. Sessional Fellowship examinations commence, so far as arrangements permit, on the third Mondays in February, May, and November. Special examinations may be granted at other times by the Council if they see fit, on sufficient cause being shown, except during the months of August and September. Candidates for the Fellowship examination are divided into two Grades: I., Licentiates or Graduates in Surgery of less than 10 years' standing; II., Licentiates or Graduates in Surgery of more than 10 years' standing. Students not either Licentiates or Graduates in Surgery are permitted to present themselves for the *Primary* examination under Grade I.

*Grade I.*—Candidates are required to pass two examinations — Primary and Final. Candidates may present themselves for the Final examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary examination are (*a*) Anatomy, including Dissections; and (*b*) Physiology and Histology.

The subjects for the Final examination are (*a*) Surgery, including Clinical and Operative Surgery; and (*b*) Surgical Pathology.

*Grade II.*[1]—The subjects for examination are (*a*) Surgical Anatomy; (*b*) Surgery, including Clinical and Operative Surgery; and (*c*) Surgical Pathology.

*Fees.*—Grade I.:—For Licentiates of the College: for Primary examination, £15 15*s.*; for Final examination, £10 10*s.* For Licentiates in Surgery of other licensing bodies: for Primary examination, £26 5*s.*; for Final examination, £15 15*s.* For Students of the College: for Primary examination, £5 5*s.*; for Final examination, £21. For Students of other licensing bodies: for Primary examination, £10 10*s.*; for Final examination, £31 10*s.* Grade II.:—Licentiates of the College, £26 5*s.*; Licentiates in Surgery of other licensing bodies, £42; extra fee for Special examination, £10 10*s.*

In case of rejection £10 10*s.*, in addition to the special fee, if such has been paid, is retained by the College and is not allowed in the fees of re-examination.

A rejected candidate will not be again admitted to examination until after a period of three months.

Further particulars can be obtained from the Registrar of the College, Stephen's-green, West Dublin.

## SOCIETY OF APOTHECARIES OF LONDON.

There are two examinations—Primary and Final. The Final examination is divided into Section I. and Section II. The Primary examination is held quarterly. Final examinations are held monthly. No examinations are held in the month of September.

The Primary examination consists of two parts. Part I. Elementary Biology; Chemistry, Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Materia Medica and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances. Part II. includes the Principles and Practice of Medicine, Pharmacology, Pathology, and Morbid Histology; Forensic Medicine, Hygiene, Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Section I. of the Final examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final examination consists of two Parts. Part I. Clinical Surgery; Part II. Clinical Medicine and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

---

[1] On and after Jan. 1st, 1910, all Examinations for the Fellowship will be conducted under the scheme now known as Grade I. No candidate after the above date will, in any circumstances, be admitted to examination for the Fellowship of this College under the Scheme now known as Grade II., which will then cease to be used.

The course of study for the *Primary examination* is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, 12 months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School recognised by the Society. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary.

The course of study for the *Final examination, Section I.*, includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of one winter and one summer session; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership, six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship, six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on 20 Midwifery cases. The course of medical study must extend over the above-mentioned period of 45 months and the offices of dresser or clinical clerk must be held at a hospital, or other institution recognised by the Society.

The course of study for the *Final examination, Section II.*, includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of 12 months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. No candidate is eligible for the Final examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final examination the candidate must produce certificates: (1) of being 21 years of age; (2) of moral character; (3) of the course of medical study; (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board; and (5) of instruction in the administration of anæsthetics. Candidates intending to present themselves for examination are required to give 14 days' notice. A form for this purpose will be sent on application.

The fee for the Licence is 20 guineas. The examination offices are open from 10 A.M. to 4 P.M.; on Saturdays from 10 A.M. to 1 P.M. All letters should be addressed to the Secretary, Court of Examiners, Society of Apothecaries of London, Blackfriars, E.C.

## APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who present certificates of having fully completed the course of study as laid down in the curriculum and who pass the necessary examinations. The diploma of the Apothecaries Hall of Ireland entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, with also the privileges of the Apothecary's Licence. There are four professional examinations, the total fees for which amount to 21 guineas. Ladies are eligible for the diploma. Registered medical practitioners will receive the diploma of the Hall upon passing an examination in the subject or subjects not covered by their previous qualifications and on paying a fee of 10 guineas. If medicine or surgery be required five guineas extra will be charged.

The fees payable for each examination are as follows:—first professional, £5 5*s.*; second, £5 5*s.*; third, £5 5*s.*; final examination, £6 6*s.* If a candidate gives three clear days' notice of his inability to attend he may present himself at the ensuing examination without a further fee. A candidate is allowed for each professional examination which he has completed at any other licensing body except the final. If he has passed in some only of the subjects in a given examination he has to pay the whole of the fee for that examination. The fees for re-examination are for each subject £1 1*s.*, except in the subjects of chemistry, pharmacy, surgery, medicine, second anatomy, pathology, physiology, and ophthalmology, the fees for which are two guineas each. The fee for the third and final or final alone is £15 15*s.* when the other examinations have been taken elsewhere. All examination fees are to be lodged in the Sackville-street Branch of the Royal Bank of Ireland to the credit of the Examination Committee. Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary-street, Dublin, at least 14 clear days before the first day of examination.

There are four examinations—first, second, third, and final. The first three are held quarterly on the third Monday in January, April, July, and October; the finals are held in January and July. The first examination comprises biology, physics, theoretical and practical chemistry (with an examination at the bench). Pharmacy is put down in this examination, but it may be taken at any of the first three examinations. Candidates holding a Pharmaceutical licence are exempt from this subject. The second examination comprises anatomy of the whole body (including practical dissections), materia medica and therapeutics, physiology and practical histology. The third examination comprises pathology, materia medica if not taken at second examination, medical jurisprudence, and hygiene. The final examination comprises medicine, including clinical and oral, surgery, including operations, clinical and oral, ophthalmic surgery, including clinical and oral, midwifery, and gynæcology.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must before proceeding to the final examination produce evidence of having been registered as medical students for 57 months, also of having attended courses of instruction as follows:—one course each (of six months) of the following: anatomy (lectures), chemistry (theoretical), midwifery, practice of medicine, physiology, surgery, and dissections, two courses of six months each. Courses of three months: materia medica, medical jurisprudence, chemistry (practical), practical physiology and histology, operative surgery, physics, clinical ophthalmology, biology, clinical instruction in mental disease, pathology, and a course in vaccination. Medico-chirurgical hospital, 27 months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance, six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital. Three months' study of fever—which may be included in his 27 months' hospital attendance—in a hospital containing fever wards, and having taken notes of five cases of fever—viz., either typhus fever, typhoid fever, scarlet fever, small-pox, or measles. Six months' practical midwifery and diseases of women during the winter or summer of the third or the fourth year at a recognised lying-in hospital or maternity. Three months' practical pharmacy in a recognised clinical hospital or a recognised school of pharmacy, or a year in the compounding department of a licentiate apothecary or a pharmaceutical chemist. Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years. Each candidate must produce evidence of having before entering on medical studies passed a preliminary examination in general education recognised by the General Medical Council and of having been registered by that Council as a student in medicine. Certificates of medical study will not be recognised if the commencement of the course to which the certificate refers dates more than 15 days prior to such registration, except in the subjects of physics or biology. This registration is not undertaken by the Hall. The details of the course of education required and syllabus of the examinations will be supplied on application to the Registrar at 40, Mary-street, Dublin.

## UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a *practitioner's* examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. The fees are—For matriculation, £8 12*s.*; for 1st Part, £4 4*s.*; for 2nd Part, £4 8*s.*; for 3rd Part, £4 8*s.*; for legalisation of diploma, 8*s.*—total, £22. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. Unsuccessful candidates are allowed to come up again three months after rejection on payment of examination fees only, provided this second appearance be in the course of the same academical year (October 1st to June 30th), otherwise they must renew the payment of the matriculation fee of £8 12*s.* The examination consists of three parts, viz.—1st Part: General Medicine; Materia Medica and Pharmacology; General Surgery; and Theory of Midwifery. 2nd Part: General Therapeutics; Pathology and Morbid Anatomy, with use of the microscope; Special Therapeutics and Medicine of Internal Diseases, including Mental Diseases; and Special Surgery. 3rd Part: Public and Private Hygiene; Medical Jurisprudence; Clinical Medicine; Clinical Surgery; examination in Operative Surgery, consisting of some of the usual operations on the dead subject—viz., Amputation, Ligature of an Artery, &c.; Ophthalmology; examination in Midwifery, consisting in obstetrical operation on the mannikin (model of pelvis); and examination in Regional Anatomy with Dissection. The time required for the three examinations seldom exceeds ten days, and is usually less. Candidates have the option of passing each part separately or of taking the three together, and the latter is the usual course; also of demanding a written examination on payment of an additional fee of one guinea for each part, a rule of which candidates rarely or never avail themselves. The examinations, which are *vivâ voce*, begin on the first Tuesday in November, December, February, May, and June. Candidates should appear with their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. Most of the examiners speak English and those who do not examine through the medium of an interpreter. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. There are in England at present over 600 graduates holding this degree, and a British Association of Brussels Medical Graduates has been in existence for many years. Applications should be made to the Secrétariat, 14, Rue des Sols, Bruxelles.

## METROPOLITAN MEDICAL SCHOOLS.[1]

WE have already mentioned that all of the metropolitan medical schools are constituent schools of the University of London, and there is under the consideration of the University a proposal to establish a central school for the teaching of the preliminary subjects of the medical curriculum. The University recognises University College and King's College as two suitable centres for such teaching and proposes their continuance as such, but has suggested to the other schools that their preliminary studies should be conducted either at one of these centres or at a new central school to be built in Kensington as a third centre. Only one school, however, has hitherto acted on this proposition—viz., that attached to St. George's Hospital. This medical school ceased to teach the subjects for the first and second examinations soon after the scheme was put forward. Many of the remaining schools have intimated to the University that they intend to continue to teach all the subjects of the curriculum, their teachers being recognised for that purpose.

ST. BARTHOLOMEW'S HOSPITAL.—The clinical practice of the hospital is large. The hospital contains 744 beds, of which 674 are for patients in the hospital at Smithfield and 70 for convalescent patients at Swanley.

This hospital receives within its walls more than 7000 in-patients annually and its out-patients and casualties amount to more than 126,000 annually.

Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery in which Chief Assistants and Clinical Assistants are appointed annually. There is an Electrical Department, including X Ray, &c. Surgical operations take place every day at 1.30 P.M. and Surgical Consultations are held on Thursdays at the same hour. The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions. Clinical Lectures on all special subjects are also given. The visits of the physicians and surgeons are made at 1.30.

Ten house physicians and ten house surgeons are appointed annually. During their first six months of office they act as "junior" house physicians and house surgeons and receive a salary of £25 a year. During their second six months they become "senior" house physicians and house surgeons and are provided with rooms by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant and an ophthalmic house surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two assistant anæsthetists are appointed annually, and receive salaries of £120 and £100 respectively, with rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. All the appointments are now free. A residential college is attached to the hospital.

*New Buildings*.—The new buildings that have been recently opened comprise residential quarters for the resident staff, new casualty, medical, surgical, and special out-patient departments, new casualty wards, dispensary, and clinical lecture theatre. A new chemical laboratory has been added, available for the Medical School, and affording facilities for instruction in Public Health.

*The Medical School Buildings* include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pathology, chemical pathology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

*Special Classes* for the Final F.R.C.S. are held twice yearly. *Instruction in Preliminary Science* is given to University of London students in chemistry, biology, and physics throughout the year.

---

[1] For Scholarships see p. 627 et seq.

*Laboratory Instruction for the D.P.H.* is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join. Additional rooms for the Students' Union have recently been added, viz.: (*a*) a large reading and smoking room; (*b*) a committee and writing room; and (*c*) luncheon and dining hall. There are in the new block.

*Staff.*—Consulting Physicians: Sir William S. Church, Bart., K.C.B., Dr. Hensley, Sir Lauder Brunton, F.R.S., Dr. Gee, and Sir Dyce Duckworth. Consulting Surgeons: Sir Thomas Smith, Bart., K.C.V.O., Mr. Willett, Mr. Butlin, Mr. Marsh, and Mr. Langton. Consulting Ophthalmic Surgeon: Mr. Henry Power. Physicians: Dr. Norman Moore, Dr. Samuel West, Dr. Ormerod, Dr. Herringham, and Dr. Tooth, C.M.G. Surgeons: Mr. Harrison Cripps, Mr. Bruce Clarke, Mr. Anthony Bowlby, C.M.G., Mr. Lockwood, and Mr. D'Arcy Power. Assistant Physicians: Dr. Garrod, Dr. Calvert, Dr. Morley Fletcher, Dr. Drysdale, and Dr. Horton-Smith-Hartley. Assistant Surgeons: Mr. Waring, Mr. Eccles, Mr. Bailey, Mr. Rawling, and Mr. Gask. Physician Accoucheur: Dr. Champneys. Physician Accoucheur with charge of out-patients: Dr. W. S. A. Griffith. Surgeon to Obstetric Wards: Mr. Harrison Cripps. Assistant Physician Accoucheur: Dr. Williamson. Ophthalmic Surgeons: Mr. Jessop and Mr. Holmes Spicer. Aural Surgeon: Mr. Cumberbatch. Assistant Aural Surgeon: Mr. C. E. West. Dental Surgeons: Mr. Paterson and Mr. Ackland. Assistant Dental Surgeons: Dr. Austen and Mr. Coleman. Medical Officer in charge of Electrical Department: Dr. Lewis Jones. Pathologist: Dr. Andrewes. Administrators of Anæsthetics: Mr. Gill and Mr. Cross. Assistant Administrator of Anæsthetics: Mr. Boyle. Medical Registrars: Dr. Horder and Dr. Langdon Brown. Surgical Registrar: Mr. Gordon Watson. Casualty Physicians: Dr. Hudson and Dr. Pritchard.

*Lectures and Demonstrations.*—Medicine: Dr. Norman Moore and Dr. S. West. Clinical Medicine: Dr. Norman Moore, Dr. S. West, Dr. J. A. Ormerod, Dr. W. P. Herringham, and Dr. H. H. Tooth. Practical Medicine: Dr. J. H. Drysdale and Dr. Horton-Smith-Hartley. Surgery: Mr. W. Bruce Clarke and Mr. D'Arcy Power. Clinical Surgery: Mr. Harrison Cripps, Mr. W. Bruce Clarke, Mr. Anthony Bowlby, Mr. C. B. Lockwood, and Mr. D'Arcy Power. Practical Surgery: Mr. R. C. Bailey and Mr. L. B. Rawling. Operative Surgery: Mr. R. C. Bailey, Mr. W. McAdam Eccles, and Mr. L. B. Rawling. Midwifery and the Diseases of Women and Children: Dr. F. H. Champneys. Practical Midwifery: Dr. J. A. Willett. Pathology: Dr. F. W. Andrewes. Bacteriology (advanced): Dr. E. E. Klein. Chemical Pathology: Dr. A. E. Garrod. Morbid Anatomy and Post Mortems: Dr. T. J. Horder, Dr. Langdon Brown, and Mr. Watson. Practical Pathology: Mr. F. A. Rose, Dr. H. Thursfield, Mr. R. C. Elmslie, and Dr. Neligan. Ophthalmic Medicine and Surgery: Mr. W. H. Jessop. Diseases of the Eye: Mr. W. H. Jessop and Mr. W. Holmes Spicer. Ophthalmic Demonstrations: Mr. W. Holmes Spicer. Diseases of the Ear: Mr. A. E. Cumberbatch and Mr. C. E. West. Diseases of the Larynx: Mr. W. D. Harmer and Mr. F. E. Rose. Orthopædic Surgery: Mr. W. MacAdam Eccles. Diseases of the Skin: Dr. J. A. Ormerod. Diseases of Children: Dr. A. E. Garrod and Dr. H. Morley Fletcher. Medical Electricity and Electro-therapeutics: Dr. H. Lewis Jones. Mental Diseases and Insanity: Dr. T. Claye Shaw. Dental Surgery: Mr. W. B. Paterson and Mr. R. C. Ackland. Anæsthetics: Mr. R. Gill, Mr. W. F. Cross, and Mr. H. E. G. Boyle. Forensic Medicine: Dr. W. P. Herringham. Descriptive and Surgical Anatomy: Dr. C. Addison. Practical Anatomy: Dr. C. Addison, Mr. C. G. Watson, Mr. R. B. Etherington-Smith, and Mr. H. W. Wilson. General Anatomy and Physiology: Dr. J. S. Edkins. Practical Physiology: Dr. J. S. Edkins, Dr. W. Langdon Brown, and Dr. C. M. H. Howell. Materia Medica, Pharmacology, and Therapeutics: Dr. James Calvert. Pharmacology: Dr. F. A. Bainbridge. Biology and Comparative Anatomy: Dr. T. W. Shore. Practical Biology: Dr. T. W. Shore, Mr. T. S. Lukis, and Mr. C. T. Neve. Chemistry: Dr. W. H. Hurtley. Practical Chemistry: Dr. W. H. Hurtley and Mr. K. S. Caldwell. Physics: Mr. F. Womack. Practical Physics: Mr. F. Womack and Mr. Lloyd Hopwood. Botany: Rev. G. Henslow. Public Health: Dr. George Newman. Sanitary Law: Dr. G. Newman. Museum Curator: Dr. F. W. Andrewes. Junior Curator: Dr. W. P. S. Branson. Dean of the School: Dr. T. W. Shore. Warden of College: Mr. G. E. Gask.

---

CHARING CROSS HOSPITAL.—This hospital and convalescent home contain 287 beds, a certain proportion of which are set aside for the diseases of children and those special to women. The number of patients treated during 1906 amounted to 24,681—viz., 2539 in-patients and 22,142 out-patients, (of whom 10,390 were casualties. There were 70,186 out-patient attendances. The following hospital appointments are open to students. Clinical Pathologist and Bacteriologist, salary £150 per annum. Curator and Pathologist (annual), £100. Assistant Anæsthetist, £60. Medical and Surgical and Obstetrical Registrars (annual), £40 each. Resident Medical Officer (annual), £100, with board and residence. Six House Physicians, six House Surgeons, and two Resident Obstetric Officers, appointed each year on the recommendation of the committee after competitive examinations, are provided with board and residence in the hospital. Clinical clerks and dressers are appointed in all the general and special departments of the hospital. Arrangements can be made for students who have not entered for the entire curriculum to hold these posts. In the medical school demonstratorships and assistant demonstratorships in various subjects are open to students of the school and carry honoraria. Total fees, including students' club:—For general students: 1. Composition fee, payable in one sum on joining, 115 guineas. 2. Sessional payment system: Entrance fee, 10 guineas. In addition a sum of 15 guineas must be paid at the beginning of every Winter Session and one of 10 guineas at the beginning of every Summer Session so long as the student remains in the school. For Dental students: The fees for the two years' curriculum required by dental students may be paid: (*a*) in one sum of 55 guineas on entry; (*b*) in two instalments, one of 31 guineas on entry and the second of 30 guineas at the end of the first twelve months. General students pay proportionally lower fees and are admitted without additional fee to the courses of Clinical Medicine and Surgery. They are entitled to compete for the Scholarships which are awarded annually to the value of £575, including two University Scholarships, value 72 guineas each, Gold Medal, Huxley, and Pereira Prizes.

Classes for the Preliminary Scientific and Intermediate Examinations of the University of London and for the Primary F.R.C.S. are held at this Medical School. There are also special classes for the practical work for the Department of Public Health and for the Primary F.R.C.S.

*Staff.*—Consulting Physicians: Dr. Green, Dr. Bruce, and Dr. Abercrombie. Consulting Obstetric Physician: Dr. J. Watt Black. Physicians: Dr. Murray, Dr. Mott, and Dr. Galloway. Assistant Physicians: Dr. Hunter, Dr. Bosanquet, Dr. Fenton, and Dr. Forsyth. Consulting Surgeons: Mr. R. Barwell, Mr. Bloxam, and Mr. Morgan, C.V.O. Surgeons: Mr. Boyd, Mr. Waterhouse, and Mr. Wallis. Surgeon to Out-patients: Mr. Gibbs. Assistant Surgeons: Mr. Clogg and Mr. Daniel. Obstetric Physician: Dr. Amand Routh. Assistant Obstetric Physician: Dr. T. W. Eden. Physician for Diseases of the Skin: Dr. Galloway. Assistant Physician for Diseases of the Skin: Dr. MacLeod. Physician to the Electrical Department: Dr. Ironside Bruce. Surgeon for Nose, Throat, and Ear: Mr. Waggett. Ophthalmic Surgeon: Mr. Treacher Collins. Orthopædic Surgeon: Mr. Fairbank. Surgeon Dentist: Mr. J. F. Colyer. Physician for Mental Diseases: Dr. Mercier.

*Lecturers: Winter Session.*—Anatomy: Dr. Alexander Macphail. Bacteriology: Mr. Leathem. Biology and Comparative Anatomy: Dr. H. W. Marett Tims. Chemistry and Physics: Dr. H. Forster Morley. Dental Surgery: Mr. J. F. Colyer. Medicine: Dr. H. Montague Murray and Dr. F. W. Mott. Ophthalmology: Mr. E. Treacher Collins. Physiology and Histology: Mr. C. F. Myers-Ward. Practical Anæsthetics: Mr. C. Carter Braine. Practical Anatomy: Dr. Alexander Macphail. Practical Hygiene: Mr. Leathem and Dr. H. Forster Morley. Practical Medicine: Dr. Bosanquet and Dr. Forsyth. Diseases of Women: Dr. Amand Routh. Practical Midwifery: Dr. T. W. Eden. Practical Physiology: Mr. C. F. Myers-Ward. Practical Surgery: Mr. F. C. Wallis, Mr. H. S. Clogg, and Mr. Fairbank. Operative Surgery: Mr. Charles Gibbs. Psychological Medicine: Dr. Mercier. Surgery: Mr. H. F. Waterhouse. Tropical Medicine: Sir Patrick Manson.

*Summer Session.*—Anatomy: Dr. Alexander Macphail.

Anæsthetics: Mr. C. Carter Braine. Dental Surgery: Mr. J. F. Colyer. Forensic Medicine: Dr. Fenton. Materia Medica and Practical Pharmacy: Dr. Galloway. Midwifery: Dr. Amand Routh. Diseases of Women: Dr. T. W. Eden. Pathology: Dr. W. Hunter. Pharmacology and Therapeutics: Dr. Galloway. Anatomy: Dr. Alexander Macphail. Practical Chemistry: Dr. H. Forster Morley. Practical Medicine: Dr. Bosanquet and Dr. Forsyth. Practical Physiology: Mr. C. F. Myers-Ward. Public Health: Dr. H. T. Bulstrode. Toxicology: Dr. H. Forster Morley. Roentgen Ray: Dr. Ironside Bruce. Dean of the Medical School: Mr. Frederick C. Wallis.

St. George's Hospital.—This hospital contains 350 beds, of which 205 are allotted to surgical and 145 to medical cases. One ward is set apart for Diseases peculiar to Women. Children's beds are placed in all the women's wards. Two wards are allotted to ophthalmic cases.

The Winter Session commences on Oct. 1st but students can enter at any time or for any particular course. The Hospital and Medical School are situated at Hyde Park-corner and are readily accessible from all parts of London. Entrance Scholarships in Anatomy and Physiology are awarded at the commencement of each Winter Session. Prizes: The William Brown Exhibition of £100 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital. Students are permitted to enter the wards of the hospital at any hour. Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. A large number of house office appointments are open without fee to every perpetual student of the hospital and are made strictly in accordance with the merits of the candidates. Special attention is directed to the following paid appointments, amongst others, which are open to students after they have held house office:—Medical Registrarship at £200 per annum; Surgical Registrarship at £200; Curatorship of the Museum at £200; Assistant Curatorship at £100; Obstetric Assistantship (Resident) at £50; the post of Senior Anæsthetist at £50; the posts (2) of Junior Anæsthetists, each at £30. Great attention is paid by members of the staff to individual teaching. A number of special courses are given in which the requirements of university and other examinations receive careful attention. The following may be cited as examples:—(1) Elementary Bacteriology; (2) Advanced Bacteriology; (3) Clinical Pathology; (4) Systematic Pathology; (5) Histological Pathology and Morbid Anatomy; (6) Operative Surgery; (7) Public Health; and (8) Tropical Diseases. Special test examinations and classes are held by members of the staff for all examinations. The school possesses an Amalgamation Club, with well-fitted reading-, smoking-, and luncheon-rooms on the hospital premises. Students have the advantage of a well-filled library of medical and scientific books which is kept thoroughly up-to-date. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean. Further information may be obtained from the Dean of the Medical School. Dr. E. I. Spriggs, Dean.

*Staff.*—Consulting Physicians: Sir Henry Pitman, Dr. W. H. Dickinson, Dr. T. T. Whipham, and Sir Isambard Owen. Consulting Surgeons: Mr. Holmes, Mr. Pick, Mr. Hayward, Sir W. Bennett, and Mr. Marmaduke Sheild. Consulting Ophthalmic Surgeons: Mr. Brudenell Carter and Mr. Adams Frost. Consulting Aural Surgeon: Sir William Dalby. Consulting Dental Surgeon: Mr. Winterbottom. Physicians: Dr. William Ewart, Dr. H. D. Rolleston, Dr. Ogle, and Dr. Latham. Obstetric Physician: Dr. W. R. Dakin. Assistant Physicians: Dr. Collier, Dr. Spriggs, and Dr. Jex-Blake. Assistant Obstetric Physician: Dr. A. F. Stabb. Physician to the Skin Department: Dr. W. S. Fox. Physician Anæsthetist: Dr. F. Hewitt. Surgeons: Mr. C. T. Dent, Mr. G. R. Turner, Mr. F. Jaffrey, and Mr. Pendlebury. Ophthalmic Surgeon: Mr. H. B. Grimsdale. Assistant Surgeons: Mr. T. Crisp English, Mr. L. Jones, and Mr. W. F. Fedden. Surgeon to the Orthopædic Department: Mr. F. Jaffrey. Surgeon to the Throat Department: Mr. H. S. Barwell. Aural Surgeon: Mr. W. C. Bull. Dental Surgeon: Mr. N. G. Bennett. Assistant Dental Surgeon: Mr. Morley.

Guy's Hospital.—This hospital, founded by Thomas Guy in 1721 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 602 beds.

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, ophthalmic house surgeons, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical and medical clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical council according to merit and without extra payment. The house physicians, of whom there are four, hold office for six months each. The out-patient officers, who hold office for three months, attend in the out-patient department five afternoons in the week and see all the cases not seen by the assistant physician of the day. The house physicians have the care of the patients in the medical wards and attend to all emergencies arising in the absence of the physicians. They are provided with board and lodging in the college free of expense. The house surgeons, of whom there are four, hold office for six months each and are provided with board and lodging in the college free of expense. The Surgical Casualty Department is in charge of two assistant house surgeons and there are four out-patient officers appointed each three months. The surgeons' dressers are selected from those students who have completed their third winter session and have been most diligent in the junior appointments. They hold office for three or six months. Six are attached to each surgeon and during their weeks of special duty they are provided with board and lodging in the hospital free of expense. The obstetric residents, four in number, are provided with board and lodging in the college free of expense. The college stands upon a site fronting the east gate of the hospital and is connected with it by a subway. The building serves as a Residential College for Students and at the same time provides accommodation for the Students' Club.

*Medical and Surgical Staff.*—Consulting Physicians: Sir Samuel Wilks, Bart., Dr. F. W. Pavy, Dr. P. H. Pye-Smith, Dr. J. F. Goodhart, and Dr. F. Taylor. Consulting Surgeons: Mr. Thomas Bryant, Sir H. G. Howse, Mr. W. H. A. Jacobson, and Mr. R. C. Lucas. Consulting Obstetric Physician: Dr. A. L. Galabin. Consulting Physician for Mental Diseases: Dr. G. H. Savage. Consulting Aural Surgeon: Mr. W. Laidlaw Purves. Consulting Anæsthetist: Mr. Tom Bird. Consulting Ophthalmic Surgeons: Mr. C. Higgens and Mr. W. A. Brailey. Physicians and Assistant Physicians: Dr. W. Hale White, Dr. G. Newton Pitt, Sir Cooper Perry, Dr. L. E. Shaw, Dr. J. Fawcett, Dr. A. P. Beddard, Dr. H. S. French, and Dr. Hertz. Surgeons and Assistant Surgeons: Mr. C. H. Golding-Bird, Mr. Charters J. Symonds, Mr. W. Arbuthnot Lane, Mr. L. A. Dunn, Sir Alfred Fripp, C.B., K.C.V.O., Mr. F. J. Steward, Mr. Fagge, and Mr. R. P. Rowlands. Obstetric Physicians: Dr. P. Horrocks and Mr. J. H. Targett. Assistant Obstetric Physician: Mr. G. Bellingham Smith. Ophthalmic Surgeons: Mr. H. L. Eason and Mr. A. W. Ormond. Physician in Charge of Skin Department: Sir Cooper Perry. Physician for Mental Diseases: Dr. M. Craig. Surgeon in Charge of Throat Department: Mr. F. J. Steward. Surgeon in Charge of Aural Department: Mr. C. H. Fagge. Dental Surgeons: Mr. W. A. Maggs, Mr. R. Wynne Rouw, Mr. H. L. Pillin, and Mr. M. F. Hopson. Anæsthetists: Mr. G. Rowell, Dr. H. F. Lancaster, Mr. C. J. Ogle, Mr. P. Turner, Dr. D. Forsyth, Mr. W. M. Mollison, Mr. A. R. Thompson, and Mr. R. Davies-Colley. Medical Registrars and Tutors: Dr. H. C. C. Mann and Mr. H. C. Cameron. Obstetric Registrar and Tutor: Mr. R. Davies-Colley. Surgical Registrars and Tutors: Mr. G. Hamilton and Mr. A. S. Bankart. Actino-Therapeutic Department: Dr. C. E. Iredell. Radiographers: Mr. E. W. H. Shenton, Dr. A. E. Jordan, and Dr. C. J. Morton. Bacteriologist to the Hospital: Dr. W. H. Eyre. Resident Surgical Officer: Mr. E. C. Hughes, M.C. Hon. Librarian, Wills Library: Dr. L. E. Shaw. Lying-in Charity: Mr. Targett and Mr. Bellingham Smith. Dean of the Medical School: Dr. H. L. Eason. Warden of the College: Mr. W. M. Mollison, M.C.

*Lecturers and Demonstrators.*—Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Medicine: The Physicians. Practical Medicine: Dr. Bell Walker and Mr.

Mann. Surgery: Mr. Golding-Bird, Mr. Symonds, Mr. Lane, and Mr. Dunn. Operative Surgery: Sir Alfred Fripp and Mr. Steward. Practical Surgery: Mr. Hamilton and Mr. Bankart. Midwifery and Diseases of Women: Dr. Horrocks and Mr. Targett. Practical Obstetrics: Mr. Davies-Colley. Mental Diseases: Dr. Craig. Ophthalmic Surgery: Mr. Eason. Dental Surgery: Mr. Wynne Rouw. Aural Surgery: Mr. Fagge. Diseases of the Skin: Sir Cooper Perry. Diseases of the Throat: Mr. Steward. Anæsthetics: Mr. Rowell. Hygiene and Public Health: Dr. R. King Brown. Pathology: Dr. A. E. Boycott. Gordon Lecturer on Experimental Pathology: Dr. Boycott. Morbid Anatomy: Dr. Fawcett and Dr. French. Morbid Histology and Bacteriology: Dr. Eyre and Dr. Boycott. Medical and Surgical Pathology Classes: Dr. Fawcett and Mr. Steward. Bacteriology: Dr. Eyre. Practical Bacteriology: Dr. Eyre. Forensic Medicine: Sir Thomas Stevenson, M.D. Anatomy: Sir Alfred Fripp and Mr. Steward. Practical Anatomy: Mr. P. Turner, Mr. W. M. Mollison, and Dr. A. R. Thompson. Physiology: Dr. Pembrey. Practical Physiology: Dr. Pembrey, Mr. J. H. Ryffel, B.Sc., and Mr. P. P. Laidlow, B.C. Materia Medica and Therapeutics: Dr. A. P. Beddard. Practical Pharmacy: the Hospital Pharmacist. Chemistry: Dr. Wade. Practical Chemistry: Dr. Wade, Mr. Ball, and Mr. Merriman. Experimental Physics: Dr. Fison and Mr. Merriman. Biology: Mr. Assheton, Dr. Stevens, and Mr. Thompson. Psychology: Dr. Craig.

KING'S COLLEGE AND HOSPITAL.—The Faculty of Medicine at King's College is now divided into two parts; the first is concerned with Preliminary and Intermediate subjects and instruction on these is given in the College laboratories. This department is now designated Faculty of Science (Medical Division); the second deals with the Advanced or Final subjects of the curriculum, instruction on which is given at the hospital, except in subjects like Bacteriology where laboratory courses are necessary.

In the Faculty of Science (Medical Division) the following are the:—

*Lecturers on Preliminary and Intermediate Subjects.*—Anatomy: Dr. P. Thompson (Professor), Dr. C. J. Jenkins (Lecturer), and Mr. J. E. S. Frazer (Demonstrator). Physiology: Dr. W. D. Halliburton (Professor), Dr. H. W. Lyle (Lecturer), Dr. O. Rosenheim (Lecturer on Chemical Physiology), and Dr. C. S. Myers (Lecturer on Experimental Psychology). Zoology: Dr. A. Dendy (Professor). Botany: Dr. W. B. Bottomley (Professor) and Mr. E. J. Schwartz (Demonstrator). Chemistry: Dr. J. M. Thomson (Professor), Mr. H. Jackson (Assistant Professor), and Mr. P. H. Kirkaldy (Lecturer). Physics: Dr. Wilson. Materia Medica and Pharmacology: Dr. W. E. Dixon (Professor).

*Fees.*—For London University Course: for Preliminary Scientific (Part I.), 25 guineas; for Preliminary Scientific (Part II.) and Intermediate M.B., 55 guineas, or two instalments of 30 guineas each. For Conjoint Board Course: for First examination, 20 guineas; for Second examination, 55 guineas, or two instalments of 30 guineas each. For prospectus and further information application should be made to Dr. P. Thompson, Dean of the department.

The advanced or final subjects in the curriculum are dealt with at the Medical School attached to King's College Hospital. The hospital contains 224 beds. 3000 in-patients, 16,000 new out-patient cases, 40,600 casualties, and about 350 midwifery cases are attended yearly. The hospital contains special departments for diseases of women and children, and of the eye, ear, throat and nose, skin and teeth. There are special operation theatres for diseases of women, for eye, and for throat, nose, and ear cases. There is a clinical pathologist and a laboratory in the hospital where histological, bacteriological, hæmatological, and chemical investigations are carried out. In connexion with this is a vaccine department for the treatment of patients suffering from tuberculosis and other infective diseases. The appointments open to students are those of senior clinical assistant to the special departments; senior medical, surgical, and obstetric registrar; and Sambrooke medical and surgical registrars, all of whom receive salaries, as do the medical and surgical tutors. There are 14 resident medical and surgical officers appointed yearly and the usual six senior surgical dressers, medical and obstetric clinical clerks, surgical dressers, and clerks and dressers in all the special departments for in- and out-patients, and post-mortem clerks.

*Hospital Staff.*—Consulting Physicians: Sir A. B. Garrod, Dr. Alfred B. Duffin, and Dr. I. Burney Yeo. Consulting Surgeons: Lord Lister and Mr. W. Rose. Physicians: Dr. David Ferrier, Dr. Nestor Tirard, Dr. Norman Dalton, Sir Hugh Beevor, Bart., and Dr. Raymond Crawfurd. Surgeons: Mr. W. Watson Cheyne, Mr. A. B. Barrow, Mr. A. Carless, Mr. F. F. Burghard, Mr. G. L. Cheatle, and Mr. P. T. B. Beale. Assistant Physicians: Dr. W. Aldren Turner and Dr. Tunnicliffe. Obstetric Physician: Dr. John Phillips. Assistant Obstetric Physician: Dr. Hugh Playfair. Physician for the Diseases of Children: Dr. George F. Still. Diseases of the Throat: Dr. StClair Thomson. Dental Surgeon: Mr. A. S. Underwood. Assistant Dental Surgeon: Mr. C. E. Wallis. Ophthalmic Surgeons: Mr. M. M. McHardy and Mr. L. V. Cargill. Aural Surgeons: Dr. Urban Pritchard and Mr. Arthur H. Cheatle. Physician for Diseases of the Skin: Dr. A. Whitfield. Pathological Registrar: Dr. Norman Dalton. Physician in charge of Electrical Department: Dr. W. Aldren Turner. Medical Officer in charge of X Ray Department: Mr. A. D. Reid. Anæsthetist and Instructor in Anæsthetics: Dr. J. F. W. Silk. Assistant Anæsthetist: Dr. G. B. Flux. Clinical Pathologist: Dr. Emery. Senior Medical Registrar and Tutor: Dr. J. C. Briscoe. Senior Surgical Registrar and Tutor: Dr. T. Percy Legg. Obstetric Registrar and Tutor: Dr. G. de B. Turtle. Sambrooke Registrars: Mr. H. W. Wiltshire and Mr. R. H. Gompertz.

*Lecturers on Final Subjects.*—Medicine (Principles and Practice of): Dr. Nestor Tirard (Professor). Neuro-Pathology: Dr. D. Ferrier (Professor) and Dr. W. A. Turner (Demonstrator). Psychological Medicine: Dr. Ernest W. White (Professor). Surgery (Principles and Practice of): Mr. A. Carless (Professor). Surgery (Operative): Mr. F. F. Burghard (Teacher). Surgical Pathology: Mr. G. L. Cheatle (Teacher). Obstetric Medicine and Diseases of Women and Children: Dr. John Phillips (Professor). Practical Obstetrics: Dr. Hugh Playfair (Lecturer). Diseases of Children: Dr. G. F. Still (Professor). Pathology: Dr. N. Dalton (Professor). Forensic Medicine: Dr. W. R. Smith (Professor). Hygiene: Dr. W. J. R. Simpson (Professor). State Medicine: Dr. Hewlett (Professor) and Mr. D. Somerville (Demonstrator). Bacteriology: Dr. Hewlett (Professor) and Dr. F. E. Taylor. Ophthalmic Surgery: Mr. M. M. McHardy (Professor). Aural Surgery: Dr. Urban Pritchard (Professor). Dermatology: Dr. A. Whitfield (Professor). Anæsthetics: Dr. J. F. W. Silk. Dental Surgery: Mr. A. S. Underwood (Professor). Diseases of the Skin: Dr. A. Whitfield (Physician).

*Fees.*—The composition fee for Hospital work and Final subjects of the curriculum is 70 guineas in one sum or in two equal instalments of 36 guineas payable on entrance and on commencement of second year of study respectively. For information and prospectus application should be made to Peyton T. B. Beale, F.R.C.S., Dean of the Hospital. For information regarding fees, curriculum, &c., in Public Health and Bacteriology application should be made to Professor Hewlett.

*Athletic Club.*—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubs.

LONDON HOSPITAL.—The hospital has 914 beds in constant use and no beds are closed. Being the only general hospital for East London—i.e., for a million and a half people—the practice is immense. In-patients last year, 14,139; out-patients, 229,408; accidents, 15,779; major operations, 3368. Owing to the enormous number of patients more appointments are open to students than at any other hospital. Receiving-room officers, house physicians, house surgeons, &c.: 90 of these qualified appointments are made annually and more than 150 dressers, clinical clerks, &c., appointed every three months. All are free to students of the College. Holders of resident appointments have free board. Special classes are held for the University of London and other higher examinations. Special entries for medical and surgical practice can be made. Lectures and classes are held throughout the year to suit the requirements of candidates desirous of obtaining the diploma in Public Health. The Lecturer on Public Health has his offices in the College, enabling the candidates to attend daily to work under his supervision. These courses are recognised both by the Universities of Oxford, Cambridge, London, &c., and by the Examining Board in England. A reduction of 15 guineas is made from the perpetual fee to the sons of members of the profession. The new laboratories and class-rooms for Bacteriology, Vaccino-therapy, Public Health, Operative Surgery, Chemistry, and Biology are now in full use. The new Clubs Union Rooms, Garden, and Fives Court are now open. The Clubs Union Athletic Ground is within easy reach of the hospital. The Metropolitan and other railways have stations close to the hospital and the college.

*Staff.*—Consulting Physicians: Dr. Hughlings Jackson and Sir Stephen Mackenzie. Consulting Surgeons: Mr. Hutchinson, Mr. Couper, Mr. McCarthy, Sir Frederick Treves, Bart., and Mr. Tay. Consulting Obstetric Physician: Dr. Herman. Physicians: Dr. Francis Warner, Dr. Percy Kidd, Dr. Frederick J. Smith, Dr. W. J. Hadley, Dr. Bertrand Dawson, Dr. Henry Head, and Dr. Robert Hutchison. Assistant Physicians: Dr. Lewis Smith, Dr. Wall, Dr. Grünbaum, and Dr. Thompson. Surgeons: Mr. C. W. Mansell-Moullin, Mr. Hurry Fenwick, Mr. F. S. Eve, Mr. J. Hutchinson, jun., Mr. T. H. Openshaw, Mr. H. P. Dean, and Mr. P. Furnivall. Assistant Surgeons: Mr. H. Barnard, Mr. Rigby, Mr. Sherren, and Mr. Lett. Obstetric Physician: Dr. Lewers. Assistant Obstetric Physician: Dr. Andrews. Physician to the Skin Department: Dr. Sequeira. Consulting Dental Surgeon: Mr. Barrett. Consulting Anæsthetist: Dr. Hewitt. Ophthalmic Surgeons: Mr. A. B. Roxburgh and Mr. Lister. Surgeon to the Throat Department: Dr. Lambert Lack. Aural Surgeon: Mr. Hunter Tod. Medical Officer in charge of the Electrical Department: Dr E. R. Morton. Physician in charge of the Photo-therapy Department: Dr. Sequeira. Analyst to the Hospital: Mr. Hugh Candy. Bacteriologist to the Hospital: Dr. W. Bulloch. Dental Surgeons: Mr. Dolamore and Mr. Farmer. Anæsthetists: Dr. Probyn-Williams, Mr. Hilliard, and Mr. Clapham.

*Lecturers.*—Medicine: Dr. Percy Kidd and Dr. Hadley. Clinical Medicine: the Physicians and Assistant Physicians. Surgery: Mr. C. W. Mansell-Moullin. Clinical Surgery: the Surgeons and Assistant Surgeons. Anatomy: Dr. A. Keith. Physiology: Dr. Leonard Hill, Mr. J. A. Craw, Mr. Greenwood, and Mr. Flack. Chemistry: Mr. F. J. M. Page and Mr. Hugh Candy. Pathology—General and Surgical: Dr. W. Bulloch. Midwifery and Diseases of Women: Dr. Lewers. Clinical Obstetrics: The Obstetric Physicians. Practical Obstetrics: Dr. Andrews. Forensic Medicine—(1) Public Health: Dr. J. C. Thresh; and (2) Medical Jurisprudence and Toxicology: Dr. F. J. Smith. Public Health and Sanitary Science: Dr. W. Bulloch, Dr. John C. Thresh, and Mr. F. J. M. Page. Mental Diseases: Dr. J. Kennedy Will. Materia Medica and General Therapeutics: Dr. Francis Warner and Dr. Grünbaum. Biology: Mr. G. P. Mudge. Experimental Physics: Mr. F. J. M. Page, Mr. Hugh Candy, and Mr. Griffith. Ophthalmic Surgery: Mr. A. B. Roxburgh. Diseases of the Throat: Dr. Lambert Lack. Aural Surgery: Mr. Hunter Tod. Anatomy and Pathology of the Teeth: Mr. H. Dolamore and Mr. F. M. Farmer. Practical Anatomy: Dr. Arthur Keith, Mr. Howard, and Mr. Patterson. Practical Physiology and Histology: Dr. Leonard Hill, Mr. Craw, Mr. Greenwood, and Mr. Flack. Foods and Dietetics: Dr. R. Hutchison. Practical Chemistry: Mr. F. J. M. Page and Mr. Hugh Candy. Operative Surgery: Mr. H. P. Dean. Demonstrators of Morbid Anatomy: Dr. F. J. Smith, Dr. W. J. H. Hadley, Dr. Dawson, and Dr. Lewis Smith. Bacteriology: Dr. W. Bulloch and Mr. Twort. Pathological Histology: Dr. W. Bulloch. Inoculation Department: Dr. Western. Therapeutic Electricity and Radiography: Dr. A. E. Morton. Anæsthetics: Dr. R. J. Probyn-Williams. Elementary Clinical Medicine: Dr. Lewis Smith, and Dr. Grünbaum. Medical Tutor: Dr. Wall. Elemental Clinical Surgery: Mr. H. M. Rigby and Mr. J. Sherren. Surgical Tutor: Mr. Sherren. Obstetric Tutor: Dr. R. D. Maxwell. As Emeritus Professor of Surgery Mr. Hutchinson will give in the Summer Session, and Sir Frederick Treves, Bart., will give in the Winter Session a course of lectures in Clinical Surgery. The special subjects and the dates will be announced in due course. Dr. Hewitt, as Emeritus Lecturer on Anæsthetics, will give a course of lectures during the first half of the Winter Session. Warden: Mr. Munro Scott.

ST. MARY'S HOSPITAL.—The hospital contains 281 beds exclusive of the New Wing which, when opened, will increase the number to 341. The number of in-patients treated during 1906 was 4298. The number of out-patients was 24,456 with 23,063 casualty cases, a total of 47,519. The situation of the hospital and Medical School in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it exceptionally convenient for students' rooms, a register of which is kept by the authorities for the use of students.

*Laboratories, &c.*—The Medical School provides for the entire curriculum. Special laboratories are in use for Biology, Chemistry, and Physics, a series of lecture theatres and laboratories for anatomy and physiology, and a spacious and well-lighted dissecting-room. The Pathological Department is under the direction of Sir Almroth Wright, F.R.S., and during the present year a block of consulting-rooms and laboratories in the New Wing of the Hospital has been equipped for the department of Therapeutic Inoculation to meet the increased amount of work in that department. A special laboratory is provided for the study of chemical pathology.

*Appointments.*—All clinical appointments in the hospital are free to students of the Medical School and the resident medical officers are chosen by competitive examination. Six house physicians, six house surgeons, and four obstetric officers are appointed in each year and receive board and lodging in the hospital. Two resident anæsthetists are appointed in each year and receive a salary at the rate of £100 per annum, with board and lodging. Two casualty house surgeons are appointed in each year upon the same conditions. Several assistants in the department of Therapeutic Inoculation are appointed annually at salaries of £100 per annum and upwards. In addition to the above, the senior appointments, medical and surgical registrar, casualty physician, demonstrator of anatomy, physiology, and biology are made annually.

*Clubs, &c.*—The amalgamated clubs include all the various athletic clubs, as well as the rifle club, medical society, &c. There is a students' club on the Hospital premises, the membership of which is included in the amalgamated clubs. The athletic clubs' ground (eight acres) is situated at North Kensington and can be reached in 20 minutes from the Medical School. It consists of Rugby and Association football grounds, tennis courts, and a large cricket pitch.

*Special Tuition.*—In addition to systematic courses of lectures and demonstrations special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S.

*Preliminary Scientific Course.*—Special classes, including lectures and laboratory work, are held throughout the year under recognised teachers of the University of London.

The composition fee for full students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum or by payment of two annual instalments of 35 guineas (£36 15*s.*) and 30 guineas (£31 10*s.*) respectively. University students who have not completed their examination in Anatomy and Physiology pay an annual fee of 25 guineas (£26 5*s.*) until they have passed these examinations, and then pay the composition fee. Separate courses of lectures, laboratory work, or hospital practice may be taken. The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

*Staff.*—Consulting Physicians: Dr. Cheadle and Dr. Lees. Consulting Surgeons: Mr. A. T. Norton, Mr. Edmund Owen, Mr. Herbert Page, Mr. G. P. Field (Aural), Sir G. Anderson Critchett (Ophthalmic), Mr. Malcolm Morris (Skin), and Mr. Morton Smale (Dental). Physicians: Dr. Sidney Phillips, Dr. A. P. Luff, and Dr. H. A. Caley. Surgeons: Mr. A. J. Pepper, Mr. J. Ernest Lane, and Mr. H. Stansfield Collier. Physicians in charge of Out-Patients: Dr. Wilfred Harris, Sir John Broadbent, and Dr. W. H. Willcox. Surgeons in Charge of Out-Patients: Mr. V. Warren Low, Mr. W. H. Clayton-Greene, and Mr. Maynard Smith. Physician-Accoucheur: Dr. Montagu Handfield-Jones. Physician-Acoucheur in charge of Out-Patients: Dr. W. J. Gow. Physician in charge of Children's Department: Dr. Sidney Phillips. Ophthalmic Surgeon: Mr. H. E. Juler. Assistant Ophthalmic Surgeon: Mr. Leslie Paton. Physician to the

Skin Department: Dr. Graham Little. Dental Surgeon: Mr. W. H. Dolamore. Aural Surgeon: Dr. G. William Hill. Surgeon to the Throat Department: Dr. Scanes Spicer. Administrators of Anæsthetics: Mr. Henry Davis, Mr. Blumfeld, and Mr. Collum. Director in Medical Charge of Inoculation Department: Sir A. E. Wright. Dean: Mr. W. H. Clayton-Greene.

*Lecturers.*—Clinical Surgery: Mr. A. J. Pepper. Medicine: Dr. Sidney Phillips. Surgery: Mr. J. Ernest Lane and Mr. H. Stansfield Collier. Practical and Operative Surgery: Mr. V. W. Low and Mr. Maynard Smith. Pathology: Sir A. E. Wright and Dr. Spilsbury (assistant lecturer). Bacteriology: Sir A. E. Wright and Captain S. R. Douglas (assistant lecturer). Pathological Chemistry: Dr. W. H. Willcox. Midwifery and Gynæcology: Dr. M. Handfield-Jones. Materia Medica and Therapeutics: Dr. H. A. Caley. Forensic Medicine: Dr. A. P. Luff and Dr. Willcox. Descriptive and Surgical Anatomy: Mr. W. H. Clayton-Greene. Demonstrators: Mr. Maynard Smith and Mr. Fitzmaurice Kelly. Physiology and Histology: Dr. N. H. Alcock and Dr. B. J. Collingwood (assistant lecturer). Biology: Dr. W. G. Ridewood. Demonstrator: Mr. H. B. Fantham. Chemistry: Dr. G. Senter. Physics: Mr. W. H. White. Hygiene and Public Health: Dr. W. H. Willcox. Mental Diseases: Dr. Theo. B. Hyslop. Diseases of the Eye: Mr. Leslie Paton. Diseases of the Ear: Dr. G. William Hill. Diseases of the Skin: Dr. Graham Little. Diseases of the Throat: Dr. Scanes Spicer. Dental Surgery: Mr. Dolamore. Medical Tutor: Dr. W. J. Harris. Surgical Tutors: Mr. V. Warren Low, Mr. Clayton-Greene, and Mr. Maynard Smith. Obstetric Tutor: Dr. T. G. Stevens. Medical Registrar: Dr. F. S. Langmead. Surgical Registrar: Mr. C. I. Graham. Electrical Department: Dr. W. J. Harris. Practical Pharmacy: Mr. E. A. Andrews (demonstrator). School Secretary: Mr. B. E. Matthews.

---

MIDDLESEX HOSPITAL.—The hospital contains 345 beds, which includes a special wing for patients suffering from cancer, consisting of four wards, containing 45 beds; here cancer patients are received and attended for a period limited only by the duration of their disease. The number of patients treated last year were: Out-patients, 47,880; in-patients, 3859. Cancer: Out-patients, 87; in-patients, 159.

The Hospital and Medical School are fully equipped for the theoretical and practical teaching of all the subjects included in the examinations in Medicine and Surgery in the United Kingdom and for the diploma in Public Health; and ample laboratory and class-room accommodation is provided for the teaching of the various subjects of the curriculum and for original research in Medicine, Pathology, or Bacteriology.

Special Classes are held to prepare students for the Inter. M.B. (Lond.) Examination and for the Primary and Final Examinations for the diploma of F.R.C.S. Eng.

Attached to the Cancer Wing of the hospital is a special research laboratory and in connexion with this there are the Emden Cancer Research Scholarship and the Richard Hollins Research Scholarship.

The Bacteriological and Public Health Laboratory for Women Medical Practitioners and Women Students, situated at 27, Mortimer-street, W., is in connexion with this hospital, and is under the direction of Mr. A. G. R. Foulerton, assisted by Dr. Hilda K. Whittingham. This laboratory, for the maintenance of which a private guarantee fund has been raised by some supporters of the hospital who are anxious to provide facilities for the special training of women in Public Health work, has been added to the Middlesex Hospital Medical School for the purposes of providing instruction for women medical practitioners for the examinations for the Diploma in Public Health and for the M.D. in State Medicine of the University of London, and of affording facilities to them and other women students for carrying out research work in Public Health, Bacteriology, and General Pathology.

*Hospital Appointments.*—All hospital appointments are allotted to students without any extra fee. The following 18 resident appointments—six house physicians, six house surgeons, two obstetric house physicians, two casualty medical officers, and two casualty surgical officers, are annually filled from the pupils of the hospital, each appointment extending over six months.

*A Residential College* to accommodate a limited number of students adjoins the hospital. Breakfast, luncheon, and dinner are supplied in the College Hall at moderate charges.

The Amalgamated Students' Club includes the following: the Medical Society, the Common Room Society, the cricket club, the football clubs, the athletic clubs, the rowing club, the musical society, the chess club, the lawn tennis club, and the hockey club. The athletic ground, which is eight acres in extent, is situated within easy access at Wormwood Scrubs.

*Fees.*—The Composition Fee for the entire curriculum is 135 guineas, or 145 guineas if paid in three instalments. The fee for London University students is 145 guineas; for those who have passed the Preliminary Scientific 120 guineas. The fee for the Dental Curriculum is 54 guineas, or 60 guineas if paid in two instalments. Students who have completed the study of Anatomy and Physiology or passed the London Preliminary Scientific M.B. Examination are received on special terms.

*Lecturers.*—Winter Session: Anatomy: Dr. Wright. Demonstrator: Dr. Gladstone. Biology and Physiology: Mr. Goodall. Demonstrator: Mr. Earle. Chemistry: Dr. Kellas. Medicine: Dr. Pasteur and Dr. Wynter. Practical Medicine: Dr. Voelcker. Emeritus Lecturer in Surgery: Mr. Henry Morris. Surgery: Mr. Clark, Mr. Pearce Gould, and Mr. Bland-Sutton. Practical Surgery: Mr. Murray. Operative Surgery: Mr. Murray. Practical Midwifery: Dr. Bonney. Pathology: Dr. Voelcker. Forensic Medicine and Toxicology: Dr. Wethered. Clinical Lectures in Medicine: The Physicians. Clinical Lectures in Surgery: The Surgeons. Clinical Lectures on Diseases of the Ear, Throat, and Nose: Mr. S. Paget. Lectures in Ophthalmology: Mr. Lang. Lectures in Dental Surgery: Mr. Hern. Public Health and Bacteriology: Mr. Foulerton. Summer Session: Pharmacology and Therapeutics: Dr. R. A. Young. Midwifery: Dr. Comyns Berkeley. Pathological Histology: Dr. Voelcker. Practical Toxicology: Dr. Kellas. Mental Diseases: Dr. Mickle. Lectures in Dermatology: Dr. Pringle. Anatomy, Chemistry, and Physiology: as in Winter Session. Tutors—Medicine: Dr. Campbell Thomson; Surgery: Mr. Kellock; Obstetrics: Dr. Victor Bonney.

*Staff.*—Consulting Physicians: Dr. W. Cayley, Dr. Sidney Coupland, and Sir Richard Douglas Powell. Physicians: Dr. J. K. Fowler, Dr. W. Pasteur, and Dr. W. E. Wynter. Obstetric Physician: Dr. W. Duncan. Physicians to Out-patients: Dr. A. F. Voelcker, Dr. F. J. Wethered, and Dr. H. Campbell Thompson. Assistant Physician: Dr. R. A. Young. Consulting Physician to the Skin Department: Dr. R. Liveing. Physician to the Skin Department: Dr. J. J. Pringle. Assistant Obstetric Physician: Dr. Comyns Berkeley. Consulting Surgeons: Mr. Nunn and Mr. Morris. Surgeons: Mr. Clark, Mr. Gould, and Mr. Bland-Sutton. Surgeons to Out-patients: Mr. Murray (Dean of the school) and Mr. Kellock. Assistant Surgeon: Mr. Handley. Ophthalmic Surgeon: Mr. W. Lang. Aural Surgeon: Mr. S. Paget. Dental Surgeon: Mr. W. Hern. Assistant Dental Surgeon: Mr. Nowell. Curator of the Museum and Pathologist: Dr. Lakin. Registrars: Dr. O. K. Williamson, Mr. Hastings, and Dr. Victor Bonney. Resident Medical Officer: Mr. Gordon Taylor. Anæsthetists: Mr. T. G. A. Burns and Mr. H. P. Noble. Assistant Anæsthetist: Mr. H. Charles.

---

ST. THOMAS'S HOSPITAL.—This hospital received its present charter from King Edward VI., but as a monastic institution was in existence prior to the year 1207. The building occupies a unique position by the river, opposite the Houses of Parliament, and contains 600 beds. The in-patients last year numbered 6608, whilst the number of attendances as out-patients, including the casualty and light departments, was 201,924. There are departments for the treatment of women, children, the eye, ear, nose and throat, skin, and teeth. Departments for light treatment, x rays, and physical exercises are also special features. Exceptional facilities are offered in the hospital laboratories for the study of general pathology, clinical pathology, and of treatment by serums and vaccines. Surgical operations take place in the main theatres every day at 1.30. Clinical teaching in the wards, out-patients' and special departments is available every day of the week. Clinical lectures are delivered every Wednesday and Thursday during the sessions. All appointments in the hospital are open to students without extra fee. House physicians, house surgeons, obstetric house physicians, ophthalmic house surgeons, and out-patient officers are appointed every three months and hold office for six months. They are provided with rooms and commons in the hospital free of expense. Clinical assistants to all the special departments are appointed at the same intervals and for the same periods; they are non-resident. A resident assistant physician and a resident assistant surgeon, at a salary of £100 each, are appointed biennially; also four hospital registrars (medical, surgical, obstetric, and ophthalmic), the two former receive a salary of £100 and the two latter £50. An assistant in the clinical laboratory, at a salary of £100 per annum, and an assistant pathologist, at a salary of £125, are from time to time appointed. Appointments open to students before qualification: Clinical clerks and dressers for in- and out-patients are selected from students who have completed their third year's work. The accident dressers are provided with board and lodging during their periods of special duty. Every student acts as clerk in the post-mortem room and in one of the pathological laboratories, takes his turn for three weeks on maternity duty under proper supervision, and is practically instructed in the administration of anæsthetics by one of the hospital anæsthetists. On completion of his term as clerk or dresser he is expected to fill appointments in one or more of the special departments. In their earlier years of study students are selected as assistants to the lecturers in the preliminary and intermediate subjects. The Medical School is fully equipped for the teaching of all subjects of the curriculum. A fine museum and large library are at the disposal of the students. There are three lecture theatres, an unusually large and well-ventilated dissecting-room, and special laboratories for biology, chemistry, physics, physiology, and pathology. The post-mortem room, where demonstrations are given every day, is ventilated by the electric fan and provided with cold storage. The Students' Club comprises a spacious restaurant and magnificent smoking and reading room. There is no occasion for students to leave the hospital buildings during working hours. The athletic ground of the Amalgamated Clubs is over nine acres in extent and is easily accessible from Waterloo Station. The curriculum is arranged to meet the requirements of all the Examining Bodies. Special classes are held for the examinations at the University of London and for the First and Final Fellowship Examinations of the Royal College of Surgeons of England. Tutorial classes in all subjects precede the various examinations. There is a special course for the Diploma in Public Health. The hospital is easily accessible from all parts. It is close to the Waterloo and Westminster Bridge Stations (L. & S.W., Bakerloo, and District Railways). Electric trams which pass the doors connect it with all parts of South London. A register of lodgings and a list of medical men and others who are willing to receive boarders is kept by the secretary, Mr. G. Q. Roberts, who will give any further information required.

*Fees.*—The annual composition fee is 30 guineas—in addition to a fee on entrance. Post-graduate study is afforded to qualified practitioners by a joint ticket which admits to the practice of 14 hospitals (general and special) on terms which may be ascertained from the secretary.

For a list of scholarships and prizes see p. 631.

*Staff.*—Consulting Physicians: Dr. Harley and Dr. Payne. Consulting Surgeon: Mr. S. Jones. Consulting Obstetrical Physicians: Dr. Gervis and Dr. Cullingworth. Consulting Ophthalmic Surgeons: Mr. Liebreich and Mr. Nettleship. Consulting Anæsthetist: Mr. W. Tyrrell. Physicians: Dr. Sharkey, Dr. Acland, Dr. Hawkins, Dr. Mackenzie, and Dr. Turney. Surgeons: Mr. Clutton, Mr. Pitts, Mr. G. H. Makins, C.B., Mr. Battle, Mr. Ballance, and Mr. Robinson. Physicians to Out-patients: Dr. Perkins, Dr. Colman, Dr. Box, and Dr. Russell. Surgeons to Out-patients: Mr. C. S. Wallace, Mr. E. M. Corner, and Mr. Sargent. Obstetrical Physician: Dr. Tate. Obstetrical Physician to Out-patients: Dr. Fairbairn. Ophthalmic Surgeon: Mr. Lawford. Ophthalmic Surgeon to Out-patients: Mr. Fisher. Physician for Diseases of Children: Dr. Box. Surgeon for Diseases of Children: Mr. P. W. G. Sargent. Surgeon for Diseases of the Throat: Mr. H. B. Robinson. Physician for Diseases of the Skin: Dr. E. Stainer. Surgeon for Diseases of the Ear: Mr. Ballance, with Mr. Marriage in charge of Out-patients. Dental Surgeons: Mr. J. G. Turner and Mr. G. L. Bates. Resident Assistant Physician: Dr. Dean. Resident Assistant Surgeon: Mr. J. E. Adams. Anæsthetists: Mr. H. Low, Dr. Bevan, Mr. Mennell, and Dr. Hedley. Pharmaceutist: Mr. J. A. Jennings. Curator of Museum: Mr. S. G. Shattock. Director of Laboratories: Mr. Dudgeon. Superintendent of X Ray Department: Dr. Greg.

*Lecturers and Demonstrators.*—Anatomy: Mr. F. G. Parsons, with Mr. P. W. G. Sargent and Mr. C. A. R. Nitch. Chemistry: Dr. Le Sueur. Physiology: Dr. J. B. Leathes. Biology: Mr. T. G. Hill. Pathology and Bacteriology: Mr. Shattock and Mr. Dudgeon. Surgery: Mr. Makins and Mr. Ballance. Medicine: Dr. Sharkey and Dr. Hawkins. Practical and Operative Surgery: Mr. Battle, Mr. Robinson, and Mr. Wallace. Comparative Anatomy: Mr. Parsons. Applied Anatomy: Dr. Box. Anæsthetics: Mr. Tyrrell and Dr. Low. Physics: Mr. Brinkworth. Clinical Medicine: The Physicians. Clinical Surgery: The Surgeons. Midwifery and Diseases of Women: Dr. Tate and Dr. Fairbairn. Diseases of the Eye: Mr. Lawford. Pharmacology and Therapeutics: Dr. Dixon. Throat Disease: Mr. H. B. Robinson. Physiological Demonstrator: Mr. Mavrogordato. Obstetrical Demonstrators: Dr. Fairbairn and Dr. Hedley. Elementary Clinical Medicine: Dr. Perkins, Dr. Colman, Dr. Box, and Dr. Russell. Surgical Classes: Mr. Wallace, Mr. Corner, Mr. Fisher, and Mr. Shattock. Forensic Medicine and Toxicology: Dr. Colman and Dr. Haas. Mental Diseases: Dr. R. Percy Smith. Public Health: Dr. E. Seaton. Tropical Medicine: Dr. Sandwith. Instruction in Vaccination by Dr. Cope. Dean of the School: Mr. C. S. Wallace. Secretary: Mr. G. Q Roberts, from whom any further information may be obtained.

UNIVERSITY COLLEGE AND HOSPITAL.—The Faculty of Medicine at University College is divided, as it is at King's College, into a Faculty of Medical Sciences and a Medical School proper.

*Faculty of Medical Sciences.—Composition fees.*—For the courses required by the University of London. 1. For the Preliminary Scientific Course, 26 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. 2. For the Intermediate Course, 57 guineas if paid in one sum; 62 guineas if paid in two instalments of 31 guineas each. This fee entitles to attendance on Anatomy and Physiology during three years and to one attendance on Organic Chemistry, Pharmacology, and Materia Medica, and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

For the medical education required by the Examining Board in England and the Society of Apothecaries. First examination, Parts I., II., III., 21 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. First examination, Part IV., and second examination, 57 guineas if paid in one sum, and 62 guineas if paid in two instalments of 31 guineas each. This fee entitles to attendance during three years and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

*Professors and Lecturers.*—1. Preliminary Scientific Course.—Chemistry:—Professor: Sir William Ramsay, K.C.B., F.R.S.; assistant professor: E. C. C. Baly, F.I.C.; assistants: R. W. Gray, Ph.D., N. T. M. Wilsmore, M.Sc., Samuel Smiles, D Sc.; demonstrators: S. E. Brading, T. P. Hilditch, W. G. Ramsay, N. Whitehouse. Physics:—Professor: F. T. Trouton, M.A., Sc.D., F.R.S.; assistant professor: A. W. Porter, B.Sc.; assistants: N. Eumorfopoulos, B.Sc., A. O. Rankine, B.Sc. Botany:—Professor: F. W. Oliver, M.A., D.Sc., F.R.S.; assistant professor: F. E. Fritsch, D.Sc., Ph.D. Zoology:—Professor: J. P. Hill, D.Sc.; assistant professor: G. C. Chubb, D.Sc. 2. Intermediate Course.—Anatomy:—Professor: G. D. Thane, LL.D.; assistant and curator of the museum: G. S. Hett, M.B.; demonstrators: G. E. Waugh, B.S., F.R.C.S., H. T. Mant, M.B., B.S.; assistant demonstrators: C. S. White, M.D., M.R.C.P., R. G. Elwell, M.B., B.C. Physiology:—Professor: E. H. Starling, M.D., B.S., F.R.C.P., F.R.S.; assistant professors: W. M. Bayliss, M.A., D.Sc., F.R.S., G. A. Buckmaster, M.A., M.D., D.P.H.; assistant: R. H. Aders-Plimmer, D.Sc.: lecturers: J. H. Parsons, M.B., D.Sc., F.R.C.S., W. Page May, M.D., D.Sc., F.R.C.P., S. B. Schryver, D.Sc. Pharmacology:—Professor: A. R. Cushny, M.A., M.D., F.R.S. Organic Chemistry:—Professor: J. N. Collie, Ph.D., LL.D., F.R.S.; assistant: Samuel Smiles, D.Sc.

*University College Hospital Medical School.*—Dean: Professor Sidney Martin, M.D., F.R.C.P., F.R.S. Vice-Dean: H. Batty Shaw, M.D., F.R.C.P. Fees for Preliminary and Intermediate Course: See under University College. For the Final M.B., B S. Course, 80 guineas if paid in one sum, 82 guineas if paid in two instalments, as follows—first year, 50 guineas; second year, 32 guineas. This fee entitles to attendance on Lectures and Hospital Practice during three years and to one attendance on Practical Pathology and Practical Surgery. Vaccination and attendance at a Fever Hospital are not included. Students who obtain a medical qualification within three years of the time of commencing this course are not required to pay an additional fee for further attendance. This course of instruction is also suitable for the corresponding examinations at the Universities of Oxford, Cambridge, and Durham, and for the medical education required by the Examining Board in England and the Society of Apothecaries.

There are 279 beds in the hospital and 70,379 patients were treated last year.

*Special Departments, Clinical or Laboratory Facilities.*—Those who are desirous of carrying out original research in Pathology, including Morbid Anatomy, Bacteriology, Experimental Pathology, and Chemical Pathology are admitted to work in the laboratories of the school by the Professor. A special course of instruction is given for preparation for the examinations for Diplomas in Public Health of the various universities and examining bodies; also special courses of Lectures and Demonstrations in Anæsthetics, Diseases of the Eye, Ear, Nose, and Throat, Skin, and Diseases of the Teeth, in Electrical and Radioscopic Diagnosis and Treatment, and in Clinical and Tropical Pathology. These courses are designed for senior students and graduates.

*Appointments tenable by Students.*—Clerkships and dresserships to the physicians, surgeons, anæsthetist, and pathologist are allotted amongst the students of the hospital. Maternity students are appointed each month and reside in the Students' House connected with the Medical School and Hospital. Eight house physicians and house surgeons, four senior and four junior obstetric assistants are selected annually by examination from among the senior students who have a medical qualification. The house physicians and house surgeons reside free in the hospital for six months, and the senior obstetric assistants for three months. In addition to these posts there are certain special appointments which are vacant from time to time and are filled by senior students of the hospital: 1. The Resident Medical Officer. This officer is appointed for a period of two years and is chosen from amongst the more senior recent residents of the hospital. 2. The Surgical Registrar is also chosen from among the more senior recent residents of the hospital. 3. A Casualty Medical Officer and a Casualty Surgical Officer are appointed, each for a period of six months. 4. Deputy Anæsthetists. During the absence of one or another of the Anæsthetists in the summer months a senior qualified student is appointed as a substitute and is granted a special certificate.

*School Buildings and Equipment.*—The new buildings for University College Hospital, completed by the generosity of the late Sir Blundell Maple, Bart., were opened by H.R.H. the Duke of Connaught on Tuesday, Nov. 6th, 1906. The new buildings for the Medical School, erected through the generosity of Sir Donald Currie, are ready and contain accommodation for undergraduate and post-graduate students in all departments of medical study subsequent to the intermediate course.

*Museum of Pathological Anatomy.*—The Museum, a spacious and well-lighted room, is open for study from 8 A.M. to 5 P.M. The collection is divided into three sections—medical, surgical, obstetrical, and gynæcological. The surgical section is a particularly comptete one and contains examples of every variety of surgical disease and injury. Diseases of the skin are well illustrated by a number of wax models which are conveniently displayed in glass cases. The obstetrical and gynæcological section is very complete. Microscopic sections of most of the specimens in the Museum have been prepared and are available for the use of students on application to the Curator. The Museum contains 1100 admirable paintings by Sir Robert Carswell and Sir Charles Bell and a collection of old surgical instruments formerly belonging to Robert Liston. It is also furnished with a small theatre, where separate demonstrations in each subject are given several times a week by members of the teaching staff.

The Anatomical Museum of the University of London, University College, is open to all students of University College Hospital and Medical School on the recommendation of the School Committee.

The Medical Library is open daily for the purposes of study to every student of the Medical School from 9 A.M. to 5 P.M., Saturdays 9 A.M. to 1 P.M. It contains about 10,000 works on medical subjects, including all the current text-books and works of reference required for study or research.

The Medical Society of University College exists for the dual purpose (1) of promoting the study of Medical and Surgical Science, and (2) of promoting social intercourse among its members. All Students of the Medical School are eligible for membership. Meetings are held once a fortnight for the purpose of discussing subjects connected with the study of medicine and the allied sciences and for the exhibition of cases of pathological interest. One room in the Medical School is specially reserved as a Reading Room and is provided with current medical works and periodicals. The society also possesses an osteological and a pathological collection for the use of its members. In its social aspect the society includes various athletic clubs and has the management of three rooms on the ground floor of the Medical School, which are supplied with newspapers, magazines, writing materials, chess- and draught-boards, &c., solely for the use of its members. The society also superintends the commodious gymnasium of the Medical School. The Athletic Ground, which is used in conjunction with the Union Society of the University of London University College, is situated near the Great Western Railway station at Perivale and is within easy reach of the Hospital and School, about 25 minutes by train from Gower-street station. The following clubs are connected with the society: Cricket Club, Rugby Football Club, Association Football Club, Hockey Club, and Lawn-Tennis Club. The society also has the use of the College racquets and fives courts for its members. The affairs of the society are conducted by a committee elected annually by the members.

*Residence of Students.*—A register of boarding residences is kept in the office of the Medical School for the convenience of Students; these residences are not under the control of the school authorities. The Students' House in University-street contains large and comfortable rooms. The Maternity Students occupy them on payment of a moderate charge.

*Private Instruction.*—Gentlemen who desire assistance in their studies should consult the Dean, Professors, or Lecturers.

*Hospital Staff.*—Consulting Physicians: Sir W. R. Gowers, Dr. H. C. Bastian, Sir J. Williams, Bart., Dr. S. Ringer, and Dr. F. T. Roberts. Physicians: Sir Thomas Barlow, Bart., Dr. J. Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, and Dr. H. Batty Shaw. Assistant Physicians: Dr. F. J. Poynton and Dr. C. Bolton. Obstetric Physicians: Dr. H. R. Spencer and Dr. G. F. Blacker. Physician to Skin Department: Dr. H. Radcliffe Crocker. Consulting Surgeons: Sir John Tweedy (Ophthalmic) and Sir Victor Horsley. Surgeons: Mr. A. E. Barker, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. Raymond Johnson. Assistant Surgeons: Mr. Rupert Bucknall and Mr. Wilfred Trotter. Ophthalmic Surgeon: Mr. Percy Flemming. Assistant Ophthalmic Surgeon: Mr. J. H. Parsons. Professor and Lecturer on Public Health: Dr. Henry R. Kenwood. Dental Surgeon: Mr. Sidney Spokes. Assistant Dental Surgeon: Mr. H. J. Relph. Anæsthetist: Dr. Dudley Buxton. Assistant Anæsthetists: Dr. H. J. Scharlieb and Mr. A. Beresford Kingsford. Surgical Registrar: Mr. O. L. Addison. Resident Medical Officer: Dr. A. M. H. Gray. Pathologist: Dr. F. H. Thiele. Electro-therapeutist: Mr. E. S. Worrall. Radiographer: Mr. R. H. Cooper. Pharmacist: Mr. R. R. Bennett.

*Teaching Staff.*—Medicine—The Principles and Practice of Medicine: Dr. J. Rose Bradford. Clinical Medicine: Sir Thomas Barlow, Dr. J. Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, Dr. F. J. Poynton, and Dr. C. Bolton. Therapeutics: Dr. H. Batty Shaw. Surgery—The Principles and Practice of Surgery: Mr. Arthur E. J. Barker. Clinical Surgery: Mr. Arthur E. J. Barker, Mr. Rickman J. Godlee, Mr. Bilton Pollard, Mr. Raymond Johnson, Mr. Rupert Bucknall, and Mr. Wilfred Trotter. Practical Surgery: Mr. Raymond Johnson and Mr. Wilfred Trotter. Surgical Anatomy: Mr. Wilfred Trotter. Midwifery and Gynæcology—Dr. H. R. Spencer. Clinical Midwifery and Gynæcology: Dr. H. R. Spencer and Dr.

G. F. Blacker. Diseases of Childhood: Dr. H. Batty Shaw, Mr. Raymond Johnson, Mr. Percy Flemming, and Mr. Herbert Tilley. Pathology and Morbid Anatomy—General Pathology: Dr. Sidney Martin. Practical Pathology: Dr. D. N. Nabarro, Assistant Professor; and Dr. A. C. Stevenson, Assistant Bacteriologist. Laboratory and Special Instruction: Dr. Sidney Martin. Chemical Pathology and Clinical Pathology and Post-mortem Examination: Dr. F. H. Thiele. Museum of Pathological Anatomy: Mr. T. W. P. Lawrence, Curator. Forensic Medicine: Dr. J. S. Risien Russell. Diseases of the Eye—Ophthalmic Medicine and Surgery: Mr. Percy Flemming. Clinical Ophthalmology: Mr. Percy Flemming and Mr. J. Herbert Parsons. Diseases of the Ear and Throat: Mr. Herbert Tilley. Diseases of the Skin: Dr. H. Radcliffe Crocker. Mental Physiology and Mental Diseases: Dr. W. Julius Mickle. Dental Surgery: Mr. Sidney Spokes and Mr. H. J. Relph. Instruction in the Use of Anæsthetics: Dr. Dudley W. Buxton. Electro-therapeutic Department: Mr. E. S. Worrall. Radiographic Department: Mr. R. Higham Cooper. Practical Pharmacy: Mr. R. R. Bennett.

---

WESTMINSTER HOSPITAL.—The hospital contains 215 beds and affords relief to upwards of 2000 in-patients and 30,000 out-patients annually. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædics, and for Diseases of Women, and a special ward for children. The Anatomical, Pathological, and Materia Medica Museums are open to all students of the school.

A medical and a surgical registrar, each with a salary of £50, are appointed annually. Two house physicians, three house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are provided with rooms and commons; also one assistant house physician and one assistant house surgeon with commons only. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students of the hospital.

By a scheme for the concentration of the teaching of the preliminary and intermediate subjects of the curriculum, which has the support of the London University, an arrangement has been made by the Westminster school for the teaching of these subjects at King's College. Students, however, join the Westminster Medical School as formerly and the Entrance Scholarships remain as heretofore.

There is laboratory accommodation for practical work in Chemistry, Physics, Biology, Anatomy, Physiology, Histology, Pathology, and Bacteriology, and a new Clinical Laboratory has recently been erected. Facilities for research are afforded in all the laboratories.

For out-door recreation the following clubs exist: the Athletic Sports Club, the Cricket, Lawn Tennis, and Swimming Clubs, and the Rugby and Association Football Clubs. For in-door recreation there are the Students' Club and the Guthrie Society, the latter being a debating club. These clubs and societies together constitute the Clubs Union, for membership of which students are not required to pay, the expense being covered by the entrance fee to the school.

*Staff.*—Consulting Medical Staff: Dr. H. B. Donkin and Dr. W. H. Allchin. Consulting Surgical Staff: Mr. Richard Davy, Mr. G. Cowell, and Mr. N. C. Macnamara. Consulting Dental Surgeon: Dr. J. Walker. Medical In-patient Staff: Dr. de Havilland Hall, Dr. W. Murrell, and Dr. R. G. Hebb. Obstetric Physician: Dr. W. Rivers Pollock. Surgical In-patient Staff: Mr. C. Stonham, Mr. W. G. Spencer, and Mr. A. H. Tubby. Medical Out-patient Staff: Dr. A. M. Gossage, Dr. Purves Stewart, Dr. Bertram Abrahams, and Dr. Eric Macnamara. Physician for Diseases of the Skin: Dr. T. Colcott Fox. Assistant Obstetric Physician: Dr. G. H. Drummond Robinson. Surgical Out-patient Staff: Mr. W. Turner, Mr. E. P. Paton, Mr. Arthur Evans, and Mr. Rock Carling. Surgeon in Charge of the Throat Department: Mr. P. R. W. De Santi. Ophthalmic Surgeon: Mr. G. Hartridge. Surgeon in charge of the Orthopædic Department: Mr. A. H. Tubby. Surgeon in charge of the Ear Department: Mr. P. R. W. De Santi. Dental Surgeons: Mr. C. W. Glassington and Mr. E. Gardner. Administrators of Anæsthetics: Dr. N. W. Bourns and Dr. V. B. Orr. Assistant Anæsthetist: Dr. Cecil Hughes. Physician Pathologist: Dr. R. G. Hebb. Assistant Pathologist and Curator of Museum: Dr. J. M. Bernstein. Medical Registrar: Dr. Price. Surgical Registrar: Mr. J. M. G. Swainson. Pharmacist: Mr. A. E. Tanner. Secretary: Mr. S. M. Quennell.

*Lecturers.*—Clinical Medicine: Dr. Hall, Dr. Murrell, and Dr. Hebb. Clinical Surgery: Mr. Stonham, Mr. Spencer, and Mr. Tubby. Clinical Gynæcology: Dr. Pollock (treasurer of the school). Medicine: Dr. Allchin, Dr. Murrell, Dr. Hebb, Dr. Gossage, Dr. Purves Stewart, Dr. Abrahams, Dr. Macnamara, and Dr. Duncan. Diseases of the Skin: Dr. Colcott Fox. Insanity: Dr. Robert Jones. Surgery: Mr. Spencer. Ophthalmic Surgery: Mr. Hartridge. Surgery of the Throat and Nose: Mr. De Santi. Orthopædic Surgery: Mr. Tubby. Aural Surgery: Mr. De Santi. Dental Surgery: Mr. Glassington. Anæsthetics: Dr. Bourns. Operative Surgery: Mr. Stonham. Surgical Anatomy: Mr. Arthur Evans. Practical Surgery: Mr. Turner and Mr. Rock Carling. Surgical Pathology: Mr. Paton (Dean of the school). Midwifery and Diseases of Women: Dr. Pollock. General Pathology and Morbid Anatomy: Dr. Hebb. Post-mortem Demonstrations: Dr. Hebb. Materia Medica, Therapeutics, and Pharmacology: Dr. Dixon. Demonstrator of Practical Pharmacy: Mr. A. E. Tanner. Forensic Medicine: Mr. Henslowe Wellington. Toxicology: Dr. H. Wilson Hake. Public Health: Dr. S. Monckton Copeman. Bacteriology: Dr. Bernstein. Anatomy: Dr. Thompson and Mr. Jenkins. Demonstrator of Practical Anatomy: Mr. Jenkins. Physiology: Dr. Halliburton. Practical Physiology and Histology: Dr. Halliburton, Dr. Lyle, Dr. Myers, and Dr. Rosenheim. Biology: Dr. Bottomley and Mr. Schwartz. Chemistry and Practical Chemistry: Dr. Thomson, Mr. Jackson, and Mr. Kirkaldy. Physics: Dr. Harold A. Wilson, Mr. Allen, Mr. Nicol, and Dr. W. Wilson. Secretary and Librarian: Mr. W. Fryer.

---

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—The fee for the medical course for the University of London, after the completion of the Preliminary Scientific year, is £135 in one sum, or £145 in four instalments. The fee for the Preliminary Science classes is £25. The fee for the course for the University of Durham, the Society of Apothecaries, and the Conjoint Colleges of Scotland, including Elementary Science, is £140 in one sum, or £150 in four instalments.

The hospital contains 165 beds, of which 78 are reserved for surgical, 64 for medical, 13 for gynæcological, six for ophthalmic, and four for isolation cases. The number of in-patients treated during the past year was 2474. There is also a department for attending women in their confinements at their own homes. Students can also attend the in-patient and out-patient practice of the New Hospital for Women.

Special classes for the Preliminary Scientific examination of the University of London are held and special courses of instruction in Anatomy, Physiology, and Practical Pharmacology are provided for students preparing for the Intermediate M.B. Examination of the University of London.

In addition to the list of Scholarships tabulated in another column three Evans Prizes of £3 3*s.*, £2 2*s.*, and £1 1*s.* are given in alternate years on the results of the class examination in midwifery, and two Durham Prizes, value £5 and £3, are given in alternate years on the results of the class examination in gynæcology, and a prize of £5 is awarded in alternate years on the results of the class examination in Midwifery and Gynæcology respectively. The Evans Prize for Operative Midwifery, value £5 5*s.*, is awarded yearly. Prizes of £10 each are awarded yearly in Anatomy and Physiology. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help. Honoraria from the Mary Royce Memorial Fund are given to the assistant anæsthetists at the Royal Free Hospital. Prizes and Certificates of Honour are awarded in each class at the end of the session.

Students after qualification can hold at the Royal Free Hospital the posts of house physician, house surgeon, clinical assistants, anæsthetist and assistant anæsthetists, medical and surgical registrars, medical electrician, and museum curator; and at the Medical School the posts of demonstrators in the departments of Anatomy, Physiology, Chemistry, and museum curator. They can also hold posts at the New Hospital for Women, which is officered entirely by medical women.

The School buildings have been entirely rebuilt in recent years and there are spacious, well-equipped laboratories, which afford every facility for efficiency of teaching and practical work in all departments.

There are residential chambers at 8, Hunter-street, with accommodation for 17 students, and the Secretary can be consulted on the subject of other residences for students. There is a Tennis Club with a gravel court at the School, and also hockey, boating, and other clubs.

*Staff.*—Consulting Physicians: Dr. S. West and Dr. T. Crawfurd Hayes. Physicians: Dr. Harrington Sainsbury, Dr. J. W. Carr, and Dr. R. H. P. Crawfurd. Assistant Physicians: Dr. A. G. Phear and Dr. Farquhar Buzzard. Consulting Surgeons: Mr. W. Rose and Mr. A. B. Barrow. Surgeons: Mr. J. Berry, Mr. E. W. Roughton, and Mr. W. H. Evans. Assistant Surgeons: Mr. T. Percy Legg and Mr. Cunning. Physician for Diseases of Women: Mrs. Scharlieb, M.S., M.D. Assistant Physician for the Diseases of Women: Miss Vaughan, M.D. Ophthalmic Surgeon: Mr. H. Work Dodd. Surgeon for Diseases of Throat, Nose, and Ear: Mr. E. W. Roughton. Surgeon for Diseases of Skin: Mr. W. H. Evans. Senior Resident Medical Officer: Mr. Atkey. Registrars: Miss Roberts, M.D., B.S., and Miss Turnbull, M.D., B.S. Dentist: Mr. T. C. Budden. Anæsthetists: Mrs. Berry, M.D., B.S., and Mrs. Willey, M.S., M.D. Secretary: Mr. C. W. Thies.

*Lecturers.*—At the School: Anatomy and Practical Anatomy: Mr. Parsons. Physiology and Practical Physiology: Dr. Brodie and Miss Cullis. Chemistry: Miss C. de B. Evans, D.Sc. Practical Chemistry: Miss Widdows, B.Sc. Physics: Miss E. Stoney. Biology: Mr. Mudge. Materia Medica: Dr. R. H. P. Crawfurd. Practice of Medicine: Miss Cock, M.D., and Dr. J. W. Carr. Midwifery: Mrs. Scharlieb, M.S. Gynæcology: Mrs. Stanley Boyd. Forensic Medicine: Dr. Hawthorne. Toxicology: Dr. Wilson Hake. Practice of Surgery: Mr. Berry and Mr. Roughton. Operative Surgery: Mr. Roughton. Ophthalmic Surgery: Miss Ellaby. Pathology: Dr. F. W. Andrewes. Mental Pathology: Dr. Hyslop. Tropical Diseases: Sir Patrick Manson. Operative Midwifery: Miss McCall, M.D., and Miss Vaughan, M.D. Demonstrator of Practical Gynæcology, Miss Vaughan, M.D.; of Anatomy, Miss Hamilton, M.D., and Miss Bolton, M.B., B.S.; of Chemistry, Miss Laycock, B.Sc.; of Practical Pharmacology, Mrs. Clarke Keer. At the Royal Free Hospital: Clinical Medicine: Dr. Sainsbury and Dr. Carr. Clinical Surgery: Mr. Berry and Mr. Roughton. Clinical Obstetrics: Mrs. Scharlieb, M.S. Pathology: Dr. Phear. Bacteriology: Mr. Roughton. Surgical Tutors: Mr. W. Evans, Mr. Legg, and Mr. Cunning. Medical Tutor: Dr. Crawfurd. Demonstrator of Auscultation: Dr. Phear. Demonstrator of Practical Clinical Pathology: Miss Chambers, M.B., B.S. Practical Pathology: Miss Woodward, M.B., B.S.

Dean of the School, Miss Cock, M.D.; Honorary Secretary, Mrs. Thorne; Secretary, Miss Douie, M.B.

## METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

The institutions which follow provide to the medical student and medical graduate facilities for different forms of instruction and clinical observation. In each case further information can be obtained from the secretary of the hospital.

The Seamen's Hospital Society possesses two hospitals —the *Dreadnought* Hospital at Greenwich, 250 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock-road and the other at Gravesend—from which the patients are transferred to the hospitals. The London School of Tropical Medicine and the London School of Clinical Medicine are both under the auspices of the Seamen's Hospital Society. The medical staff administering the hospitals of the Seamen's Hospital Society is as follows:—Physicians: Sir Dyce Duckworth, Dr. F. Taylor, Dr. J. Rose Bradford, Sir Patrick Manson, K.C.M.G., Professor R. Tanner Hewlett, Dr. Guthrie Rankin, and Dr. Andrew Duncan. Surgeons: Sir William Bennett, K.C.V.O., Mr. A. Carless, Mr. W. Turner, Mr. J. Cantlie, Mr. L. H. McGavin, and Mr. A. Evans. Ophthalmic Surgeon: Mr. L. V. Cargill. Physician for Diseases of the Skin: Mr. Malcolm Morris. Physician for Diseases of the Throat, Nose, and Ear: Dr. StClair Thomson. Dental Surgeon: Mr. K. W. Goadby. Assistant Physicians: Dr. S. R. Wells, Dr. A. E. Jones, Dr. F. M. Sandwith, Dr. C. W. Daniels, and Dr. R. E. Bickerton. Assistant Surgeons: Mr. L. A. Jones, Mr. E. Rock Carling, and Dr. C. C. Choyce. Assistant Physician for Diseases of the Skin: Dr. W. Fox. Assistant Surgeon for Diseases of the Throat, Nose, and Ear: Mr. A. Lawrence. Anæsthetists: Dr. M. Horne, Dr. C. Hughes, Dr. V. B. Orr, Mr. T. G. Scott, and Dr. R. E. Delbruck. Medical Superintendent of *Dreadnought* Hospital: Dr. C. C. Choyce. Medical Officer East India Dock-road Dispensary: W. H. F. Oxley. Surgeon Gravesend Dispensary: C. E. Robbs. Secretary: P. J. Michelli.

West London Hospital, Hammersmith-road, W.—This hospital has 160 beds, all of which are at present in use. About 2600 in-patients and 37,000 out-patients, whose attendances number 100,000, are treated annually. Attached to the hospital is the West London Post-Graduate College. The practice of the hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms daily and demonstrations are given in the wards on certain fixed days. Post-graduate lectures and demonstrations are given daily except Saturdays; notice of the commencement of each course is advertised in the medical journals. Special Classes are held in Diseases of the Throat and Nose, Skin, and Eye, and in Gynæcology, Medical Electricity, Operative Surgery, Bacteriology, Anæsthetics, Intestinal Surgery, Surface Anatomy, Blood and Urine, Clinical Microscopy, Tropical Medicine, Cystoscopy, Venereal Diseases, and Operative Ophthalmology. The accommodation for post-graduates consists of a large lecture room, together with reading and writing rooms, &c. The hospital has a fully equipped pathological laboratory at which instruction is given in elementary bacteriology, a class being held every month. The fees for hospital practice, including lectures, are £5 5*s.* for three months or £12 12*s.* for one year. The certificate of the hospital is accepted by the Admiralty, War Office, and India Office in cases of study leave. Further information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital. Physicians: Dr. D. W. C. Hood, C.V.O., Dr. Seymour Taylor, and Dr. A. P. Beddard. Physician for Diseases of Women: Dr. J. A. Mansell-Moullin. Surgeons: Mr. C. B. Keetley, Mr. F. Swinford Edwards, Mr. S. Paget, and Mr. L. A. Bidwell. Surgeon for Diseases of the Eye: Mr. H. P. Dunn. Assistant Surgeon for Diseases of the Eye: Dr. Kenneth Scott. Assistant Physicians: Dr. E. A. Saunders, Dr. H. Davis, and Dr. A. E. Russell. Assistant Physician for Diseases of Women: Dr. G. H. Drummond Robinson. Assistant Surgeons: Mr. A. Baldwin, Mr. Donald Armour, and Mr. John Pardoe. Surgeon-Dentist: Mr. H. Lloyd Williams. Physician in charge of Throat and Nose and Aural Department: Dr. J. B. Ball. Assistant Physician Aural Department: Dr. H. J. Davis. Physician in charge of Children's Department: Dr. E. A. Saunders. Surgeon in charge of Orthopædic Department: Mr. C. B. Keetley. Pathologist: Dr. G. C. Low. Dermatologist: Dr. P. S. Abraham. Officer in charge of the X Ray Department: Dr. D. Arthur. Administrators of Anæsthetics: Messrs. T. Gunton Alderton, Rickard W. Lloyd, E. W. Lewis, and G. P. Shuter. Assistant Anæsthetists: Messrs. Austin Cooper, E. F. Travers, and Dr. H. M. Page. Electrician: Mr. E. D. MacDougal. Secretary of the Hospital: Mr. R. J. Gilbert; of the Post-Graduate College: Mr. H. Grant Rawle.

Great Northern Central Hospital, Holloway-road, N. —This hospital is recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. Besides the Honorary Staff there are two resident House Physicians, three resident House Surgeons, five Anæsthetists, Registrar, Pathologist, and Casualty Officer. The hospital contains 162 beds which are now fully occupied. The large rectangular and circular wards, each of which contains 24 beds, the observation wards, the two operation theatres, general and special out-patient and pathological departments, are specially designed with a view of offering the greatest facilities for clinical work. An electrical department is being arranged. Medical practitioners are cordially invited to see the general and special practice of the hospital. Demonstrations are given daily in the wards and out-patient departments and during the coming winter session there will be a weekly clinical lecture. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from Dr. T. J. Horder, 141, Harley-street, W. Consulting Physicians: Sir S. Wilks, Bart., and Dr. R. Burnet. Physicians: Dr. E. C. Beale, Dr. C. E. Beevor, Dr. A. Morison, Dr. T. J. Horder, Dr. Symes Thompson, and Dr. Willcox. Obstetric Physicians: Dr. G. F. Blacker and Dr. Cuthbert Lockyer. Physician for Skin: Dr. A. Whitfield. Surgeons: Mr. P. T. B. Beale, Mr. G. B. M. White, Mr. E. C. Stabb, Mr. V. W. Low, and Mr. Arthur Edmunds. Ophthalmic Surgeons: Mr. A. S. Morton and Mr. Gay French. Throat and Ear Surgeon: Mr. E. B. Waggett. Dental Surgeon: Mr. C. Peyton Baly.

**Prince of Wales's General Hospital**, Tottenham, N.—This general hospital is in the midst of a densely-populated neighbourhood of about half a million inhabitants. It contains medical, surgical, gynæcological, and children's wards, having in all 125 beds. There are special departments for gynæcological cases, diseases of the eye, ear, throat, and nose, skin diseases, medical electricity and radiography, and dentistry. Operations are performed every afternoon of the week (except Saturday) at 2.30 P.M. Clinical instruction is given daily in the wards and out-patient departments in connexion with the North-East London Post-graduate College attached. There are four Resident Medical Officers, and Clinical Assistants are appointed under certain conditions. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, Secretary to the Medical Committee, 26, Welbeck-street, W.; or from Dr. A. J. Whiting, Dean of the North-East London Post-Graduate College, 142, Harley-street, W. Consulting Physicians: Sir James Reid, Bart., and Dr. Percy Kidd. Consulting Surgeons: Mr. J. Langton, Mr. G. Lichtenberg, and Mr. Hooper May. Physicians: Dr. R. Murray Leslie, Dr. G. P. Chappel, and Dr. A. J. Whiting. Assistant Physicians: Dr. A. G. Auld and Dr. T. R. Whipham. Surgeons: Mr. Walter Edmunds and Mr. H. W. Carson. Assistant Surgeon: Mr. J. Howell Evans. Gynæcologist: Dr. A. E. Giles. Surgeon to Ear, Nose, and Throat Department: Mr. H. W. Carson. Ophthalmic Surgeon: Mr. R. P. Brooks. Physician for Skin Diseases: Dr. G. Norman Meachen. Medical Officer in charge of the X Ray and Electrical Departments: Dr. A. H. Pirie. Dental Surgeon: Mr. W. Donston. Anæsthetics: Mr. A. De Prenderville, Mr. F. Herbert Wallace, and Dr. W. S. Frith. Pathologist: Dr. G. Macdonald. Medical Registrar: Dr. G. Basil Price. Surgical Registrar: Mr. E. Gillespie. Secretary: Mr. F. W. Drewett.

**London Temperance Hospital**, Hampstead-road, N.W. (Established 1873).—Physicians: Dr. Fenwick, Dr. Parkinson, and Dr. Addinsell. Surgeon: Sir William J. Collins. Assistant Surgeon: Mr. H. J. Paterson. Dental Surgeon: Mr. A. Alexander. The hospital contains 110 beds. The in-patients in 1905 were 1266, and the out-patients and casualties numbered 25,216 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Special departments for Ophthalmology and Gynæcology. Operations: Mondays and Thursdays, 3.30 P.M. Classes will be held during the winter and summer sessions for students preparing for the final examinations at the Colleges and the Universities.

**North-West London Hospital**, Kentish Town-road.—Negotiations are pending between this hospital and the Hampstead General Hospital, with the approval of the King's Hospital Fund for London, for the amalgamation of the two institutions. If this takes place the North-West London Hospital will become an out-patient annexe of the Hampstead General Hospital and the latter institution will accommodate the in-patients from the districts which the North-West London Hospital now serves. We append below the present staff of the North-West London Hospital, some of whom are certain to hold office under the combined scheme. Consulting Physician: Dr. Donald W. C. Hood. Consulting Surgeon: Mr. Frederic Durham. Physicians: Dr. Harry Campbell, Dr. W. Knowsley Sibley, Dr. G. A. Sutherland, and Dr. C. O. Hawthorne. Surgeons: Mr. M. P. Mayo Collier, Mr. J. Jackson Clarke, and Mr. George Templeton. Assistant Surgeon: Mr. J. W. Thomson Walker. Physician for Diseases of the Skin: Dr. J. Herbert Stowers. Obstetric Physician: Dr. F. E. Taylor. Ophthalmic Surgeon: Sir William J. Collins. Dental Surgeon: Mr F. Talbot. Anæsthetists: Dr. G. A. H. Barton and W. E. Hills. Resident Medical Officers: Mr. J. R. Kemp and Mr. A. O'Neill. The hospital, which was established in 1878, provides 50 beds. The average number occupied last year was 45. It is a general hospital. There are two spacious wards for men and women respectively. The children's ward contains 15 cots. There are two Resident Medical Officers—an honorarium at the rate of £50 per annum attaches to each post. Operation days, Monday and Thursday at 2.30 o'clock. Further particulars from the secretary at the hospital.

**New Hospital for Women**, 144, Euston-road, N.W.—Physicians for In-patients: Miss Cock, M.D., and Miss Walker, M.D. Surgeons for In-patients: Mrs. Boyd, M.D., and Miss Aldrich-Blake, M.D., M.S. Physicians and Surgeons for Out-patients: Miss Macdonald, M.B., Miss Chadburn, M.D., B.S., Miss Anderson, M.D., B.S., and Miss Woodcock, M.D., B.S. Children's Department: Mrs. Flemming, M.D. Ophthalmic Surgeon: Miss Sheppard, M.B. Assistant Physicians for Out-patients: Miss Stoney, M.D., Miss Platt, M.B., Miss Campbell, M.D., B.S., Miss Hamilton, M.D., B.S., Miss Bone, M.D. Senior Obstetric Assistant: Miss Turnbull, M.D. Anæsthetists: Miss Browne, L.S.A., Miss Turnbull, M.D., and Miss Payne, M.B. A considerable number of the students hold posts in the New Hospital under the visiting staff, and in return for much valued clinical teaching they do the work assigned to students in the wards of a general hospital. Secretary: Miss M. M. Bagster.

**French Hospital and Dispensary**, Shaftesbury-avenue, W.C.—This hospital which was founded in 1867 to afford medical treatment for poor foreigners who speak the French language has 70 beds. It has a convalescent home at Brighton with accommodation for 33 patients and a pavilion for the preventive treatment of consumption. Physicians: Dr. G. Ogilvie and Dr. L. Williams. Physicians to the Out-patients: Dr. L. Vintras, Dr. H. Dardenne, and Dr. J. P. Baronoff. Surgeons: Mr. E. Owen, Mr. H. de Méric and Mr. W. H. Clayton-Greene. Obstetric Physician: Dr. S. Sunderland. Ophthalmic Surgeons: Mr. C. Higgens and Mr. G. W. Thompson. Dental Surgeon: Mr. M. Thomson. Honorary Anæsthetist: Mr. H. Davis. Resident Medical Officers: Mr. A. D. Kennard and Mr. K. Eckenstein.

**German Hospital**, Dalston, N.E.—This hospital was founded in 1845 with the object of supplying medical aid to poor people speaking the German language and for cases of emergency and of accident. It has 130 beds, including a sanatorium with six beds and a convalescent home with 17 beds. Consulting Physician: Sir H. Weber. Consulting Surgeon: Mr. R. W. Parker. Physicians: Dr. F. P. Weber, Dr. K. Fürth, and Dr. D. O'C. Finigan. Surgeons: Mr. E. Michels, Mr. J. P. zum Busch, and Mr. G. J. Jenkins. Ophthalmic Surgeons: Mr. R. Gruber and C. Markus. Anæsthetist: Mr. H. V. Price. Resident Medical Officers: Mr. W. Stockert, Mr. W. Engels, Mr. S. Chapuis, and Mr. K. Rupp.

**Italian Hospital.**—This institution was established in 1884 for the maintenance and medical treatment of Italian and Italian-speaking people, irrespective of their religious and political opinions, who may be suffering from sickness or bodily infirmity, but the sick poor of any nationality are also admitted for treatment. The institution also provides surgical and medical relief to Italians and others not being inmates of the hospital. It has 50 beds. Honorary Consulting Physicians: Cav. Dr. M. Castaneda and Sir Dyce Duckworth. Honorary Consulting Surgeon: Sir Frederick Treves. Physicians: Cav. Dr. F. Naumann, Cav. Dr. F. Melandri, and Dr. Vincent Dickinson. Assistant Physician: Dr. Herbert Danvers. Surgeon: Mr. George Lenthal Cheatle, C.B. Assistant Surgeon: Mr. T. P. Legg. Throat and Ear Department: Cav. Mr. J. Donelan. Ophthalmic Surgeon: Mr. Stanford Morton. Consulting Dental Surgeon: Cav. Mr. J. FitzGerald. Assistant Dental Surgeon: Mr. E. Whishaw Wallis. Anæsthetists: Dr. Hugh Richard Phillips and Mr. Laurence Galsworthy.

**National Hospital for the Paralysed and Epileptic** (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Wednesday, and Friday at 2.30 P.M. In- and out-patient practice and electrical-room treatment at that hour. Physicians: Dr. Hughlings Jackson, Dr. Buzzard, Dr. Bastian, Sir William Gowers, Dr. D. Ferrier, Dr. Ormerod, and Dr. Beevor. Physicians for Out-patients: Dr. Tooth, Dr. James Taylor, Dr. J. S. Risien Russell, and Dr. Aldren Turner. Assistant Physicians: Dr. Batten, Dr. J. S. Collier, and Dr. F. Buzzard. Surgeons: Sir Victor Horsley, Mr. C. A. Ballance, Mr. Donald J. Armour, and Mr. Percy W. G.

Sargent. Ophthalmic Surgeon: Mr. Marcus Gunn. Assistant Ophthalmic Surgeon: Mr. Leslie Paton. Aural Surgeon: Mr. A. E. Cumberbatch. Laryngologist: Sir Felix Semon. Gynæcologist: Dr. Walter Tate. Anæsthetist: Dr. Llewelyn Powell. Director, Research Department: Dr. Gordon Holmes. Assistant Pathologist: Dr. J. Grainger Stewart. Registrar: Dr. C. M. H. Howell. House Physicians: Dr. S. A. K. Wilson, Dr. R. F. Kennedy and Dr. H. R. Prentice. The hospital is a school of the University of London and has been recognised by the Conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Bethlem Royal Hospital.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They will be permitted to reside in the hospital for a term generally not exceeding six months, commencing July 1st and Jan. 1st, and will be provided with apartments, complete board, attendance, washing, and an honorarium of 25 guineas per quarter. They will be under the direction of the Resident Physician and will be elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital and qualified practitioners may attend for a period of three months on payment of a fee of £3 3*s*. Lectures are also given in connexion with the London Post-graduate Course.

Hospital for Consumption and Diseases of the Chest, Brompton (318 beds).—Four House Physicians reside in the hospital for a period of six months. Pupils are admitted to the practice of the hospital: terms, £1 1*s*. for one month; three months, £2 2*s*.; perpetual, £5 5*s*. Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence in October. Clinical Assistants are appointed to the Assistant Physician in the out-patient department and Clinical Clerks to the Physician in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. The hospital contains 318 beds in the two buildings. Consulting Physicians: Dr. J. E. Pollock, Sir Richard Douglas Powell, Dr. F. T. Roberts, Dr. C. T. Williams, Dr. J. M. Bruce, Dr. T. H. Green, Dr. J. K. Fowler, Dr. T. D. Acland, and Dr. P. Kidd. Physicians: Dr. R. Maguire, Dr. H. W. G. Mackenzie, Dr. S. H. Habershon, Dr. F. J. Wethered, Dr. P. Horton-Smith Hartley, and Dr. J. J. Perkins. Assistant Physicians: Dr. A. Latham, Dr. H. Batty Shaw, Dr. W. C. Bosanquet, Dr. R. A. Young, Dr. C. Wall, and Dr. W. J. Fenton. Consulting Surgeons: Lord Lister and Mr. R. J. Godlee. Surgeon: Mr. S. Boyd. Dental Surgeon: Mr. G. L. Bates. Resident Medical Officer: Dr. F. C. Shrubsall.

City of London Hospital for Diseases of the Chest, Victoria Park.—During the past year 1256 in-patients have been treated in the wards, and the large number of 38,290 cases since the opening of the wards in 1855. The number of out-patients treated during 1905 was 16,688 and 722,074 since the commencement of the institution in 1848. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Sub-committee at the hospital. Consulting Physicians: Dr. J. C. Thorowgood, Dr. Eustace Smith, Dr. Vincent D. Harris, Sir William S. Church, Dr. E. Clifford Beale, and Dr. Harrington Sainsbury. Consulting Surgeon: Lord Lister. Physicians: Dr. G. A. Heron, Dr. T. Glover Lyon, Sir Hugh Beevor, Bart., Dr. W. J. Hadley, Dr. E. H. Colbeck, and Dr. Arnold Chaplin. Surgeon: Mr. G. Lenthal Cheatle. Physicians to Out-patients: Dr. Hugh Walsham, Dr. Oliver K. Williamson, Dr. Clive Riviere, Dr. O. F. F. Grünbaum, Dr. A. I. Simey, and Dr. T. Lewis. Surgeon Dentist: Mr. Evelyn C. Sprawson. Secretary: Henry T. Dudley Ryder. Secretary of the Medical Committee: Dr. O. F. F. Grünbaum.

Royal Hospital for Diseases of the Chest, City-road. (80 beds.)—This hospital provides accommodation for 80 in-patients. Expenditure for 1906 £6175; income (including legacies, £733), £5725. The attendance of out-patients averages 27,000 annually. Consulting Physicians: Dr. Horace Dobell, Dr. P. J. Hensley, and Professor D. W. Finlay. Physicians: Dr. W. H. White, Dr. Oswald Browne, Dr. A. Davies, Dr. J. Calvert, Dr. M. Leslie, and Dr. J. H. Drysdale. Assistant Physicians: Dr. A. G. Phear, Dr. H. E. Symes Thompson, and Dr. J. Graham Forbes. Consulting Surgeons: Mr. J. Hutchinson and Mr. Pearce Gould. Surgeon: Mr. W. Turner. Resident Medical Officer: Dr. A. S. Hosford. House Physician: Dr. Campbell Anderson. Secretary: Mr. A. T. Mays.

The Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Central Out-patient Department, Fitzroy-square, W.—The Hospitals contain 220 beds. Number of in-patients, 1291; out-patients, 5800. Resident Medical Staff. Lectures and Clinical Demonstrations are given by the Visiting Medical Staff at the Hospital at Hampstead and the Out-patient department. The next course begins in October, at the out-patient department. Clinical assistants are appointed to physicians in the wards, and in the out-patient department. Consulting Physicians: Sir Hermann Weber and Dr. T. Clifford Allbutt. Consulting Surgeon: Mr. W. Watson Cheyne, C.B. Physicians: Dr. J. Edward Squire, C.B., Dr. F. W. Tunnicliffe, Dr. George Johnston, Dr. F. Parkes Weber, Dr. T. N. Kelynack, and Dr. T. D. Lister. Assistant Physicians: Dr. F. W. Price and Dr. A. J. Whiting. Pathologist: Dr. F. W. Price. Surgeon: Mr. James Berry. Laryngologist: Mr. Harold Barwell. Anæsthetist: Dr. Herbert Scharlieb, C.M.G., Dental Surgeon: Mr. F. Lawson Dodd.

Queen Charlotte's Lying-in Hospital and Midwifery Training School, Marylebone-road, N.W.—This hospital, which has been recently again enlarged and in which many important improvements have been carried out, receives over 1700 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly three-fourths of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all the Universities, Colleges, and licensing bodies. Pupil midwives and monthly nurses are received and specially trained. Fees: Medical Students, £8 8*s*. for four weeks; Qualified Medical Practitioners, £8 8*s*. for four weeks. Pupil Midwives (including board and lodging), £35 for five months; Pupil Nurses (including board and lodging), £24 for sixteen weeks. The new residence for students and qualified practitioners is opposite the hospital, with which it is in telephonic communication. Terms for residence and full board 35*s*. per week. For further particulars application should be made to Mr. Arthur Watts, Secretary, at the hospital. Students join preferably on the first Monday in each month. Consulting Physicians: Dr. George B. Brodie and Dr. W. S. A. Griffith. Consulting Surgeon: Mr. Alfred Willett. Physicians to In-patients: Dr. W. Rivers Pollock, Dr. W. J. Gow, Dr. T. W. Eden and Dr. A. F. Stabb. Physicians to Out-patients: Dr. C. Hubert Roberts, and Dr. H. Williamson.

The Hospital for Women, Soho-square, W.—In connexion with the out-patient department there has been for some years a well-organised Clinical Department. Gentlemen are appointed to act as clinical assistants to the gynæcologists to out-patients. The appointments are open to qualified medical men. They are entitled to receive notice of all operations performed within the hospital, and every facility is afforded them by the gynæcologists in the out-patient department of obtaining experience in diagnosis and treatment and the practical use of instruments Fee for one month £3 3*s*.; for each subsequent month £2 12*s*. 6*d*. The hospital contains 60 beds. In the out-patient department there were over 4000 new cases during the past year, the total number of out-patient attendances being 16,338. This large number affords exceptional opportunities for examining and studying most of the varieties of the diseases of women. Applications should be made to the Dean. Consulting Physicians: Dr. C. H. Carter and Dr. E. Holland. Consulting Surgeon: Mr. H. A. Reeves. Consulting Surgeon Dentist: Mr. Cauton. Gynæcologists: Dr. Richard Smith, Dr. J. A. Mansell-Moullin, Dr. Bedford Fenwick (in charge of out-patients), Dr. James Oliver, Dr. J. H. Dauber, and Dr. A. E. Stevens. Assistant Gynæcologist: Dr. H. J. F. Simson. Surgeon: Mr. D. Drew. Assistant

Surgeon: Mr. L. H. McGavin. Surgeon Dentist: Mr. C. G. May. Anæsthetists: Mr. C. J. Ogle and Dr. M. Horne. Pathologist: Dr. S. J. Aarons. Registrar, Dr. W. A. Milligan. House Physician: Dr. E. B. Holland.

East London Hospital for Children and Dispensary for Women, Glamis-road, Shadwell, E.—The hospital maintains 119 cots, and on an average 259 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months, subject to reappointment if desired. Clinical assistants (qualified men only) are from time to time appointed in the out-patient department. Any additional information may be obtained on applying to Mr. Cuthbert S. Wallace or to W. M. Wilcox, the Secretary, at the hospital. Physicians: Dr. Eustace Smith, Dr. J. A. Coutts, Dr. Morley Fletcher, Dr. E. Graham Little, and Dr. A. M. Gossage. Surgeons: Mr. Cuthbert S. Wallace and Mr. W. Trotter. Assistant Physicians: Dr. Clive Riviere, Dr. W. P. S. Branson, and Dr. T. Fisher. Assistant Surgeons: Mr. W. H. Bowen and Mr. R. Warren. Ophthalmic Surgeon: Mr. W. I. Hancock. Dental Surgeon: Mr. E. S. Pierrepont. Medical Officer for the Electrical Department: Dr. G. Graham. Medical Officer for the Casualty Department: Dr. J. R. Cook. Resident Medical Officer: Dr. W. N. May. House Physician: Mr. N. Allin. House Surgeon: W. Berry. Secretary: W. M. Wilcox.

The Hospital for Sick Children, Great Ormond-street, W.C., contains 222 beds, divided into 95 medical, 105 surgical, and 22 for special and infectious cases, besides 38 beds at the convalescent branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. The medical staff are recognised by the University of London as teachers in Diseases of Children. Appointments are made every three months to six medical clerkships, which are open to students of the hospital. Lectures or demonstrations are given once every week during both winter and summer sessions, which qualified practitioners are invited to attend free of charge. There is a museum in connexion with the hospital. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 3 guineas; perpetual ticket, 5 guineas. Consulting Physicians: Dr. W. H. Dickinson, Dr. W. B. Cheadle, Sir Thomas Barlow, Bart., Dr. D. B. Lees, and Dr. F. G. Penrose. Physicians: Dr. A. E. Garrod, Dr. A. F. Voelcker, Dr. W. S. Colman, and Dr. F. E. Batten. Physicians to Out-patients: Dr. G. F. Still, Dr. F. J. Poynton, Dr. Robert Hutchison, Dr. H. Thursfield, and Dr. T. Thompson. Consulting Surgeons: Sir Thomas Smith, Bart., Mr. Howard Marsh, Mr. Edmund Owen, Mr. John Morgan, and Mr. Bernard Pitts. Surgeons: Mr. W. Arbuthnot Lane, Mr. Thomas H. Kellock, Mr. H. Stansfield Collier, and Mr. Francis J. Steward. Surgeons to Out-patients: Mr. Edred M. Corner, Mr. G. E. Waugh, and Mr. H. A. T. Fairbank. Ophthalmic Surgeon: Mr. J. Herbert Parsons. Aural Surgeon: Mr. G. E. Waugh. Dental Surgeon: Mr. W. Warwick James. Honorary Anæsthetist: Dr. R. W. Collum Radiographer: Dr. Ironside Bruce. Local Medical Officer for Cromwell House: Dr. A. M. Henderson. Medical Registrar: Dr. Langmead. Clinical Pathologist and Bacteriologist: Mr. Graham Forbes. Anæsthetists: Mr. Graham Scott, Mr. E. E. Argles, and Mr. R. Delbruck. Resident Medical Superintendent: Mr. H. T. Gray. Secretary: Mr. Stewart Johnston.

Evelina Hospital for Sick Children, Southwark-bridge-road, S.E.—This hospital contains 76 cots and a very extensive Out-patient Department. About eight or ten clinical assistants to work with the Honorary Medical Staff for Out-patients are appointed quarterly for a period of three months, but there is no salary attached to this post. Consulting Physicians: Dr. J. F. Goodhart, Dr. Frederick Taylor, and Dr. Nestor Tirard. Physicians: Dr. J. Charlton Briscoe and Dr. T. R. C. Whipham. Physicians in charge of Out-patients: Dr. D. Forsyth and Dr. H. C. Mann. Consulting Surgeons: Sir H. G. Howse, Mr. R. Clement Lucas, Mr. G. H. Makins, Mr. F. S. Eve, Mr. F. C. Abbott, and Mr. A. H. Tubby. Surgeons: Mr. C. H. Fagge and Mr. H. S. Clogg. Surgeons in charge of Out-Patients: Mr. W. M. Mollison and Mr. C. A. R. Nitch. Dental Surgeon: Mr. Denison Pedley. Ophthalmic Surgeon: Mr. Sydney Stephenson. Aural Surgeon: Mr. S. R. Scott. House Physician: Mr. Langford Davies. House Surgeon: Mr. H. Wyatt. Assistant House Surgeon: Mr. S. G. Corner. Pathologist: Mr. A. N. Leathem. Dispenser: Mr. F. A. Hocking. Radiographer: Mr. R. H. Cooper.

Victoria Hospital for Children, Chelsea, S.W.—The hospital contains 104 beds and has a large out-patient department (over 1200 weekly); the home at Broadstairs has 50 beds. Consulting Physicians: Sir Francis Laking and Dr. Ridge Jones. Consulting Surgeons: Mr. Cowell, Mr. Pickering Pick, and Mr. D'Arcy Power. Physicians: Dr. Montague Murray, Dr. Walter Carr, Dr. Humphry D. Rolleston, Dr. Edmund Ivens Spriggs, Dr. A. J. Jex-Blake, and Dr. Charles Miller. Physician to Skin Department: Dr. J. M. H. MacLeod. Surgeons: Mr. H. F. Waterhouse, Mr. Rupert H. Bucknall, and Mr. Joseph Cunning. Surgeons to the Out-patients: Mr. W. Fedde Fedden, Mr. S. Maynard Smith, and Mr. Ralph Thompson. Ophthalmic Surgeon: Mr. C. Devereux Marshall. Dental Surgeon: Mr. C. E. Wallis. Anæsthetists: Dr. Randolph Grosvenor, Dr. Reginald H. Tribe, and Dr. C. G. H. Gunning. Resident Medical Officer: Mr. J. D. Marshall. House Surgeon: Mr. Eric Harries. House Physician: Mr. R. S. Jenkins. Secretary: Mr. H. G. Evered. Out-patients are seen as under:—Diseases of the Eye: Wednesday, 2 p.m. Diseases of the Skin: Wednesday, 2 p.m. Whooping-cough Cases: Fridays, 9.30 a.m. Medical and Surgical Cases: Monday and Thursday mornings at 9 a.m.; any afternoon except Wednesday and Saturday at 12.30 p.m. Dental Cases: Wednesday mornings at 9.30 a.m. Accidents and urgent cases are admitted at any time.

North-Eastern Hospital for Children, Hackney-road, Bethnal Green, E. (Telephone 305 Dalston). For the sick children of the poor under 12 years of age. Established 1867.—125 beds. During the past year 1712 in-patients and 29,864 out-patients (representing 76,247 attendances and including 12,591 casualty cases) were relieved, 625 of the in-patients being under two years of age. Consulting Physicians: Dr. W. Cayley, Dr. W. Pasteur, and Dr. W. A. Wills. Consulting Surgeons: Mr. Jonathan Hutchinson, Mr. Waren Tay, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. H. Percy Dean. Physicians: Dr. James Taylor, Dr. J. Porter Parkinson, and Dr. George Carpenter. Assistant Physicians: Dr. Charles Bolton and Dr. Sheffield Neave. Surgeons: Mr. Douglas Drew and Mr. Ewen C. Stabb. Assistant Surgeons: Mr. P. Lockhart Mummery and Mr. J. M. G. Swainson. Ophthalmic Surgeon: Mr. Sydney Stephenson (Thursday, 2.30 p.m.). Physician in charge of Skin Department: Dr. H. G. Adamson. Dental Surgeon: Mr. S. F. Rose (Tuesday, 9.30 a.m., and Friday, 2.30 p.m.). Medical Radiographer: Mr. Percival Dingle. Pathologist and Bacteriologist: Dr. W. A. Milligan. Matron: Miss Bushby. Secretary: Mr. T. Glenton-Kerr. The surgeons attend on Wednesdays at 2 p.m. and Fridays and Saturdays at 9.30 a.m.; the physicians daily at 2 p.m., except Saturday, 9.30 a.m. Applications for permission to attend the practice of the hospital should be addressed to the secretary.

Royal London Ophthalmic Hospital (Moorfields, 1804–1899), City-road, E.C.—138 beds. This hospital, known as Moorfields Eye Hospital, was moved in 1899 to larger buildings in City-road. In 1906 there were 2071 in-patients, the new out-patients were 45,638, and the attendances were 123,355. Operations are performed daily from 10 a.m. to 1 p.m. and four surgeons attend on each day. Students are admitted to the practice of the hospital. Fee for six months, £3 3*s.*; perpetual, £5 5*s.* Courses of instruction on the following subjects are given at the hospital periodically: (1) the use of the ophthalmoscope; (2) errors of refraction; (3) external diseases of the eye; (4) surgical anatomy of the eye; (5) pathology of the eye; (6) practical pathology; (7) motor anomalies; (8) examination of the eye; (9) operative surgery; (10) x ray work; and (11) clinical lectures. A composition fee of £10 10*s.* will entitle students of the hospital to a perpetual ticket and will admit them once to all the above lectures and demonstrations except the classes on practical pathology, operative surgery, and x ray work. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants.

Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary. Consulting Physician: Sir Stephen Mackenzie. Consulting Surgeons: Mr. J. Hutchinson, Mr. J. Couper, Mr. E. Nettleship, Sir John Tweedy, and Mr. W. Tay. Physician: Dr. J. Taylor. Surgeons: Mr. R. M. Gunn, Mr. W. Lang, Mr. J. B. Lawford, Mr. A. S. Morton, Mr. E. T. Collins, and Mr. W. T. H. Spicer. Assistant Surgeons: Mr. P. Flemming, Mr. J. H. Fisher, Mr. A. Lawson, Mr. C. D. Marshall, Mr. J. H. Parsons, and Mr. C. Worth. Medical Officer to the X Ray Department: Mr. J. M. Davidson. Curator and Librarian: Mr. G. Coats. Senior House Surgeon: Mr. C. Goulden. Second House Surgeon: Mr. A. C. Hudson. Third House Surgeon: Mr. Norman E. Gibbs. Refraction Assistants: Mr. T. Phillips, Miss W. Thorp, and Mr. G. T. Mould.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand.—The hospital contains 40 free beds. Patients, who number over 11,000 annually, are seen at 1 P.M., and operations performed daily at 2 P.M. The following are the days of attendance of the surgeons: Mr. Hartridge and Mr. Grimsdale, Mondays and Thursdays; Mr. Roll and Mr. McMullen, Tuesdays and Fridays; and Mr. Dodd and Mr. Brewerton, Wednesdays and Saturdays. The practice of the hospital is open to practitioners and students. Fees for six months, £3 3*s.*; perpetual, £5 5*s.* Students of the hospital are eligible for the posts of house surgeon and clinical assistants. Special demonstrations and lectures will be given during the session, commencing in October; for details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgeons are appointed for periods of six months. Secretary: Mr. John Hy. Johnson.

Royal Eye Hospital, St. George's-circus, Southwark, S.E.—There are 40 beds and 2 cots. There were 76,734 attendances in the Out-patient Department last year and the new patients numbered 26,150. Operations are performed and out-patients are seen daily at 9 A.M. and 2 P.M. The following are the days of attendance:—Afternoons: Mr. M. M. McHardy, Tuesdays and Thursdays; Sir William J. Collins, Mondays and Wednesdays; Mr. L. V. Cargill, Tuesdays and Fridays; and Mr. J. Stroud Hosford, Mondays, Thursdays, and Saturdays. Mornings: Mr. E. Brooksbank James, Mondays and Thursdays; Mr. A. W. Ormond, Wednesdays and Saturdays; Mr. H. Willoughby Lyle, Tuesdays and Fridays. Qualified practitioners and students are admitted to the practice of the hospital upon the recommendation of the medical staff. Courses of instruction in Ophthalmology will be given during October, November, and December, 1907. Lectures will be delivered on Monday, Wednesday, and Friday evenings at 8 P.M. In addition special lectures or clinical demonstrations will be given by the hospital staff on dates to be announced. Fee for the course, £2 2*s.*; including three months' hospital practice, £3 3*s.* Tutorial or coaching classes for the various examinations arranged as far as possible to suit candidates. Further particulars may be obtained from the honorary secretary, Mr. A. W. Ormond.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—This hospital has 26 beds and possesses facilities for clinical teaching daily. Last year there were 355 in- and 12,910 out-patients (entailing 31,230 attendances). Classes of instruction in the various branches of Ophthalmology will be held during the winter session, commencing in October. The out-patient work begins at 1 o'clock and operations are performed daily between 1 and 4. Consulting Physician: Sir Dyce Duckworth. Surgeons: Mr. T. Brittin Archer, Mr. Ernest Clarke, Mr. A. P. L. Wells, and Mr. H. Parker. Assistant Surgeons: Mr. Ilbert Hancock and Mr. Stephen Mayou. Physician: Mr. Charles O. Hawthorne. Pathologist: Mr. Stephen Mayou. House Surgeon: Mr. G. Allison. Dentist: Mr. E. P. May. Secretary: Mr. H. R. S. Druce.

Central London Throat and Ear Hospital, Gray's Inn-road.—In addition to the new In-patient Department, and operation theatre the hospital has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year 10,052 out-patients (involving over 50,000 attendances) and 413 in-patients were treated. The fee for three months' attendance, 3 guineas; for six months, 5 guineas. The post-graduate teaching consists of successive series of practical demonstrations by the members of the staff delivered twice weekly during the winter and summer sessions. They are so arranged that practitioners joining at any part of the course are enabled to complete the group of subjects. The fee for each course is two guineas, with daily attendance at the out-patient department during the period of the course. Details of subjects, &c., will be afforded by the Dean. Considerable attention is given to scientific work, particularly with regard to Bacteriology of the ear and respiratory passages. Operation days: in-patients, Tuesday, Wednesday, Thursday, and Friday, at 2 P.M.; out-patients, daily at 9 A.M. Consulting Physician: Dr. Arthur Orwin. Consulting Surgeon: Mr. Thomas Nunn. Surgeons: Dr. Dundas Grant, Dr. Percy Jakins, Mr. Chichele Nourse, and Dr. Abercrombie. Assistant Surgeons: Mr. Stuart Low, Dr. Andrew Wylie, Dr. Atkinson, and Dr. McKenzie. Pathologist: Dr. Wyatt Wingrave. Bacteriologist: Mr. St. George Reid. Dental Surgeon: Mr. Whishaw Wallis. Anæsthetist: Mr. W. Hotten George. Assistant Anæsthetists: Mr. A. B. Kingsford, Dr. Lauzun-Brown, and Dr. MacKeith. In addition the following appointments are open to qualified members of the profession:—Three Registrars, tenable for twelve months; and twelve Clinical Assistants, tenable for six months. Secretary: Mr. Richard Kershaw. Dean: Dr. Wyatt Wingrave.

London Throat Hospital, 204, Great Portland-street, W.—Clinical Demonstrations on the Diseases of the Throat, Nose, and Ear are given daily at 2 P.M. and on Tuesday and Friday evenings at 6 P.M. Operations are performed almost daily at 9.30 A.M. Individual instruction is given in the examination of cases to students attending the hospital. Fees: one month's attendance, £1 1*s.*; three months, £2 2*s.*; perpetual, £5 5*s.* Detailed information may be obtained from the Hon. Secretary of the Medical Committee.

The Metropolitan Ear, Nose, and Throat Hospital.—The hospital was founded in 1838 and is situated in Grafton-street, Tottenham-court-road. The out-patient department is opened daily at 2.30 P.M. to all medical practitioners and senior students for acquiring clinical instruction and technical knowledge. Operations upon in-patients are performed on Tuesdays, Wednesdays, and Thursdays at 9.30 A.M. Fee for one month's attendance at the hospital £1 1*s.*, and for three months £2 2*s.* During the forthcoming session practical demonstrations will be given by members of the staff on the diagnosis and treatment of diseases of the ear and respiratory passages. Each course may commence at any time.

Royal Ear Hospital, Dean-street, Soho. (Founded 1816.)—Courses of instruction of a practical character in Diseases of the Ear and Nose are given by the members of the staff throughout the year. Clinical assistants are also appointed. The new hospital is now in full working order. Students may join at any time. For information address the Honorary Secretary of the Medical Board, Mr. T. H. Chaldecott.

St. Peter's Hospital for Stone and Urinary Diseases, Henrietta-street, Covent-garden. Established 1860. New Hospital opened, 1882.—Honorary Surgeons: Mr. F. Swinford Edwards and Mr. P. J. Freyer. Assistant Surgeons: Mr. John Pardoe and Mr. J. W. Thomson Walker. The hospital contains 30 beds for men and 2 beds for women and children. Consultations are held and operations are performed each Wednesday and Friday at 2 P.M. Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 P.M. Average beds occupied daily, 25; average out-patients seen daily, 100.

St. John's Hospital for Diseases of the Skin Leicester-square, W.C. Rebuilt 1905.—The in-patient department, 50 beds, is at 262, Uxbridge-road, W. The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 4 P.M., and every evening (except Saturday) 6 to 8. Specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, followed by Lectures, will also be given. The x ray department is in operation every afternoon except Saturday. The Chesterfield Lectures are given on Thursdays at 6 P.M. October to March in the lecture room at 49, Leicester-square. The opening lecture will be given on Oct. 3rd. At the end of the course the Chesterfield silver medal may be competed for by those who have attended three-fourths of the lectures.

Royal Army Medical Corps (Volunteers) (London

Companies), Calthorpe-street, Gray's Inn-road, W.C.—Officer Commanding: Colonel Valentine Matthews, V.D. The Royal Army Medical Corps (Volunteers) bears the same relation to the Volunteer Army as the Royal Army Medical Corps bears to the regular Army. The course of training has the great advantage of affording, in addition to a knowledge of ordinary military duties, special ambulance instruction useful in all ranks of life. All students who are thinking of entering either of the public services are strongly recommended to join. The instruction received will be found of the greatest advantage to such as intend joining either the Royal Army Medical Corps or the Indian Medical Service on the completion of their hospital course, the work taught in the Royal Army Medical Corps (Volunteers) being practically the same as that taught at the Depôt, Royal Army Medical Corps, Aldershot, and in which an examination is held at the end of the four months' course there before the young officers are drafted to their different stations. A sound knowledge of the work, which can be obtained in the Royal Army Medical Corps (Volunteers) must necessarily be of great benefit to those going through the depôt and give a decided advantage over those who have had no previous military training. In addition to the drills of an ordinary infantry corps, the special training includes stretcher and wagon and cacolet drill; the use of improvised seats and stretchers; the use and application of bandages, splints, &c.; the duties of the *personnel* of a field ambulance; lectures by the officers on first aid to the injured, and on the elements of anatomy, physiology, hygiene, and nursing, which are so arranged as not to interfere with the lectures, &c., carried on at the various hospitals in London. The corps goes into camp for a week in the summer each year for field training. There is also a Shooting Club in the corps, in which instruction in, and facilities for, the practice of rifle shooting are given. There is a Transport Section in connexion with the corps, the members of which go through a course of instruction in riding and driving and transport work with the regular troops. There are also sections of Cyclists and Signallers. A Gymnastic and Boxing Class meets once a week at headquarters, under a professional instructor. Lectures are delivered during the winter session. The Adjutant will give any information respecting the above on application to the headquarters, Calthorpe-street, Gray's Inn-road, W.C.

Cooke's School of Anatomy, Physiology, and Operative Surgery, London.—The school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half-a-dozen students in the course of the year; these have special advantages both as regards Anatomy and Physiology. Charges are but slightly in excess of current charges and particulars are forwarded on application. By the decision of various examining bodies gentlemen rejected at their Anatomical and Physiological Examinations can get signed up for the supplementary work they are required to put in before re-examination. The operations of surgery are performed on the dead body and the courses are recognised for army promotion. The school possesses a good collection of physiological and chemical apparatus and candidates for the higher examinations receive special instruction in the more difficult subjects.

Whale Oil *v.* Cod-liver Oil.—The British consul at Bahia, Dr. D. R. O'Sullivan-Beare, states in a report to the Foreign Office that refined whale oil as prepared at Bahia resembles cod-liver oil so closely in the attributes of colour, consistency, odour, and taste as to be almost indistinguishable therefrom. The oil in question enjoys a high reputation locally for its medicinal properties and is preferred, indeed, to cod-liver oil. There are unfortunately only too many sufferers, consumptives especially, who would benefit from taking cod-liver oil regularly but for whom the high price of that article is prohibitive. In the interests of such persons, the consul adds, it is certainly worth determining whether or not the comparatively cheap whale oil constitutes an efficacious substitute for the more costly cod-liver oil. The export trade in whale oil is in the hands practically of one firm, which is British. Samples of "ordinary" and "refined" whale oil as prepared at Bahia have been sent to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, where they may be inspected by those interested.

## PROVINCIAL MEDICAL SCHOOLS AND HOSPITALS HAVING SPECIAL CLASSES AND FACILITIES FOR CLINICAL STUDY.[1]

The number of important provincial medical schools has much grown of late in England mainly owing to the foundation of the new provincial universities. The faculty of medicine of these universities is able to arrange a full medical curriculum for students with access to the different hospitals, large and small, of the university city, and the students at these schools will receive at the end of their medical course a degree in medicine. We have already described the academic procedure to obtain the degrees; we now enumerate the hospitals at which the students of the medical schools of the universities can complete their medical education.

University of Oxford: Radcliffe Infirmary and County Hospital—Courses of instruction are given in connexion with the Oxford University Medical School. These include (1) a course in Practical Medicine by the Regius Professor of Medicine; (2) Clinical lectures by the Litchfield Lecturers in Medicine and Surgery; and (3) tutorial instruction and demonstrations in special Regional Anatomy (medical and surgical), methods of Medical and Surgical Diagnosis, and Surgical Manipulation. Pathological demonstrations are given in the post-mortem room at the Pathological Laboratory by the Professor of Pathology. Practical Pharmacy is taught in the Radcliffe Dispensary. Opportunities are offered to students who wish to act as surgical dressers and clinical clerks in the out-patient departments and in the wards. The Infirmary contains 150 beds.

University of Cambridge: Addenbrooke's Hospital.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are delivered at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery in the wards and out-patients' rooms is given by the physicians and surgeons daily, during the vacations as well as term time. Instruction is also given in the special methods of medical and surgical investigation. Clinical Clerks and Dressers are selected from students according to merit. The composition fee for pupilship is 8 guineas.

University of Durham: The College of Medicine, Newcastle-upon-Tyne.—A new wing has been added to accommodate the departments of physiology and bacteriology. It also contains a students' gymnasium and a set of Students' Union rooms. The new Royal Victoria Infirmary, containing upwards of 400 beds, has been recently opened by His Majesty King Edward VII. In the new infirmary adequate accommodation will be provided for the study of the various special subjects, in addition to the ordinary clinical work. The following Scholarships and Prizes are awarded annually:—Four University of Durham Scholarships, value £25, tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Pears Scholarship, value £50 a year, tenable for three years (when vacant). The Masonic Scholarship, value £15 a year, tenable for three years (when vacant). The Dickinson Scholarship, value interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680, for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late Dr. George Yeoman

---

[1] For Scholarships see p. 634 et seq.

Heath, President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year; the next award will be in 1908. The Gibson Prize, interest on £225, in the department of Midwifery and Diseases of Women and Children. The Turnbull Prize and Medal for Surface Anatomy. At the end of each session Prizes of Books are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

NEWCASTLE-UPON-TYNE ROYAL VICTORIA INFIRMARY.—This Infirmary was founded in 1751 but has been recently rebuilt, the new hospital being opened in 1906. The number of beds is 410. The number of in-patients annually is 4900 and of out-patients 51,000. The medical students of the University of Durham attend the practice of this hospital. Clinical Lectures are delivered by the Physicians and Surgeons weekly and ward demonstrations are given daily. Tutorial classes are held by the Assistant Physicians and Assistant Surgeons weekly, and demonstrations are given in the several out-patient departments daily. Pathological demonstrations are given by the Pathologist daily or as opportunity occurs, and in the new buildings nothing has been spared in perfecting scientific equipment. In addition to medical and surgical in-patient and out-patient departments the following special departments are fully equipped for teaching students: Ophthalmic, Throat and Ear, Skin, Orthopædic, Gynæcological, Electrical, and Bacteriological. The hospital building contains the following laboratories: 1. Special Pathological Laboratory, attached to the post-mortem rooms. 2. Bacteriological Laboratory, in which all clinical bacteriological investigations are carried out—opsonic indices estimated with a view to treatment by vaccines and serums, &c. 3. There is in addition a Clinical Laboratory attached to each ward and to the out-patient department. There are five operating theatres in use in the hospital, three large theatres, a smaller one for emergencies, and an out-patient theatre. The surgical practice is especially good; more than 4000 surgical operations were performed in the last 12 months. Every facility is given to students to take out the full or any part of the hospital curriculum, and clerkships or assistantships in any of the several special departments are open to undergraduates or graduates for periods of from one to three months. There are ten resident medical and surgical officers, two of whom are paid, and preference for these appointments is given to students who have fulfilled their curriculum in the hospital. The sessions open on May 1st and Oct. 1st of each year. Applications for detailed information should be made to the Dean, Dr. Thomas Beattie, at the hospital. The following is the staff of the hospital:—Physicians: Dr. David Drummond, Dr. Thomas Oliver, Dr. James Limont, and Dr. G. R. Murray. Assistant Physicians: Dr. Thomas Beattie and Dr. R. A. Bolam. Surgeons: Mr. J. R. Rutherford Morison, Mr. A. M. Martin, Mr. H. B. Angus, and Mr. J. V. W. Rutherford. Assistant Surgeons: Mr. W. G. Richardson, Mr. J. W. Leech, Mr. John Clay, and Mr. G. G. Turner. Ophthalmic Surgeon: Mr. J. D. Wardale. Throat and Ear Department: Surgeon: Mr. G. W. Ridley; Assistant Surgeon: Mr. S. H. Whillis. Gynæcological Department: Dr. R. P. R. Lyle. Skin Department: Physician: Dr. James Limont; Assistant Physician: Dr. D. W. Patterson. Orthopædic Depart-ment: Mr. A. M. Martin. Electrical Department: Dr. W. D. Arnison. Pathologist: Dr. R. A. Bolam. Bacteriologist: Dr. H. J. Slade. Pathological and Analytical Chemist: Mr. P. P. Bedson, D.Sc. Anæsthetists: Dr. R. Younger, Dr. F. G. Armstrong, Dr. L. S. Davison, and Dr. H. H. Markham. Medical Registrars: Dr. W. E. Moore-Ede and Dr. W. Simpson. Surgical Registrars: Mr. J. W. Heslop and Mr. A. Parkin.

There are other institutions at which the student of medicine of the University of Durham can receive clinical instruction. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth. A special course of instruction is given in the City Hospital for Infectious Diseases by the Superintendent, the City Officer of Health, Mr. H. E. Armstrong.

NORTHUMBERLAND, DURHAM, AND NEWCASTLE INFIRMARY FOR DISEASES OF THE EYE, St. Mary's-place, Newcastle-on-Tyne.—Consulting Surgeon: Mr. F. Page. Staff Surgeons: Mr. A. S. Percival and Mr. H. P. Bennett. Assistant Surgeons: Mr. Andrew Messer and Mr. J. B. Hartley. Honorary Anæsthetists: Dr. O. W. Ogden and Mr. T. H. Livingstone. Matron: Miss C. Crump. Secretary: Mr. Richard Smith, 61, Westgate-road, Newcastle-on-Tyne. Out-patients for 1906, 6573; in-patients, 345.

THE VICTORIA UNIVERSITY OF MANCHESTER: MEDICAL FACULTY.—This medical school is located in a large building, which forms a part of the University. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, a large extension of the school buildings was made in 1895. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating 50 students, lighted from both sides and also from the roof, completely equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of the students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, accommodating 250 students, has been provided, and the existing accommodation for students is supplemented by the provision of a larger common room. The more strictly practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted in the infirmary, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary. The following entrance scholarships are offered for award to persons of either sex proposing to enter a medical course of study at the University:—Seaton—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years Subjects as in Dalton. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar, and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). Dora Muir.—£25 per annum, tenable for three years (open to women only). Candidates may select such of the subjects as they desire from amongst those set for the other Entrance Scholarships. James Gaskill.—£35, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics, Chemistry. Credit given for knowledge of Classics, Elements of English Language, Literature, and History, and French and German. Manchester Grammar School.—£25 per annum, tenable for three years. The examinations for all these scholarships are held in the month of May. Kay-Shuttleworth (Sir James Phillips).—£30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics, Chemistry. Entrance Scholarships in Medicine.—One Scholarship in each year will be offered for proficiency in Arts and one for proficiency in Science. The Scholarships are of the value of £100 each, which will be set off against their fees as follows: £60 against the fees and £40 against the Infirmary fees. Platt Biological Scholarship.—£50 for one year, awarded to the candidate who shows the most promise and ability for prosecuting original research in Zoology and Botany. Dauntesey Medical Scholarships.—Two Scholarships of £35 each are open to all students preparing for a medical course who shall not have attended lectures or Laboratory courses on human anatomy or physiology, or a purely medical or surgical course in the University or any other Medical School in the United Kingdom. Candidates will be examined in Zoology, Botany, and Chemistry. Medals are awarded on the results of the various class examinations at the end of each session. A Platt Physiological Scholarship of £50 a year for two years is offered annually to the competition of persons whether previously students of the University or not. Two Platt Exhibitions, of the value of £15 each, to be competed for by first and second year students in the class of Physiology, and a Sidney Renshaw Exhibition in Physiology of the value of £15 to be competed for by second year students in Physiology. A Professor Tom Jones Memorial Exhibition of the value of £25, a Dumville Surgical Prize of £15, a Turner Medical Scholarship of £20, and a John Henry Agnew Scholarship in Diseases of Children of £30 are offered annually for competition. A Professor Tom Jones Memorial Scholarship of £100 is awarded triennially, a Bradley Memorial Scholarship in Clinical Surgery of the value of £20 and Medical and Surgical Clinical Prizes, each of the value of 6 guineas, are open to competition each year for the best reports (with comments) of cases which have occurred in the wards of the infirmary.

THE MANCHESTER ROYAL INFIRMARY.—The medical students of the Victoria University of Manchester receive their clinical instruction at the hospital. The hospital contains 292 beds, with an annual average number of over 5000 inpatients. The annual average number of out- and home-patients is 29,000, and the list of casualties dealt with in the accident room exceeds 14,000 per annum. About 2800 operations are performed annually in the operation theatres. It is expected that the new infirmary, built on the Stanley Grove estate, to accommodate 600 in-patients, will be opened at the commencement of the Winter Session next year. Associated with the infirmary are: (1) the Convalescent Hospital at Cheadle, containing 136 beds; and (2) the Royal Lunatic Hospital at Cheadle, accommodating with its branches 430 patients. The associated hospitals thus contain 858 beds and are under the same management. Women students are admitted to the practice of the infirmary on the same terms as men, except in the surgical out-patient department. A valuable Medical Reference Library is accessible to students. In addition to the list of scholarships tabulated in another column, two Entrance Scholarships in Medicine of the value of £100 each are offered annually by the Council of the Manchester University and the Medical Board of the Manchester Royal Infirmary for proficiency in Arts and Science subjects respectively. The Bradley Memorial Scholarship in Clinical Surgery, value £20, is offered annually in the Summer Session. Gentlemen are eligible who are in their fifth or sixth year of study, have completed their dresserships, and have spent two years in clinical work at the Manchester Royal Infirmary. One Medical and one Surgical Clinical Prize of the value of 6 guineas are offered annually. (The other scholarships and prizes are in the College Syllabus.) Annual appointments may be held by those who have attended the practice of the infirmary: a Surgical Registrar (£80); a Pathological Registrar (£100); a Medical Registrar (£70); a Surgical Tutor (£30); a Director of the Clinical Laboratory (£200); an Assistant Medical Officer and an Assistant Surgical Officer (£50 each); an Anæsthetist (£50); an Assistant Anæsthetist (£50); a Medical Officer for home patients (£150). A Third Anæsthetist is appointed for six months (30 guineas) and an Accident House Surgeon is appointed for three months (20 guineas). The following resident appointments are also made annually: Resident Medical Officer (£150); Resident Surgical Officer (£150); Resident Medical Officer at the Convalescent Hospital at Cheadle (£150). An Assistant Medical Officer at this hospital is appointed every six months at a salary of £80 per annum. The following unpaid appointments are open to those who have attended the practice of the Infirmary:—House Surgeons: Two House Surgeons are appointed every three months for a term of six months. House Physicians: Two House Physicians are appointed every three months for a term of six months. The House Surgeons and House Physicians and Resident Assistant at Cheadle must possess registrable qualifications. Consulting Physician: Dr. Henry Simpson. Consulting Surgeons: Mr. Walter Whitehead and Mr. James Hardie. Physicians: Dr. Graham Steell, Dr. J. S. Bury, Dr. A. T. Wilkinson, and Dr. E. S. Reynolds. Assistant Physicians: Dr. R. T. Williamson, Dr. E. M. Brockbank, and Dr. E. N. Cunliffe. Pathologist: Dr. J. Lorrain Smith. Consulting Obstetric Physician: Dr. Lloyd Roberts. Gynæcological Surgeon: Dr. Archibald Donald. Surgeons: Mr. F. A. Southam, Mr. G. A. Wright, Mr. William Thorburn, and Mr. J. E. Platt. Assistant Surgeons: Mr. W. P. Montgomery, Mr. J. W. Smith, Mr. A. H. Burgess, and Mr. J. H. Ray. Ophthalmic Surgeon: Dr. Hill Griffith. Aural Surgeon: Dr. William Milligan. Anæsthetist: Mr. Alex. Wilson. Consulting Dental Surgeon: Mr. G. W. Smith. Dental Surgeon: Mr. W. A. Hooton. Pathological Registrar: Dr. W. B. Anderton. Medical Registrar: Dr. A. Ramsbottom. Surgical Registrar: Mr. A. E. Johnson. Director of the Clinical Laboratory: Dr. G. E. Loveday. Assistant Director of the Clinical Laboratory: Dr. A. Ramsbottom. Administrators of Anæsthetics: Mr. W. J. S. Bythell and Mr. A. F. Thompson. Assistant Medical Officer for Out-patients: Dr. J. D'Ewart. Assistant Surgical Officers for Out-patients: Mr. C. Roberts, Mr. E. D. Telford, and Mr. P. R. Wrigley. Medical Officer for Home Patients: Dr. George Ashton. General Superintendent and Secretary: Mr. Walter G. Carnt. The Winter Session commences Oct. 1st.

There are other institutions at which the student of medicine of the University of Manchester can receive clinical instruction.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury and Gartside-street, Manchester.—The hospital contains 168 beds and 24 in the Convalescent Home, St. Anne's-on-Sea. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the new Out-patient Department, Gartside-street, Manchester. Physicians: Dr. Ashby, Dr. Hutton, and Dr. Heywood. Surgeons: Mr. J. Howson Ray, Mr. E. D. Telford, and Mr. C. Roberts. Honorary Consulting Surgeon: Mr. G. A. Wright. Honorary Consulting Pathologist: Professor R. Lorrain Smith. Anæsthetist: Mr. Harold Snape. Honorary Surgeon for Throat, Nose, and Ear Diseases: Mr. F. H. Westmacott. Pathologist: Dr. W. Mair. Honorary Dental Surgeon: Mr. Barron J. Rodway. Resident Medical Officers: Mr. E. E. Hughes and Mr. T. M. Bride. Medical Officers at the Dispensary: Dr. C. P. Lapage and Mr. R. H. Swindells. During 1906 there were 2235 in-patients and 25,323 new out-patients were under treatment at the Dispensary, and there were 77,857 attendances made by out-patients. Secretary: Mr. H. J. Eason.

THE MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham-hill-road, Manchester.—The hospital contains 70 beds. Out-patients are seen daily from 8.30 to 10 A.M. Honorary Consulting Physicians: Dr. W. N. Maccall, Dr. S. Holgate Owen, and Dr. T. C. Railton. Honorary Consulting Surgeons: Mr. James Hardie and Mr. Frederick A. Southam. Honorary Physicians for Women: Dr. Samuel Buckley and Dr. T. Arthur Helme. Honorary Surgeon for Women: Mr. Arnold W. W. Lea. Honorary Physician: Dr. J. J. Cox. Honorary Assistant Physician: Dr. W. E. Fothergill. Honorary Assistant Physicians for Children: Dr. C. H. Melland and Dr. C. C. Heywood. Honorary Surgeon for Children: Mr. Charles Roberts.

Honorary Anæsthetists: Mr. G. A. Barrow and Dr. H. R. Clarke. Pathologist: Dr. J. Garvie McNaughton. Assistant Medical Officers: Dr. A. W. Lilley and Mr. R. W. Walsh. Honorary Dentist: Mr. W. A. Hooton. House Surgeon: Mr. George H. Leigh.

THE UNIVERSITY OF LIVERPOOL: FACULTY OF MEDICINE.—Students may enter for the degrees of the University of Liverpool or study for the degrees and qualifications of the various other licensing bodies. The conditions as to degrees will be found on p. 583 under the heading of the University of Liverpool.

*Medical School Buildings.*—Spacious and well-equipped class-rooms and laboratories have been erected for the practical study of all the important scientific subjects which form the basis of medicine. Medical research has also been endowed with several new laboratories in which students can pursue research work after graduation. All the laboratories and class-rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle. The most recent additions are the Johnston Laboratories for Experimental Medicine, Bio-chemistry, and Comparative Pathology and the new building for Anatomy, Surgery, Toxicology, Ophthalmology and Dental subjects, which has just been completed. The departments of Physiology and Pathology are accommodated in the large block provided by the generosity of the late Rev. S. A. Thompson Yates in 1898. The Anatomical department is situated in a separate block and has a complete suite of rooms, including a large and well-stocked museum and a well-lighted dissecting room on the upper floor measuring 70 by 40 feet.

*Hospitals.*—The Clinical School of the University now consists of four general hospitals—the Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, and the Stanley Hospital; and of five special hospitals—the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children, St. Paul's Eye and Ear Hospital, and St. George's Hospital for Skin Diseases. These hospitals contain in all a total of 1127 beds. The organisation of these hospitals to form one teaching institution provides the medical student and the medical practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom. All the hospitals are within easy access from the University; those which are situated at any distance are readily reached by the tramway service of the city. The period of hospital practice extends over the last three years of medical study. During the first two years of this period no student will be permitted to change his attendance from one general hospital to another except at the commencement of an academic term. It is a regulation of the school that not more than five of the six terms of these two years shall be spent at any single general hospital. During the final year of hospital practice a student is permitted to attend the practice of all the general hospitals without restriction. The regulations demand only that his attendance shall be regular and to the satisfaction of the hospital's board. There are a large number of appointments to house physicianships and surgeonships both at the general and special hospitals which are open to qualified students of the school. These appointments (20) in most cases carry salaries ranging from £60 to £100 per annum. Applications for further information regarding the Clinical School should be addressed to the Dean of the Faculty of Medicine.

*Fellowships and Scholarships.*—Fellowships, scholarships, and prizes of over £1000 are awarded annually. A Holt Fellowship in Pathology and Surgery of the value of £100 for one year is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the pathological department. A Holt Fellowship in Physiology, awarded under similar conditions of the value of £100 for one year. A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. A Johnston Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). A John W. Garrett International Fellowship in Physiology and Pathology (£100 a year, renewable). An Ethel Boyce Fellowship in Gynæcological Pathology (£100 a year, renewable). A Stopford Taylor Fellowship (£100 a year, renewable) in Dermatology. A Thelwall Thomas Fellowship (£100 a year, renewable) in Surgical Pathology. A further scholarship in Surgical Pathology (£50 per annum, renewable). Two Lyon Jones Scholarships of the value of £21 each for two years are awarded annually—a Junior Scholarship, open at the end of the first year of study to Liverpool University students, on the subjects of the First M.B. Examinations, and a Senior Scholarship, open to all students in the school at the end of the second or third year of study, on the subjects of Anatomy, Physiology, and Therapeutics. The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years. In 1907 the subject will be Clinical Medicine. The Torr Gold Medal in Anatomy, the George Holt medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases, and numerous Class Prizes are awarded annually.

*Entrance Scholarships.*—Two Robert Gee Entrance Scholarships of the value each of £25 per annum for two years are offered annually for competition. The holder is required to take out the Science Course for the University Degree in Medicine. Communications should be addressed to the Dean. Professor Benjamin Moore, The University, Liverpool.

*School of Tropical Medicine.*—The school is affiliated with the University of Liverpool and the Royal Southern Hospital of Liverpool. Three courses of instruction are given every year, commencing on Jan. 14th, May 1st, and Oct. 1st, and lasting for the academical term of about ten weeks. Each course consists (1) of a systematic series of lectures on Tropical Medicine and Sanitation delivered by the Professor of Tropical Medicine at the University; (2) of additional lectures on Cytology, Special African Diseases, and Special Indian Diseases, delivered at the University; (3) of systematic lectures and demonstrations on Tropical Pathology, Parasitology, and Bacteriology by the Walter Myers Lecturer at the University; (4) of similar instruction on Medical Entomology by the Lecturer on Economic Entomology at the University; and (5) of clinical lectures and demonstrations delivered at the Royal Southern Hospital by the Physician in charge of the Tropical Ward, the Professor, and the Walter Myers Lecturer. The instruction given occupies six hours a day for five days a week during the term. Teaching under headings 3 and 4 above is delivered in the laboratory of the school at the University, which contains accommodation for 30 students, with all necessary appurtenances, including a well-equipped museum, a class library, and access to the general departmental library. Teaching under heading 5 is given in the tropical ward and the attached clinical laboratories of the Royal Southern Hospital on two or three afternoons a week. At the end of each term an examination is held by the University for its diploma of Tropical Medicine (D.T.M.), which is open only to those who have been through the course of instruction of the school. The examinations lasts three days and consists (1) of three papers on Tropical Medicine, Tropical Pathology, and Tropical Sanitation and Entomology respectively; (2) of a clinical examination; and (3) of an oral examination. The results are declared as soon as possible afterwards. Those who do not wish to undertake the examination are given a certificate of attendance if their attendance has been satisfactory. Accommodation for a limited number of students may be had at the Hall of Residence (for terms apply to the Warden, 44, Upper Parliament-street). The fee for the full course of instruction is 10 guineas, with an extra charge of 10*s.* for the use of a microscope if required. The fee for the examination is 5 guineas. Applications should be made to the Dean of the Medical Faculty, University of Liverpool, from whom prospectuses may be obtained. Two University Fellowships of £100 a year each are open to students of the school, amongst others. Accommodation for research work is to be had both at the University Laboratory of the school and at its Research Laboratories at Runcorn (16 miles distant from Liverpool). Since it was instituted nine years ago the school has employed 25 different investigators paid out of its funds and has despatched to the tropics 17 scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in 21 special memoirs with many plates and figures, besides text-books and numerous articles in the scientific press. From the beginning of this year, however, the memoirs have been succeeded by the "Annals of Tropical Medicine and Parasitology," published by the Committee and open to outside contributors (apply to the Secretary, B 10, Exchange-buildings, Liverpool). The Mary Kingsley Medal is awarded by the school for distinguished work in connexion with Tropical Medicine, and has been given to Colonel Bruce, Professor Koch, Dr. Laveran, and Sir Patrick Manson.

*The Liverpool Clinical School of Medicine* consists, as we have already said, of four general hospitals and five special hospitals, which in the aggregate contain 1127 beds. The former are the Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, and the Stanley Hospital. The latter are the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children, St. Paul's Eye and Ear Hospital, and St. George's Hospital for Skin Diseases.

*School of Veterinary Medicine.*—A school of Veterinary Medicine in connexion with the University was opened in October, 1904; full courses of instruction for the Veterinary Curriculum will be provided and students will be prepared for the M.R.C.V.S. A diploma in Veterinary Hygiene is now granted by the University.

*Public Health Department.*—This is located in a separate building known as Ashton Hall in which full courses of instruction are given to D.P.H. students for the D.P.H. of the University.

*Special Diplomas.*—The University has instituted diplomas in Anatomy, Bacteriology, Bio-chemistry, and Parasitology. A special course of study of three terms' duration is required in the subject chosen for the diploma and allied subjects.

*School of Pharmacy.*—Complete courses of instruction are provided adapted to the requirements of candidates preparing for either the Minor or Major Examinations of the Pharmaceutical Society of Great Britain.

Prospectuses and further information may be had on application to the Dean of the Faculty of Medicine, University of Liverpool.

*Royal Infirmary Staff.*—Consulting Physicians: Dr. A. T. H. Waters, Dr. T. R. Glynn, and Dr R. Caton. Physicians: Sir James Barr, M.D., Dr. T. R. Bradshaw, and Dr. J. H. Abram. Assistant Physicians: Dr. R. J. M. Buchanan and Dr. E. Glynn. Consulting Surgeon: Mr. E. E. Bickersteth. Surgeons: Mr. R. Parker, Mr. F. T. Paul, and Mr. G. G. Hamilton. Assistant Surgeons: Mr. R. A. Bickersteth, Mr. W. T. Thomas, and Mr. T. C. Littler-Jones. Gynæcological Surgeon: Mr. T. B. Grimsdale. Assistant Gynæcological Surgeon: Mr. W. B. Bell. Ophthalmic Surgeon: Mr. T. H. Bickerton. Surgeon to the Throat Department: Mr. J. M. Hunt. Physician to the Skin Department: Dr. L. Roberts. Dental Surgeon: Mr. E. J. M. Phillips. Pathologists: Sir R. W. Boyce and Dr. E. Glynn. Anæsthetists: Mr. W. Fingland, Mr. F. W. Bailey, Mr. H. Armstrong, and Mr. A. J. O'Leary.

*David Lewis Northern Hospital Staff.*—Physicians: Dr. T. Bushby and Dr. W. T. Warrington. Consulting Surgeons: Mr. W. M. Campbell and Mr. C. Puzey. Surgeons: Mr. D. Harrison, Mr. R. Murray, and Mr. K. W. Monsarrat. Consulting Ophthalmic Surgeon: Mr. G. E. Walker. Radiologist: Dr. J. N. Walker. Surgeon to the Orthopædic Department: Mr. E. Broad. Dental Surgeon: Mr. W. Matthews. Pathologist: Dr. J. Owen. Bacteriologist: Dr. C. A. Hill. Anæsthetists: Mr. G. B. Robinson, Mr. R. Stevenson, and Mr. V. C. de Boinville.

*Royal Southern Hospital Staff.*—Consulting Physicians: Dr. J. Cameron and Dr. W. Williams. Consulting Surgeon: Mr. R. Hamilton. Physicians: Dr. W. Carter, Dr. J. W. MacAllister, and Dr. J. L. Roberts. Surgeons: Mr. W. Alexander, Mr. R. Jones, and Mr. G. P. Newbolt. Physician to the Skin Department: Dr. F. H. Barendt. Consulting Ophthalmic Surgeon: Mr. R. Williams. Consulting Aural Surgeon: Mr. G. C. Lee. Consulting Physician for Tropical Diseases: Dr. R. Ross. Consulting Surgeon to the Throat Department: Mr. W. Permewan. Radiologist: Dr. D. Morgan. Dental Surgeon: Mr. J. Royston. Anæsthetists: Mr. A. J. Evans, Mr. D. M. Alexander, and Mr. F. M. Gardner-Medwin.

*Stanley Hospital Staff.*—Consulting Physician: Dr. R. J. Richardson. Consulting Surgeons: Mr. J. Bark and Mr. K. A. Grossmann. Physicians: Dr. W. Whitford, Dr. A. G. Gullan, and Dr. J. Hay. Surgeons: Mr. F. C. Larkin and Mr. D. Douglas-Crawford. Ophthalmic Physician: Dr. R. J. Hamilton. Laryngologist: Mr. J. Bark. Assistant Laryngologist: Mr. J. E. McDougall. Physician for Skin Diseases: Dr. W. Whitford. Dentist: Mr. J. H. Burroughs.

---

The University of Birmingham: Medical Faculty.—The medical students of the University receive their clinical instruction by attending the amalgamated practice of the General Hospital and the Queen's Hospital, details of which follow. The students can be members of the University Club, the University Athletic Club, and the University Volunteer Company, while they possess a guild—the Guild of Undergraduates—which is designed to be a recognised medium of communication between the teachers and the taught. The University Medical Society and the Dental Students' Society also offer opportunities of coöperation for mutual benefit. The scholarships and prizes are tabulated in another column.

The clinical instruction of the Birmingham medical students is carried on under the direction of the Birmingham Clinical Board. The hospitals present an excellent field for clinical work, possessing more than 450 beds, treating annually 8000 in-patients and 80,000 out-patients. The students spend part of their curriculum in each hospital, and thus have every opportunity of acquiring a varied, full, and practical knowledge of their professional work. The curriculum is adapted in the first place to meet the needs of the students of the University of Birmingham, but it is also well adapted to the requirements of students preparing for the examinations of all other universities and licensing bodies. At the General Hospital there are open to the students the following appointments: A resident medical officer, elected annually (£70); a resident surgical officer, elected annually and eligible for re-election for three years (£100); a resident pathologist, elected for six months (£50); three house physicians and four house surgeons hold office for six months, receiving board, residence, and salaries at the rate of £50 a year; one house surgeon to the gynæcological, ophthalmic, and aural departments is elected every six months, receiving board, residence, and a salary of £50 a year; two assistant house surgeons are elected every three months, receiving board, residence, and salaries at the rate of £40 a year; a resident medical officer at the Jaffray Hospital, who is elected annually but is eligible for re-election, and who receives £150 a year; and a resident medical assistant at this hospital, who is not necessarily qualified, is provided with board and residence, and holds office for three months. At the Queen's Hospital there are open to the student the following appointments: Three house physicians, three house surgeons, and one obstetric and ophthalmic house surgeon, who hold office for six months and have salaries at the rate of £50 a year. Thirty-five other appointments of varying value are at the City Workhouse and Workhouse Infirmary, at the Birmingham General and Branch Dispensaries. at the Birmingham Lunatic Asylums, at the City Fever Hospitals, at the Children's Hospital, at the Birmingham and Midland Eye Hospital, at the Orthopædic and Spinal Hospital, and at the Ear and Throat Hospital.

The General Hospital contains 342 beds, and of these 327 are in daily use, upwards of 5000 in-patients passing through the wards in the course of a year. There are special wards for children, for gynæcological cases, and for septic and infectious cases, and in addition special beds reserved for eye and ear cases. Some 60,000 out-patients are treated there annually. The post-mortem department is in a separate building. It consists of a mortuary with a small chapel, a post-mortem room proper, and laboratories for bacteriology and morbid histology. In addition there are separate rooms in the main building, adjoining the various medical and surgical wards, for clinical pathology and these are under the direction of special officers. There are four operating theatres, all designed and fitted on the most modern lines. In connexion with the hospital is the Jaffray Suburban Hospital of 52 beds at Gravelly Hill. The arrangements for clinical teaching at this hospital are very thorough. In addition to the clinical teaching given in the wards and out-patient department by the honorary staff medical and tutorial classes are held for senior and junior students, while clinical instruction is given in all the special departments by the gentlemen in charge of them.

*Staff of General Hospital.*—Consulting Physicians: Sir Walter Foster and Dr. Edwin Rickards. Consulting Obstetric Officer:

Dr. Edward Malins. Physicians: Dr. Robert Saundby, Dr. Robert M. Simon, Dr. T. Stacey Wilson, and Dr. T. Sydney Short. Surgeons: Sir Thomas F. Chavasse, Mr. Gilbert Barling, Mr. William F. Haslam, and Dr. George Heaton. Obstetric Physician: Dr. Thomas Wilson. Ophthalmic Surgeon: Dr. D. C. Lloyd-Owen. Aural Surgeon and Laryngologist: Dr. F. W. Foxcroft. Physician in Charge of Skin Department; Dr. A. Douglas Heath. Assistant Physicians: Dr. James W. Russell and Dr. A. Stanley Barnes. Assistant Surgeons: Mr. Albert Lucas and Mr. Leonard P. Gamgee. Assistant Obstetric Physician: Dr. John T. Hewetson. Casualty Assistant Physicians: Dr. William H. Wynn and Dr. J. E. Sawyer. Visiting Pathologist: Dr. James Miller. Anæsthetists: Dr. Sydney Haynes and Dr. W. J. McCardie. Casualty Assistant Surgeons: Mr. F. Victor Milward and Mr. Frank Barnes. Surgical Photographer and Radiographer: Mr. J. Hall Edwards. Dental Surgeon: Mr. A. T. Hilder.

At the Queen's Hospital similar arrangements for clinical teaching are made, and the material here also is excellent, though the institution is, of course, much smaller. Ward and tutorial classes are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons.

*Staff of Queen's Hospital.*—Consulting Physicians: Sir James Sawyer, Dr. C. W. Suckling, and Dr. A. H. Carter. Consulting Surgeons: Mr. Furneaux Jordan, Mr. Frank Marsh, Mr. J. St. S. Wilders, and Mr. Bennett May. Consulting Ophthalmic Surgeon: Mr. Priestley Smith. Physicians: Dr. Arthur Foxwell, Dr. O. J. Kauffmann, and Dr. J. Douglas Stanley. Surgeons: Mr. Jordan Lloyd, Mr. J. T. J. Morrison, and Mr. C. A. Leedham-Green. Ophthalmic Surgeon: Mr. Wilfrid Allport. Obstetric Physician: Dr. C. E. Purslow. Physicians for Out-patients: Dr. Joseph George Emanuel and Dr. L. G. J. Mackey. Surgeons for Out-patients: Mr. W. Billington and Mr. A. W. Nuthall. Pathologist: Dr. L. G. J. Mackey.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Honorary Consulting Physician: Dr. R. Saundby. Honorary Consulting Surgeon: Mr. D. C. Lloyd-Owen. Surgeons: Mr. H. Eales, Mr. E. W. Wood-White, and Mr. J. Jameson Evans. Dental Surgeon: W. T. Madin, L.D.S. Anæsthetist: Dr. S. W. Haynes. This hospital possesses 105 beds, and there is an average daily attendance of out-patients of 213. This institution is recognised by Universities and the Royal College of Surgeons, England, and Royal College of Physicians, London, as an ophthalmic hospital at which clinical instruction in ophthalmology may be received. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations.

THE SCHOOL OF MEDICINE: MEDICAL FACULTY OF THE UNIVERSITY OF LEEDS.—The Leeds General Infirmary, in connexion with this medical faculty, has accommodation for 524 in-patients, including 96 beds at "semi-convalescent" homes in the country. During the last year 6445 in-patients and 38,660 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical lectures are given in Medicine and Surgery by the Physicians and Surgeons. There are Medical, Surgical, Ophthalmic, Aural, Electrical, Finsen Light, and X-ray Departments, in each of which special instruction is imparted to students. A Gynæcological and Extern Obstetric Department, together with Laryngeal and Skin Clinics, are in operation. The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, the Maternity Home, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds Students. Thirteen years ago the new buildings of the Medical School were opened. Placed closed to the Infirmary, the School of Medicine contains complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy are some of the most striking features of the buildings. Provision for the convenience of students, in the shape of a common room, a refectory, &c., are made. The classes in Systematic and Practical Chemistry, Physics, Botany, and Zoology, are held in the Science and Arts Department of the University, in College-road. Two Entrance Scholarships are offered: one, of the value of £73 2*s.* 6*d.*, covering admission to all requisite lectures; and the other, of the value of 40 guineas, covering the cost of admission to the medical and surgical practice of the infirmary. Several valuable prizes are given at the end of each session. The following appointments at the Infirmary are annually open to students (for some of them, however, a registered legal qualification is required): Non-resident: clinical pathologist, £200; senior anæsthetist, £50; 5 anæsthetists, £25. Resident: medical officer, £150; surgical officer, £150; casualty officer, £125; ophthalmic, £100. These appointments are made annually and holders are eligible for re-election. Resident medical officer to the Ida Hospital, for six months; honorarium £30. Six house physicians, for six months; 7 house surgeons, for six and 12 months; 24 physicians' clerks, for six months; 24 surgeons' dressers, for six months; 16 ophthalmic and aural surgeons' dressers, for three months; 12 gynæcological ward clerks, for three months: 16 gynæcological out-patient clerks, for three months; 24 maternity clerks, for one month; 24 assistant physicians' clerks, for three months; 8 dermatological clerks, for three months; 8 laryngological clerks, for three months; 24 assistant surgeons' dressers, for three months; 8 assistant ophthalmic surgeons' dressers, for three months; 24 dressers in the casualty-room, for three months; 24 post-mortem room clerks, for three months; 8 laboratory assistants, for three months. There are appointments open to students in other medical institutions in the town and also in the West Riding (Lunatic) Asylum.

*Staff of Leeds General Infirmary.*—Consulting Physicians: Dr. T. C. Allbutt, Dr. J. E. Eddison, and Dr. C. M. Chadwick. Physicians: Dr. T. Churton, Dr. A. G. Barr, and Dr. T. W. Griffith. Assistant Physicians: Dr. E. F. Trevelyan and Dr. W. H. M. Telling. Consulting Obstetric Physician: Dr. J. Braithwaite. Obstetric Physician: Dr. J. B. Hellier. Consulting Surgeon: Mr. C. G. Wheelhouse, Mr. T. P. Teale, Mr. T. R. Jessop, and Mr. A. W. M. Robson. Surgeons: Mr. E. Ward, Mr. W H. Brown, Mr. H. Littlewood, and Mr. R. L. Knaggs. Assistant Surgeons: Mr. B. G. A. Moynihan and Mr. W. Thompson. Consulting Surgeon to the Eye and Ear Department: Mr. J. A. Nunneley. Surgeons: Mr. H. S. Walker and Mr. A. L. Whitehead. Assistant Surgeon: Mr. G. C. Hayes. Consulting Dental Surgeon: Mr. T. S. Carter. Dental Surgeon: Mr. J. B. Horden. Anæsthetists: Mr. D. Seaton, Mr. W. C. Mayo, Mr. J. Nicholson, Mr. R. Hopton, Mr. H. Collinson, and Mr. C. Johnstone.

UNIVERSITY OF SHEFFIELD: FACULTY OF MEDICINE.—The new buildings of the University opened in 1905 are situated at the west end of the city, adjoining Weston Park, and the Medical department occupies the entire north wing of the University quadrangle. The University is within easy reach of the various hospitals with which it is connected for clinical purposes. These are as follows: The Royal Infirmary, containing 255 beds, with an annual average number of over 3800 in-patients, over 8000 out-patients, and over 21,000 casualties; the Royal Hospital, with 165 beds, and an annual number of 2500 in-patients, over 7000 out-patients, and over 14,000 casualties; and the Jessop Hospital for Diseases of Women, with 80 beds, nearly 500 in-patients, and over 2000 out-patients; also a Maternity department, with over 250 in-patients per annum and over 700 out-patient cases attended. Special courses on Fevers are held at the City Fever Hospitals (547 beds) and on Mental Diseases at the South Yorkshire Asylum (1610 beds). For purposes of clinical practice the practices of the Royal Infirmary and Royal Hospital are amalgamated, giving a total of 420 beds for the treatment of medical, surgical, and special cases. There are special departments for the treatment of Diseases of the Eye at such institution, with wards assigned to them. In addition to these the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for Diseases of the Throat, Ear, Skin, Orthopædics, and Mental Diseases. During the last year over 6000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 45,000. The medical and surgical staffs attend daily and give clinical instruction in the wards and out-patient rooms at stated times. Clinical lectures in Medicine and Surgery are given weekly at stated times. Instruction in the practical administration of anæsthetics is given at either institution by the Anæsthetists. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—which are in the University buildings are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work and the facilities for practical study in these subjects are second to none. The department of Pathology and Bacteriology in the University is replete with every requirement for the most advanced work in these subjects. There is a large Pathological Museum in the department open daily to students. The post-mortem rooms of the Royal Infirmary and Royal Hospital are under the charge of the Professor of Pathology and afford ample material for demonstrations. In connexion with the University there is a complete dental department, fully recognised by the various examining bodies, at the Sheffield Royal Hospital. A list of the various Scholarships and Fellowships will be found in another column.

Students who have passed their examination in anatomy and physiology can hold the usual dresserships and clerkships, the appointments being for a period of three months except in the case of casualty dresserships, which last two months. All students beginning hospital practice in Sheffield will be required to hold the post of casualty dresser before being eligible for any other of the above appointments. In addition to the laboratories above mentioned the Medical department of the University contains lecture rooms for the various subjects of the curriculum, a complete materia medica museum, and the large library and reading-room of the Medico-Chirurgical Society which is open daily to students for purposes of study.

*Fees.*—Composition fee of £80, payable in three instalments—viz., £24 at commencement or first year of study, £28 at commencement of second year of study, and £28 at commencement of third year of study. A composition fee of £80 entitles the student to attendance on all the courses of lectures and practical classes except pharmacy, vaccination, and instruction in anæsthetics required for a degree course in the University or for the ordinary qualifications in medicine and surgery of the Examining Boards. The composition fee does not include medical and surgical hospital practice, clinical lectures, practical instruction in mental diseases, diseases of women, and infectious diseases, the fee for the full period of both medical and surgical hospital practice required by the Examining Boards being £36 15*s.* if paid in one sum at commencement of hospital practice; or £37 16*s.* if paid in two sums of £18 18*s.*, one on beginning hospital practice the other twelve months later.

The various athletic and other students' societies are under the management of a students' representative council, elected annually. There are large and comfortable common rooms both for men and women students. A refectory is open daily at the University where students may obtain refreshments, lunch, dinner, &c., at extremely moderate prices. The University journal *Floreamus*, edited by a committee of staff and students, is published each term. The St. Peter's Hostel, Ashgate-road, is recognised by the Senate as a residence for women students, full particulars of which may be obtained of the Lady Tutor. Other societies of interest to the medical student are the Biological, Chemical, and Clinical and Pathological Societies.

*Staff of the Sheffield Royal Infirmary.*—Physicians: Dr. W. Dyson, B.A., Dr. W. S. Porter, and Dr. W. Tusting Cocking. Surgeons: Mr. Sinclair White, Mr. Arthur Connell, and Mr. Archibald Cuff. Ophthalmic Surgeon: Mr. Simeon Snell. Medical Officer to the Skin Department: Dr. W. Tusting Cocking. Medical Officer to the Ear and Throat Department: Mr. W. S. Kerr. Pathologist: Professor J. M. Beattie. Medical Officer in Charge of Electrical Department: Dr. A. Rupert Hallam. Anæsthetists: Mr. H. T. Wightman, Mr. J. Wilfred Stokes, and Dr. A. Rupert Hallam. Honorary Secretary to the Medical and Surgical Staff: Mr. Arthur Connell.

*Staff of the Sheffield Royal Hospital.*—Physicians: Dr. Duncan Burgess and Dr. Arthur Hall. Surgeons: Mr. R. J. Pye-Smith, Mr. H Lockwood, and Mr. G. Wilkinson. Ophthalmic Surgeon: Dr. S. Riseley. Physician for Mental Diseases: Mr. G. E. Mould. Assistant Surgeon: Mr. G. Simpson. Assistant Physicians for Outpatients: Dr. A. E. Naish and Dr. A. Young. Anæsthetists: Mr. H. Hallam, Mr. N. Milner, and Dr. G. Murray. Medical Officer to the Electrical and X Ray Department: Dr. W. H. Nutt. Pathologist: Professor J. M. Beattie. Honorary Secretary to the Medical and Surgical Staff: Dr. S. Riseley. Dental Surgeons: Mr. C. Stokes, Mr. F. G. Mordaunt, Mr F. Harrison, Mr. D. Dathl Davies, and Mr. H. J. Morris. Assistant Dental Surgeons: Mr. C. C. Drabble, Mr. H. J. Stoner, Mr. P. Southwell Stokes, and Mr. W. J. Law.

There are other institutions at which the students of the University of Sheffield can receive clinical instruction. These are the City Fever Hospitals (Medical Superintendent, Dr. Egerton H. Williams), the South Yorkshire Asylum (Medical Superintendent, Dr. W. S. Kay), and the Jessop Hospital for Women, Gell-street, Sheffield. The hospital contains 54 beds for gynæcological cases and 18 for obstetric cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. A 12 weeks' course of instruction (theoretical and practical) is also provided for resident and non-resident pupil midwives, the institution being approved by the Central Midwives Board as a training centre. Medical Officers: Mr. Richard Favell, Dr. J. W. Martin, and Mr. Percival E. Barber. Assistant Medical Officer: Mr. M. H. Phillips. Honorary Secretary to the Staff: Mr. Percival E. Barber.

---

## OTHER PROVINCIAL MEDICAL SCHOOLS.

THE institutions which follow provide facilities for different forms of clinical instruction for the medical student or medical graduate. For the most part they are the general hospitals of large towns which are not, at any rate, yet the seat of a university. There are university colleges at Bristol and at Cardiff, and at both cities the Schools of Medicine are able to supply a complete curriculum. The students, however, must go elsewhere for degrees or diplomas.

UNIVERSITY COLLEGE, BRISTOL: FACULTY OF MEDICINE.—Extensive additions have been made to the Anatomical, Bacteriological, and Pathological Departments. Students of the College are admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all students, men and women alike. The Infirmary and the Hospital comprise between them a total of 470 beds; and both have very extensive out-patient departments, special departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large out-door Maternity Departments and Dental Departments. Students may also attend the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is 614. Very exceptional facilities are thus offered to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment. The annual prize distribution will take place at the hand of Professor Francis Gotch, F.R.S., of Oxford, on Oct. 1st.

*Courses of Lectures.*—Medicine: Professor F. H. Edgeworth and Professor J. Michell Clarke. Surgery: Professor C. A. Morton and Professor James Swain. Anatomy: Professor Edward Fawcett. Practical Anatomy: Demonstrators, Dr. E. W. Hey Groves and Dr. W. S. Vernon Stock. Physiology and Histology: Professor A. F. Stanley Kent. Demonstrator: Dr. Fortescue-Brickdale. Chemistry: Professor Francis Francis. Public Health: Dr. D. S. Davies. Midwifery: Professor W. C. Swayne. Medical Jurisprudence: Dr. R. Eager and Dr. G. Parker. Pathology and Morbid Anatomy: Professor I. Walker Hall. Demonstrator: Dr. Carey F. Coombs. Operative Surgery: Mr. J. Paul Bush. Practical Medicine: Professor Edgeworth and Professor Michell Clarke. Practical Surgery: Dr. R. G. Poole Lansdown. Practical Midwifery: Mr. D. C. Rayner. Materia Medica and Practical Pharmacy: Mr. O. C. M. Davis. Pharmacology and Therapeutics: Dr. Newman Neild. Biology: Professor S. H. Reynolds. Practical Chemistry:

Professor Francis Francis. Practical Bacteriology: Professor A. F. Stanley Kent. Comparative Anatomy: Professor C. Lloyd Morgan. Dental Anatomy and Physiology and Dental Histology: Mr. E. A. G. Dowling. Dental Bacteriology: Professor I. Walker Hall. Dental Surgery and Practical Dental Surgery: Mr. W. R. Ackland. Dental Mechanics and Dental Metallurgy and Practical Dental Metallurgy: Dr. C. A. Hayman. Composition fee for lectures and hospital practice, 133 guineas. Composition fee for Dental lectures and surgical practice, 75 guineas; for two years' instruction in Mechanical Dentistry, 75 guineas; if whole curriculum be taken the composition fee is 140 guineas. Special six months' course for Diploma in Public Health. 1. Lectures on Public Health: Dr. D. S. Davies. 2. Bacteriology: Professor A. F. Stanley Kent. 3. Laboratory Course of Hygienic Chemistry: Mr. F. W. Stoddart. 4. Demonstrations on the Various Acts, Orders, By-laws, &c.: Mr. J. C. Heaven. 5. Practical Outdoor Sanitary Work: Dr. D. S. Davies. Fee for the entire course 25 guineas. The prizes and scholarships in connexion with the Bristol Medical School will be found on p. 637. Full information can be obtained on application to the Dean, Professor Edward Fawcett, University College, Bristol.

Professors—Chemistry: F. Francis, D.Sc. Experimental Physics: A. P. Chattock. Zoology: S. H. Reynolds, M.A. Psychology: C. Lloyd Morgan, LL.D., F.R.S. Medicine: F. H. Edgeworth, M.B., and J. Michell Clarke, M.D. Surgery: C. A. Morton, F.R.C.S., and J. Swain, F.R.C.S. Anatomy: E. Fawcett, M.D. Physiology and Histology: A. F. Stanley Kent, M.A. Midwifery: W. C. Swayne, M.D. Pathology: I. Walker Hall.

THE ROYAL INFIRMARY, Bristol, has 270 beds, the number of in-patients is 4000, and the number of out-patients 45,000 annually. There are separate wards for diseases of children, eye cases, diseases of women, and diseases of throat and nose. The Pathological and Bacteriological Departments have been newly equipped and are under the direction of the pathologist. In clinical pathology a special room is set apart for the exclusive use of students and research workers, and post-graduate courses may be taken over by arrangement with the pathologist. The Dental Department has been entirely re-organised. In the Pharmaceutical Department special classes are held by the pharmacist. Clinical appointments: All students must undergo before holding Clinical appointments preliminary instruction for three months in pathological, medical, surgical, and dental methods of diagnosis, &c. Pathological Clerkship for three months. Surgical Dresser for six months: the dressers reside in the Infirmary free of expense in rotation a week at a time, taking a part in the whole daily routine of surgical work. Medical Clerk for six months; Obstetric Clerk for three months; Ophthalmic Clerk for three months. In other special departments attendance is made during the fifth year of study. A convenient students' room is provided. Resident appointments: The posts of House Surgeon, House Physician, Resident Obstetric Officer, Junior House Surgeon, and Casualty Officer are all salaried. The two senior posts are usually held for one, two, or more years, the obstetric post is held for 12 months, and the two junior posts are tenable for six months each. Honorary and Consulting Physicians: Dr. W. H. Spencer, Dr. R. Shingleton Smith, and Dr. H. Waldo. Honorary and Consulting Surgeons: Mr. E. C. Board, Mr. W. H. Harsant, and Mr. A. W. Prichard. Honorary and Consulting Ophthalmic Surgeon: Mr. F. Richardson Cross. Honorary Physicians: Dr. J. E. Shaw, Dr. A. B. Prowse, Dr. P. Watson Williams, and Dr. F. H. Edgeworth. Honorary Surgeons: Mr. J. Paul Bush, Mr. G. Munro Smith, Dr. J. Swain, and Mr. T. Carwardine. Honorary Ophthalmic Surgeon: Dr. Ogilvy. Honorary Obstetric Physician: Dr. Walter Swayne. Honorary Dental Surgeon: Mr. W. R. Ackland. Honorary Assistant Dental Surgeon: Dr. Charles A. Hayman. Honorary Assistant Physicians: Dr. J. R. Charles and Dr. J. A. Nixon. Honorary Assistant Surgeons: Mr. H. F. Mole and Mr. E. H. E. Stack. Pathologist: Dr. I. Walker Hall. Honorary Demonstrator of Morbid Anatomy: Dr. J. J. S. Lucas. Honorary Anæsthetist: Mr. A. L. Fleming. Honorary Assistant Anæsthetist: Mr. S. V. Stock. Honorary Skiagraphist: Mr. James Taylor. House Surgeon and Senior Resident Medical Officer: Dr. A. Rendle Short.

BRISTOL GENERAL HOSPITAL.—Number of beds 200; number of in-patients over 2000; number of out-patients about 40,000 annually. The arrangements are practically similar to those at the Royal Infirmary. Honorary and Consulting Physician: Dr. A. J. Harrison. Honorary and Consulting Surgeons: Mr. Robert W. Coe, Dr. George F. Atchley, Mr. Nelson C. Dobson, Mr. F. Poole Lansdown, and Mr. Chas. F. Pickering. Physicians: Dr. J. Michell Clarke, Dr. George Parker, and Dr. J. O. Symes. Surgeons: Mr. C. A. Morton, Dr. R. G. Poole Lansdown, Dr. J. Lacy Firth, and Dr. H. Greville Kyle. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to Department for Diseases of the Skin: Dr. W. Kenneth Wills. Surgeon to the Throat and Nose: Dr. J. Lacy Firth. Ophthalmic Surgeon: Mr. Cyril H. Walker. Assistant Physicians: Dr. Newman Neild and Dr. Carey F. Coombs. Assistant Surgeon: Mr. E. W. H. Groves. Assistant Physician Accoucheur: Mr. D. C. Rayner. Anæsthetists: Mr. J. Freeman and Mr. Hedley Hill. Dental Surgeon: Mr. T. Taylor Genge. Pathologists: Dr. J. Michell Clarke and Dr. Newman Neild. Curator of Museum: Dr. Coombs. Bacteriologist: Dr. J. O. Symes. Skiagraphist: Mr. J. Ellington Jones.

*Resident Appointments.*—There are five resident appointments in the Hospital, and the Dressers reside in rotation, free of expense. The Maternity students also have rooms provided in the institutions.

*Fees.*—Medical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Surgical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Medical and Surgical Practice together in one payment: six months, 12 guineas; one year, 20 guineas; perpetual, 35 guineas. Dental Surgical Practice: one year, 7 guineas; perpetual, 12 guineas. The above fees include Clinical Lectures. Clinical Clerkship: 5 guineas for six months. Dressership: 5 guineas for six months. Museum fee: 3 guineas (composition on entrance), or 1 guinea annually. Dispensing Fee: 2 guineas. Students from other schools or qualified medical men wishing to attend Clinical Practice for short periods and not requiring certificates for such attendance may do so for the following fees:—Medical and Surgical Practice conjointly: one month, 2 guineas; two months, 3 guineas; three months, 4 guineas; and six months, 7 guineas.

Further information may be obtained on application to the Dean of the Faculty.

---

UNIVERSITY OF WALES: MEDICAL FACULTY.—Under the heading of the University of Wales we have already mentioned that that University does not yet possess the privilege of granting degrees in medicine. Welsh medical students can attend the practice of the Cardiff Infirmary. This infirmary contains 178 beds. Consulting Physicians: Dr. W. T. Edwards, Dr. William Taylor, and Dr. C. T. Vachell. Consulting Surgeon: Dr. T. Wallace. Consulting Dental Surgeon: Mr. John C. Oliver. Physicians: Dr. H. R. Vachell and Dr. A. E. Taylor. Surgeons: Mr. P. Rhys Griffiths, Mr. William Sheen, and Mr. J. Lynn Thomas, C.B. Assistant Physicians: Dr. W. Mitchell Stevens, Dr. Cyril Lewis, and Dr. Alfred Howell. Assistant Surgeons: Mr. H. G. Cook, Mr. Cornelius A. Griffiths, and Mr. William Martin. Ear, Throat, and Nose Surgeon: Dr. D. R. Paterson. Consulting Ophthalmic Surgeon: Mr. J. T. Thompson. Ophthalmic Surgeon: Mr. H. C. Ensor. Assistant Ophthalmic Surgeons: Mr. F. P. S. Cresswell and Mr. R. Russell Thomas. Gynæcologists: Dr. Ewen J. Maclean and Dr. E. Tenison Collins. Pathologist: Dr. W. Mitchell Stevens. Bacteriologist and Assistant Pathologist: Dr. H. A. Schölberg. Sanitary Adviser: Dr. E. Walford. Anæsthetists: Dr. Fredk. W. S. Davies, Dr. W. G. Williams, and Dr. Alex. Brownlee. Dental Surgeons: Mr. T. W. Kittow and Mr. Thomas Quinlan. Resident Medical Officer: Dr. W. R. Spencer Watkins.

---

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—There are 230 beds. It is recognised by the University of London, the Royal Colleges of Physicians and Surgeons, and other examining boards. The in-patients number 2550; the out-patients 19,985. Special departments for Children, Gynæcology, Ear, Throat, and Nose Diseases, Electro-therapeutic and X Ray departments. There is an excellent library. The resident officers are a senior house physician, senior house surgeon, house physician, and house surgeon. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3*s.* a quarter, £10 10*s.* the first year, and £5 5*s.* subsequent years. A course of Practical Pharmacy is given by the dispenser. Fee £3 3*s.* for three months. Applications should be made to the Secretary of the Medical Committee.

*Staff.*—Consulting Physician: Dr. W. Millington. Consulting Surgeon. Physicians: Dr. H. Malet and Dr. C. A. MacMunn. Surgeons: Mr. J. O'B. Kough, Mr. W. H. T. Winter, Mr. E. Deanesly, and Mr. A. H. Hunt. Assistant Physician: Dr. J. A. Codd. Assistant Surgeons: Mr. W. F. Cholmeley and Mr. H. Dent.

NORFOLK AND NORWICH HOSPITAL (220 beds).—Non-resident pupils admitted. Fees: For three months, £3 3*s.*; for six months, £5 5*s.*; as permanent pupil, £8 8*s.* Consulting Physician: Sir P. Eade. Consulting Surgeons: Dr. Beverley, Mr. H. S. Robinson, and Mr. C. Williams. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. S. H. Burton, Mr. D. D. Day, and Mr. H. A. Ballance. Assistant Physician: Dr. A. J. Cleveland. Assistant Surgeons: Mr. T. H. Morse and Mr. E. W. Everett. Dental Surgeon: Mr. H. F. White. Electro-Therapeutist: Dr. A. J. Cleveland. Secretary: Mr. F. G. Hazell.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Medical and Surgical Staff: Consulting Physician: Dr. Drake. Physicians: Dr. H. Davy and Dr. William Gordon. Surgeons: Mr. J. D. Harris, Mr. E. J. Domville, Mr. Charles E. Bell, and Mr. A. C. Roper. Medical Registrar and Pathologist: Mr. Reginald V Solly. Surgeon Dentist: Mr. J. M. Ackland. Anæsthetists: Mr. Henry Andrew and Mr. Brennan Dyball. The hospital contains 200 beds (including special children's wards) and has a good library, museum, dissecting room, and post-mortem room. Attendance on the practice of this hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery on application to the House Surgeon. There is also a Private Nursing Staff attached to the hospital. For particulars as to fees, &c., apply to the Matron. A new wing was added in 1897. Arrangements may be made by which gentlemen in practice desiring to increase their qualifications may have the use of the museum and library and other facilities and by which students may attend midwifery. A new Operating Theatre was opened in 1906 (the gift of Mrs. Nosworthy of Newlands, Dawlish, Devon). An Electrical Treatment Department (the gift of Mrs. M. A. Sanders) was opened in 1907 by Lady Duckworth-King.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for over 200 patients, including Children's wards, special Ovarian wards, and a special department for the treatment of Diseases of the Eye. In-patients last year, 2420; out-patients, 13,937. The attendance of pupils at this infirmary is duly recognised by all the examining boards; and there are unusual facilities for acquiring a practical knowledge of the profession. Physicians: Dr. H. Nicholls and Dr. S. King Alcock. Surgeons: Dr. G. Stokes Hatton and Dr. Wheelton Hind. Assistant Physicians: Mr. John Russell and Dr. W. E. L. Horner. Assistant Surgeons: Mr. Reginald Alcock and Dr. W. C. Allardice. Ophthalmic Surgeon: Mr. Herbert H. Folker. Assistant Ophthalmic Surgeon: Mr. R. H. Dickson. Medical Officer in Charge of the Electrical Department: Dr. G. H. List. Dental Surgeon: Mr. A. Baines. Secretary and House Governor: Mr. Albert E. Boyce, F.C.I.S., F.L.A.A.

SUSSEX COUNTY HOSPITAL (190 beds).—During the year 1906, 1988 in-patients have been treated. The total number of out-patient attendances on the books during 1906 was 33,668. This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed clinical research and bacteriological department. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding 20 guineas, as the Committee of Management shall direct.

*Staff.*—Consulting Physicians: Dr. Rutter, Dr. Hollis, and Dr. Branfoot. Physicians: Dr. J. F. G. Dill, Dr. Hobhouse, and Dr. Maynard. Assistant Physicians: Dr. W Broadbent, Dr. Hall, and Dr. Bailey. Consulting Surgeons: Mr. H. P. Blaker and Mr. W. Furner. Surgeons: Mr. T. J. Verrall, Mr. R. F. Jowers, and Mr. F. J. Paley. Assistant Surgeons: Mr. A. Buck, Mr. T. H. Ionides, and Mr. W. A. Bowring.

NORTHAMPTON GENERAL HOSPITAL (established 1743; rebuilt 1793).—Two new wings were opened in 1904 and the old buildings entirely renovated and re-arranged. The number of beds is 166. Non-resident pupils are received and have every opportunity of acquiring a practical knowledge of their profession. The fee is £10 10*s.* Pupils can be received at any time.

LEICESTER INFIRMARY.—Instruction in the infirmary for first-year students is duly recognised by the various examining bodies. At the General Infirmary there are 158 beds and at the Children's Hospital in connexion 42; total 200. There are about 3000 in-patients annually and 30,000 out-patients and casualties. A new wing containing 100 beds is now in course of construction and will be opened by H.R.H. the Duchess of Argyll on Nov. 5th next. A new Nurses' Home is also about to be erected.

*Staff.*—Three Honorary Physicians, four Honorary Surgeons, two Assistant Honorary Physicians, and two Assistant Honorary Surgeons. Special departments: Ophthalmic and Ear and Throat. House Governor and Secretary, Harry Johnson.

THE ROYAL HOSPITAL, PORTSMOUTH (founded 1847).—The number of beds is 132. During the year 1906 there were 1453 in-patients and 12,764 out-patients. Honorary Physicians: Dr. John Phillips and Dr. C. C. Claremont. Surgeons: Dr. J. Ward Cousins and Mr. Henry Rundle, F.R.C.S. Honorary Anæsthetist: Dr. W. J. Essery. Honorary Assistant Physicians: Dr. W. P. McEldowney, Dr. J. T. Leon, and Dr. E. J. Davis Taylor. Honorary Assistant Surgeons: Mr. C. P. Childe, F.R.C.S., Mr. T. A. M. Forde, Mr. A. B. Wright, and Mr. L. Cole Baker. The hospital is a preparatory School of Medicine and Surgery; the attendance of pupils at this hospital is recognised by the Examining Boards. Particulars of the Secretary at the hospital.

KENT AND CANTERBURY GENERAL HOSPITAL.—The hospital contains 104 beds. Pupils of the staff are admitted to the practice of the hospital and have the use of the library of the East Kent and Canterbury Medical Society for £7 7*s.* Operation day, Thursday, 11 A.M. Physicians: Dr. Harold Wacher and Dr. M. T. Williams. Consulting Surgeons: Mr. James Reid and Mr. Frank Wacher. Surgeons: Dr. T. Whitehead Reid, Mr. J. Greasley, Mr. Sidney Wacher, and Mr. Z. Prentice. Dentist: Mr. R. S. N. Faro. Secretary: Mr. Arthur J. Lancaster. Over 700 in-patients, 2000 out-patients and casualties, and 400 dental cases are attended in a year.

WEST OF ENGLAND EYE INFIRMARY, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Mr. A. C. Roper and Mr. Ransom Pickard. Assistant Surgeon: Mr. Leonard R. Tosswill. Secretary: Mr. Sidney E. Whitton. The infirmary contains 64 beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1906, 2840.

## SCOTLAND.

### MEDICAL SCHOOLS WITH FULL CURRICULUM.[1]

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1200 students avail themselves each session of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards. A post-graduate vacation course commences on Sept. 2nd.

---

[1] For Scholarships see p. 638 et seq.

The anatomy rooms and laboratories will open on Tuesday, Oct. 1st. On Tuesday, Oct. 15th, the lectures will commence.

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school, in addition to the class of Practical Materia Medica and the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have held the office of clerk in their wards for at least six months. Six Residentships are appointed for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the governing board of the school call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Minto House, Nicolson-square, and the New School, Bristo-street.

*Lecturers and fees.*—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Dr. Ryland Whitaker (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Mr. King, Mr. Gemmell, and Dr. T. W. Drinkwater*; Physiology (Institutes of Medicine) Dr. Alex. Goodall; (£3 5*s.*); General Pathology, &c., Dr. Russell, Dr. Shennan, and Dr. Stuart McDonald (£3 5*s.*); Biology, Mr. Malcolm Laurie (£3 5*s.*); Zoology, Mr. Malcolm Laurie; Physics, Dr. Dawson Turner (£3 3*s.*); Bacteriology, Dr. Taylor Grant, Dr. Theodore Shennan, and Dr. Stuart McDonald; Practice of Physic, Dr. James, Dr. Bramwell, Dr. Gibson, Dr. Bruce, Dr. Philip, Dr. R. A. Fleming, Dr. Lovell Gulland, and Dr. Harry Rainy (£3 5*s.*); Surgery, Mr. Caird, Mr. Hodsdon, Mr. Thomson, Mr. Wallace, Mr. Miles, Mr. Scot Skirving, Mr. Dowden, and Mr. Chiene (£3 5*s.*); Materia Medica, &c., Dr. Craig† and Dr. F. D. Boyd (£3 5*s.*); Midwifery, &c., Dr. Hart, Dr. Haultain, Dr. Ballantyne, Dr. Fordyce, Dr. Elsie M. Inglis, and Dr. Campbell (£3 5*s.*); Medical Jurisprudence, &c., Dr. Aitchison Robertson (£3 5*s.*); Public Health, Dr. Aitchison Robertson and Dr. W. Robertson; Hospital Practice (Edinburgh Royal Infirmary): Physicians, Dr. James, Dr. Bramwell, Dr. Gibson, and Mr. Brewis for Gynæcology; Surgeons, Mr. Cotterill, Mr. Cathcart, and Mr. Caird (perpetual ticket, £12); Clinical Medicine, Dr. James, Dr. Byrom Bramwell, and Dr. Gibson £3 5*s.*); Clinical Surgery, Mr. Cotterill, Mr. Cathcart, and Mr. Caird (£3 5*s.*); Diseases of the Chest, Dr. Philip† and Dr. Lovell Gulland (£2 2*s.*); Vaccination, Dr. Buist† (£1 1*s.*); Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Diseases of the Eye, Dr. Sym,† and Dr. A. H. H. Sinclair (£2 2*s.*); Gynæcology, Dr. Haig Ferguson and Dr. Elsie M. Inglis (Systematic), Dr. Brewis and Dr. J. Haig Ferguson (Clinical), and Dr. Berry Hart (Advanced) (£2 2*s.*); Diseases of the Blood, Dr. G. Lovell Gulland; Neurology, Dr. J. J. Graham Brown (£2 2*s.*); Diseases of the Chest, Dr. Philip and Dr. Lovell Gulland (£2 2*s.*); Medical Electricity, Dr. Dawson Turner (£2 12*s.* 6*d.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*). Summer Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£2 2*s.*); Practical Physiology, Dr. Goodall (£3 3*s.*); Biology, Mr. M. Laurie‡ and Miss Newbigin (£3 3*s.*); Practical Chemistry and Analytical Chemistry, Mr. King, Mr. Gemmell, and Mr. Drinkwater§; Practical Bacteriology, Dr. Shennan, Dr. Taylor Grant, and Dr. Stuart McDonald; Materia Medica, Dr. Craig and Dr. F. D. Boyd; Diseases of the Eye, Dr. Sym and Dr. A. H. H. Sinclair (£2 2*s.*); Medical Psychology and Insanity, Sir J. Batty Tuke and Dr. Robertson (£2 2*s.*); Medical Jurisprudence, Dr. Aitchison Robertson; Public Health, Dr. Wm. Robertson (£2 2*s*); Gynæcology, Dr. Brewis and Dr. Ballantyne (£2 2*s.*); Midwifery, Dr. Ferguson, Dr. Ballantyne, Dr. Fordyce, Dr. Elsie M. Inglis, and Dr. Campbell (£3 5*s.*); Operative Surgery, Mr. Caird, Mr. Hodsdon, Mr. Alexis Thomson, Mr. David Wallace, Mr. Alex. Miles, and Mr. Dowden (£3 3*s.*); Practical Pathology, Dr. Russell, Dr. Shennan, and Dr. Stuart McDonald (£3 3*s.*); Physics, Dr. Turner‡ (£3 3*s.*); Practical Medicine and Physical Diagnosis, Dr. Philip, Dr. Fleming, and Dr. Lovell Gulland (£3 3*s.*); Practice of Medicine, Dr. James, Dr. Bramwell, and Dr. Gibson (£2 2*s.*); Vaccination, Dr. Buist (£1 1*s.*); Neurology, Dr. Bruce and Dr. Graham Brown; Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*); Medical Electricity, Dr. Dawson Turner.

Special Classes for Women, Winter Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£4 4*s.*); Chemistry (Lectures and Practical), Dr. T. W Drinkwater (£3 5*s.* and £3 3*s.*); Practice of Physic, Dr. Philip (£3 5*s.*); Surgery, Mr. J. W. Dowden (£3 5*s.*); General Pathology, Dr. Russell (£3 5*s.*); Physiology (Institutes of Medicine) —— (£3 5*s.*); Materia Medica, &c., Dr. Craig and Dr. F. D. Boyd (£3 5*s.*); Clinical Medicine, Dr. Alexander Bruce, Royal Infirmary (£3 5*s.*); Clinical Surgery, Mr. Caird, Royal Infirmary (£3 5*s.*); Physics, Dr. Dawson Turner (£3 3*s.*); Biology, Miss Newbigin (£3 3*s.*); Vaccination, Dr. Buist (£1 1*s.*); Practical Gynæcology, Dr. Brewis (£2 2*s.*); Diseases of the Eye, Dr. W. G. Sym; Bacteriology, Dr. J. Taylor Grant; Fevers, City Hospital. Summer Session: Practical Anatomy, Dr. Ryland Whitaker (£2 2*s.*); Practical Chemistry, Mr. J. Kerr (£3 3*s.*); Materia Medica, &c., Dr. Craig (£3 3*s.*); Operative Surgery and Surgical Anatomy, Mr. J. W. Dowden (£3 3*s.*); Materia Medica and Therapeutics, Dr. Wm. Craig (£3 3*s.*); Medical Jurisprudence and Public Health, Dr. Aitchison Robertson and Dr. C. J. Lewis (£3 5*s.*); Clinical Medicine, Dr. Alexander Bruce; Clinical Surgery, Mr. Caird, Royal Infirmary (£3 5*s.*); Practical Physiology and Histology, Dr. Goodall (£3 3*s.*); Practical Pathology, Dr. Russell (£3 3*s.*); Biology, Miss Newbigin (£3 3*s.*); Physics, Dr. Dawson Turner (£3 3*s.*); Ophthalmology, Dr. A. H. H. Sinclair (£2 2*s.*); Insanity, Sir J. Batty Tuke and Dr. G. M. Robertson (£2 2*s.*); Practical Gynæcology, Dr. Brewis (£2 2*s.*); Practical Medicine, Dr. Philip and Dr. G. Lovell Gulland; Vaccination, Dr. Buist; Tropical Diseases, Major Marshall; Medical Electricity. Dr. Dawson Turner.

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, payment of which is distributed over the period of study. There is no composition fee.

Further particulars regarding the school, also its calendar, may be had on application to Mr. R. N. Ramsay, the Secretary and Registrar, 27, Forrest-road, Edinburgh.

* Lectures, £3 5*s.*; Practical, £3 3*s.*; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3*s.*; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

ANDERSON'S COLLEGE MEDICAL SCHOOL, Dumbarton-road, Glasgow, W.—This medical school was founded in the year 1800. It has given 13 professors to the University of Glasgow. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy, Professor A. M. Buchanan;

Chemistry, Professor J. Robertson Watson; Physics, Professor Peter Bennett; Botany, Professor B. G. Cormack; Zoology, Professor Geo. Bell Todd; Physiology: Professor Robert Fullarton; Materia Medica, Professor John P. Duncan; Midwifery, Professor John Edgar; Surgery, Professor J. H. Nicoll; Practice of Medicine, Professor John Cowan; Ophthalmic Medicine and Surgery, Dr. T. Spence Meighan; Aural Surgery, Dr. J. Galbraith Connal; Diseases of Throat and Nose, Dr. John Macintyre; Public Health (Laboratory Course), Professor Carstairs C. Douglas. In summer: Anatomy, Practical Anatomy, and Osteology; Practical Chemistry; Botany and Practical Botany; Zoology and Practical Zoology; Practical Physiology; Practical Materia Medica and Pharmacy; Medical Jurisprudence and Hygiene (Professor Carstairs C. Douglas); Diseases of Women and Children (Professor Edgar); Operative Surgery; Ophthalmic Medicine and Surgery; Aural Surgery; Mental Diseases (Dr. John Carswell); and Public Health (Lecture Course). The Chemical Laboratory is open daily from 10 to 6. The Dissecting-room is open in winter from 9 A.M. to 6 P.M., and in summer from 6 A.M. to 6 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the Licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are conducted at the Glasgow Dental Hospital and School.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of it, and four minutes' walk of the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Botany, Practical Zoology, Practical Physiology, Practical Pharmacy, and Operative Surgery. There are also provided a large reading-room and students' recreation-room.

*Fees.*—For each course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, and Mental Diseases and Public Health excepted), first session, £2 2*s.*; second session (in Anderson's College), £1 1*s.*; afterwards free. For Practical Classes (except Anatomy, Operative Surgery, and Public Health)—viz., Chemistry, Botany, Zoology, Physiology, and Pharmacy—first session, £2 2*s.*; second session, £2 2*s.* Reduced fees for Lectures with Laboratory Work in Botany or in Zoology during same summer session, £3 3*s.*; for Lecture Class or Practical Class separately, in Botany or in Zoology, £2 2*s.* Anatomy Class Fees: Winter, first session (including Practical Anatomy), £4 4*s.*; second session (including Practical Anatomy), £4 4*s.*; third session, £2 2*s.* Summer, Lectures and Practical Anatomy, £2 12*s.* 6*d.*; Lectures alone, £1 11*s.* 6*d.*; Practical Anatomy alone, £1 11*s.* 6d.; Osteology and Practical Anatomy, £2 12*s.* 6*d.*; Osteology alone, £1 11*s.* 6*d.*; Operative Surgery, £2 12*s.* 6*d.* Second Course £2 2*s.* Joint fee for Classes of Systematic and Operative Surgery, £3 13*s.* 6*d.* Ophthalmic Medicine and Surgery (including Hospital Practice), Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, £1 1*s.* each course. Public Health Laboratory, six months, £11 11*s.*; with lectures, £12 12*s.* Matriculation Fees: For the year, 10*s.*; for one class in winter session alone, 5*s.*; for summer session alone, 5*s.*

*Western Infirmary.*—Fees: For Hospital Attendance, £10 10*s.*; afterwards free. For Clinical Instruction, winter, £3 3*s.*; summer, £2 2s. Pathology: systematic, £4 4*s.*; practical, £3 3*s.* Vaccination fee, £1 1*s.*

*Royal Infirmary.*—Fees: Hospital Practice and Clinical Instruction, first year, £10 10*s.*; second year, £10 10*s.*; afterwards free. Six months, £6 6*s.*; three months, £4 4*s.* Pathology, both courses, £4 4*s.* Vaccination Fee, £1 1s.

Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee.

*Maternity Hospital.*—Fee for six months, £3 3*s.*

*Royal Hospital for Sick Children.*—Fee for one year, £1 1*s.*

*Eye Infirmary.*—Fee: Hospital Practice and Clinical instruction, including Lectures at the College, six months, £1 1*s.*

*Lock Hospital.*—£1 1*s.*

*Fever Hospital, Belvidere or Ruchill.*—Fee, £1 1*s.*

*Hospital for Skin Diseases.*—Fee, £1 1*s.*

The Carnegie Trust extends its benefactions to students at Anderson's College Medical School. Full particulars may be obtained from Mr. W. S. McCormick, the Carnegie Trust Offices, Merchants' Hall, Edinburgh.

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. The courses of Laboratory Instruction and Lectures in Public Health are recognised by the Scottish Colleges; by the Royal College of Physicians and the Royal College of Surgeons, Ireland; and by the University of Cambridge. Communications relating to the Medical School to be addressed to the Secretary of the Medical Faculty, Anderson's College Medical School, Dumbarton-road, Partick, Glasgow. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Alexander Mackay, Educational Institute Office, 40, Princes-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, LL.D., Faculty Hall, 242, St. Vincent-street, Glasgow. Communications relating to the Dental School to be addressed to Mr. D. M. Alexander, 97, West Regent-street, Glasgow.

The Kerr Bursary in Anatomy (value about £10) is open to students of the Junior Anatomy Class during Winter Session 1907–1908.

The Winter Session will be opened on Thursday, Oct. 17th, 1907, and will be closed on Thursday, March 26th, 1908.

The Summer Session will be opened on Wednesday, April 22nd, 1908, and will be closed on Friday, July 3rd, 1908.

ST. MUNGO'S COLLEGE AND GLASGOW ROYAL INFIRMARY.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies new buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. Recent additions consist of Public Health, Practical Zoology, and Bacteriological Laboratories. A complete electric light installation has been added and a powerful Educational Lantern has been provided for demonstration purposes. The Royal Infirmary, which is at the service of the College for the purpose of clinical and practical instruction, is one of the largest hospitals in the kingdom. The winter session will open on Thursday, Oct. 17th.

*Psychological Medicine.*—Practical instruction is given in Woodilee Asylum, situated within a short distance of Glasgow and having accommodation for 850 patients. Six resident clinical clerks are appointed annually. These clerkships are open to students attending St. Mungo's College.

*Clinical Instruction in Fevers.*—Classes are conducted by Dr. Johnston, Superintendent, at the City of Glasgow Fever Hospital, Ruchill, and Dr. Brownlee, Superintendent, at the City of Glasgow Fever Hospital, Belvidere.

*Clinical Instruction in Midwifery.*—The close proximity of the Maternity Hospital enables the Professor of Midwifery to conduct frequent clinical demonstrations there during the summer session.

The classes in St. Mungo's College qualify for the English, Scotch, and Irish Conjoint Boards and, under certain conditions, for the various universities, including the University of London. Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction, age (16 years), and Preliminary Examination, are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The fee for each class is £2 2*s*., except Zoology and Botany, joint fee £3 3*s*., Anatomy, Winter Session, £4 4*s*., Pathology, £4 4*s*., Physics, £2 4*s*. 6*d*., Public Health Laboratory, £12 12*s*., and certain extra classes for which the fee is £1 1*s*. The hospital fee (including clinical lectures) is £21 for a perpetual ticket.

The classes in St. Mungo's College are now open to male and female students equally.

The minimum fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons amount to £65. Further particulars can be obtained from a syllabus which may be procured free on application to the Dean, 86, Castle-street, Glasgow.

---

GLASGOW WESTERN MEDICAL SCHOOL.—This School is situated in University-avenue, close to the University and Western Infirmary. Lectures and Demonstrations are given on Chemistry, on Physics, on Anatomy, on Surgery, on Physiology, on Midwifery and Gynæcology, on Pathology, on Medicine, and on the Eye. Some of the classes qualify for graduation and for Scotch diplomas.

*Class Fees.*—For each course of Lectures the fee is £2 2*s*., or in some cases £1 1*s*. There is no matriculation fee.

*Lecturers: Winter Session.*—Physics: Dr. Muirhead, Monday, Wednesday, and Friday, at 2 P.M.; Chemistry: Mr. Gregory, Tuesday and Thursday at 3 P.M.; Anatomy: Dr. Wright Thomson, Tuesday, Wednesday, and Friday, at 4.15 P.M.; Surgery: Dr. Edington, at 12 noon; Midwifery: Dr. Balfour Marshall, Monday, Wednesday, and Friday, at 2 P.M.; Medicine: Dr. McKenzie, at 11 A.M.; Pathology: Dr. Jubb, Monday, Tuesday, Thursday, and Friday, at 3 P.M.; The Eye: Dr. Fergus, Monday and Thursday, at 4 P.M.

*Summer Session.*—Physics: Dr. Muirhead, Monday, Wednesday, and Friday, at 2 P.M.; Chemistry: Mr. Gregory, Tuesday and Thursday, at 3 P.M.; Anatomy: Dr. Wright Thomson, Tuesday and Friday, at 3.15 P.M.; Operative Surgery: Dr. Edington, Tuesday, Wednesday, and Friday, at 1 P.M.; Gynæcology: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. McKenzie, at 8 A.M.; Pathology: Dr. Jubb, Monday, Tuesday, Thursday, and Friday, at 12 noon; Ophthalmology: Dr. Fergus, Monday and Thursday, at 11 A.M. and 3 P.M. Some of the above hours are liable to alteration.

---

QUEEN MARGARET COLLEGE, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its buildings, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the women's department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The number of students enrolled in session 1906–1907 was 579, of whom about 60 were studying medicine and the rest arts or science. The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish university, women students graduated in medicine at the "capping" in Glasgow University. 128 women have now taken the degree of M.B., C.M. or M.B., Ch.B. of the University of Glasgow. Excellent facilities for clinical work are given in the Royal Infirmary and other hospitals. By a gift of £5000 granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large building for the study of Anatomy and Physiology, which was opened in October, 1895. The Arthur Scholarship is open every third year to students of first year; other Bursaries are open in Arts and Medicine; and by an ordinance of the Universities Commissioners women are admitted to certain University bursaries, scholarships, and fellowships. A house of residence for the students of the College coming from a distance was opened by the Queen Margaret Hall Co., Limited, in October of 1894. The winter session commences on Oct. 17th.

*Lecturers (other than University Professors).*—Anatomy: Mr. T. H. Bryce. Chemistry: Mr. H. W. Bolam. Medicine: Dr. W. K. Hunter. Surgery: Mr. J. H. Pringle. Pathology: Dr. C. Workman. On the Eye: Dr. A. M. Ramsay.

---

UNIVERSITY COLLEGE, Dundee.—This College is one of the constituent colleges of the University of St. Andrews. In the new medical buildings there are spacious and well-equipped laboratories and work-rooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynæcology. The complete medical curriculum can be taken in Dundee. For classes, fees, &c., see under University of St. Andrews.

---

ROYAL INFIRMARY, Dundee.—The Infirmary contains 400 beds, including special wards for the Diseases of Women, Children, Eye, Ear and Throat, and Obstetric cases. There is in addition an Extern Obstetric Department. There were during last year 15,549 out-patients and 6411 home patients. The Royal Infirmary offers exceptional facilities for practical work to students. Appointments: Five qualified Resident Medical Assistants are appointed every six months and one non-resident. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological Department. There are in connexion with the clinical courses Tutorial Classes in Medicine and Surgery. Instruction is also given in Practical Pharmacy and Materia Medica and in Practical Dentistry. Further information can be obtained from Dr. Fraser, Medical Superintendent.

---

ROYAL and DISTRICT ASYLUMS, Dundee.[2]—Physician Superintendent: Dr. William Tuach-Mackenzie. Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrews), are given during the Summer Session at University College and at the Royal and District Asylums by Dr. Tuach Mackenzie. The course consists of 12 Lectures and 14 Clinical Lectures and Demonstrations. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants. Senior Medical Assistant: Dr. H. C. Martin. Junior Medical Assistant: Dr. J. Morris. Clinical Assistants: Mr. D. Buist and Mr. J. Robertson.

---

ABERDEEN ROYAL INFIRMARY.—Contains 251 beds. Consulting Physician: Dr. P. Blaikie Smith. Physicians: Dr. Angus Fraser, Professor Finlay, and Dr. George M. Edmond. Assistant Physicians: Dr. John Gordon, Dr. A. H. Lister, and Dr. Ashley W. Mackintosh. Consulting Surgeons: Professor Alexander Ogston, Dr. J. C. O. Will, and Dr. J. Mackenzie Booth. Surgeons: Mr. J. S. Riddell, Mr. John Marnoch, and Mr. H. M. W. Gray. Assistant Surgeons: Dr. F. Kelly, Dr. Henry Peterkin, and Dr. Wallace Milne. Ophthalmic Surgeon: Dr. C. H. Usher. Gynæcologist: Professor W. Stephenson. Pathologist: Professor David James Hamilton. Assistant Pathologist: Dr. G. M. Duncan. Dental Surgeon: Dr. J. M. P. Crombie. Anæsthetist: Dr. J. J. Y. Dalgarno. Assistant Anæsthetists: Dr. W. R. Pirie and Dr. Thos. Fraser. Medical Electrician: Dr. J. R. Levack. Assistant Medical Electrician: Dr. Clifford T. Bell. Dermatologist and Lecturer on Diseases of the Skin: Dr. J. F. Christie. Medical Superintendent and Clinical Registrar: Dr. William Sinclair. Clerk and Treasurer and Factor for the Hospital Lands: Mr. A. Scott Finnie, 343, Union-street, Aberdeen. Medical session opens on Oct. 16th.

---

ABERDEEN ROYAL LUNATIC ASYLUM.—Contains, with hospital attached to main institution and Agricultural

---

[2] No returns.

Branch, about 986 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. T. C. Mackenzie, Dr. Reg. A. Forster, and Dr. John H. Moir. Clerk, Treasurer, and Factor: Mr. A. Scott Finnie, 343, Union-street, Aberdeen. Clinical instruction is given to students during three months in summer.

## HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ROYAL INFIRMARY, Edinburgh.—This hospital has over 900 beds and 60 cots for children, the average daily number of patients for 1906 being 839. Beds are set apart for clinical instruction by the professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the ordinary physicians and surgeons. Special instruction is given on Diseases of Women, Physical Diagnosis, Diseases of the Skin, Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin, and also to cases of Incidental Delirium or Insanity. There are also large and complete Medical Electrical and X Ray and Bathing Departments. Three wards are specially set apart for Clinical Instruction to Women Students. Post-mortem examinations are conducted in the anatomical theatre by the pathologist and his assistants, who also give practical instruction in Pathological Anatomy and Histology. The fees for hospital attendance are as follows—viz: Perpetual ticket, in one payment, £12; annual ticket, £6 6*s.*; six months, £4 4*s.*; three months, £2 2*s.*; monthly, £1 1*s.* Separate payments amounting to £12 12*s.* entitle the student to a life ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows:—1. Resident physicians and surgeons are appointed and live in the house free of charge. The appointment is for six months but may be renewed at the end of that period by special recommendation. 2. Non-resident house physicians and surgeons and clinical assistants are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologist.

*Staff: Medical Department.*—Consulting Physicians: Dr. Claud Muirhead, Dr. J. O. Affleck, and Dr. Andrew Smart. Consulting Gynæcologists: Sir J. Halliday Croom and Emeritus Professor Sir A. R Simpson. Professors of Clinical Medicine: Sir T. R. Fraser, Dr. W. S. Greenfield, and Dr. John Wyllie. Ordinary Physicians and Lecturers on Clinical Medicine: Dr. Byrom Bramwell, Dr. Geo. Gibson, Dr. Alex. Bruce, Dr. R. W. Philip, and Dr. W. Russell. Gynæcologists: Dr. A. H. F. Barbour and Mr. N. T. Brewis. Physician for Disease of the Skin: Dr. Norman Walker. Medical Electrician: Dr. Dawson Turner. Assistant Physicians: Dr. Murdoch Brown, Dr. G. Lovell Gulland, Dr. J. J. Graham Brown, Dr. Francis D. Boyd, Dr. R. A. Fleming, Dr. Harry Rainy, and Dr. Chalmers Watson. Assistant Gynæcologists: Dr. F. W. N. Haultain, Dr. J. Haig Ferguson, and Dr. Wm. Fordyce. Assistant Physicians for Diseases of the Skin: Dr. Fred. Gardiner and Dr. R. Cranston Low. Assistant Medical Electrician: Dr. Hope Fowler. Medical Registrar: Dr. A. Dingwall Fordyce.

*Surgical Department.*—Consulting Surgeons: Sir P. H. Watson, Mr. Joseph Bell, Mr. A. G. Miller, and Dr. P. H. Maclaren. Consulting Ophthalmic Surgeons: Dr. Argyll Robertson and Mr. George A. Berry. Consulting Aural Surgeons: Dr. P. McBride and Dr. McKenzie Johnston. Consulting Dental Surgeon: Dr. John Smith. Regius Professor of Clinical Surgery: Mr. Annandale. Professor of Surgery: Mr. Chiene. Ordinary Surgeons: Mr. J. M. Cotterill, Mr. C. W. Cathcart, Mr. F. M. Caird, and Mr. J. W. B. Hodsdon. Ophthalmic Surgeons: Dr. George Mackay and Dr. Wm. G. Sym. Surgeons to Ear and Throat Department: Dr. A. Logan Turner and Dr. J. Malcolm Farquharson. Dental Surgeons: Mr. William Guy and Mr. J. H. Gibbs. Assistant Surgeons: Mr. D. Wallace, Mr. Alexis Thomson, Mr. Alexander Miles, Mr. J. W. Dowden, Mr. A. A. Scot Skirving, Mr. Geo. L. Chiene, and Mr. W. Stuart. Assistant Ophthalmic Surgeons: Dr. J. V. Paterson and Dr. A. H. H. Sinclair. Assistant Surgeons to the Ear and Throat Department: Dr. John S. Fraser and Dr. John D. Lithgow. Pathologist: Dr. Theodore Shennan. Assistant Pathologists: Dr. W. T. Ritchie (Clinical Pathology), and Dr. Henry Wade and Dr. Carnegie Dickson (Morbid Anatomy). Surgical Registrar: Dr. Scott Carmichael. Superintendent: Colonel W. P. Warburton, I.M.S. (retired), M.D., C.S.I.

ROYAL INFIRMARY, GLASGOW.—This infirmary, which is the largest in Glasgow, is situated in Cathedral-square, Castle-street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds.[3] The infirmary has, including the Ophthalmic Department, over 620 beds, the average number occupied in 1905 being 600. When the reconstruction of the infirmary, which was begun two years ago, is completed it will have about 700 beds. There are special beds and wards for diseases of women, of the throat, nose, and ear, venereal diseases, burns, and septic cases. Wards are set apart for the teaching of Women Students. At the Out-door Department the attendances in 1906 numbered over 135,000. In addition to the large medical and surgical departments there are departments for special diseases—viz, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. Five house physicians and nine house surgeons, having a legal qualification in medicine and surgery, who board in the hospital free of charge, are appointed every six months. Clerks and dressers are appointed by the physicians and surgeons. As a large number of cases of acute diseases and accidents of a varied character are received these appointments are very valuable and desirable. A fully equipped Electrical Pavilion was opened a few years ago and year by year the latest and most approved apparatus for diagnosis and treatment has been added. The fees for hospital attendance, including clinical lectures and tutorial instruction, attendance at the out-door department, at the pathological department, post-mortem examinations, and the use of the museum, which has recently been re-arranged and catalogued, are as follows: For one year, £10 10*s.*; for six months, £6 6*s.*; for three months, £4 4*s.* Students who have paid fees to the amount of £21 to the Glasgow Royal Infirmary shall be permitted to attend in any subsequent year or years one winter and one summer course of instruction in the infirmary without further payment; and students who have paid to any other hospital in the United Kingdom fees, being not less than £21, in virtue of which they are entitled to attend without further payment, shall be admitted as students of the Royal Infirmary on payment of £3 3*s.* for six months or £1 11*s.* 6*d.* for three months.

*Staff.*—Visiting Physicians: Dr. D. S. Middleton, Dr. T. K. Monro, Dr. W. K. Hunter, Dr. J. M. Cowan, and Dr. J. B. Mackenzie Anderson. Visiting Surgeons: Mr. John Barlow, Mr J. A. Adams, Mr. David Newman, Mr. Q. McLennan, Mr. J. H Pringle, Mr. H. Rutherfurd, and Mr. P. Paterson Consulting Surgeon for Diseases of the Eye: Dr. A. Maitland Ramsay. Surgeon for Diseases of the Throat and Nose and Consulting Medical Electrician: Mr. J. Macintyre. Gynæcologist: Dr. J. K. Kelly. Surgeon for Diseases of the Ear: Mr. J Kerr Love. Pathologist and Curator of Museum: Dr. Charles Workman. Assistant Pathologist: Dr. Mary Baird Hannay. Bacteriologist: Mr. David McCrorie. Assistant Bacteriologists: Mr. J. A. Campbell and Dr. Lizzie T. Fraser. Medical Electrician: Mr. J. R. Riddell. Assistant Medical Electricians: Dr. Samuel Capie, Katharine M. Chapman, L.R.C.P. Edin., and Dr. Janie S. McLauchlan. Anæsthetist: Dr. King Patrick. Vaccinator: Dr. H. H. Borland. Dispensary Physicians: Mr. David McCrorie, Dr. John Henderson, Dr. Campbell S. Marshall, Dr. James Scott, Dr. J. T. McLachlan, and Dr. A. W. Harrington. Extra Dispensary Physicians: Dr. Archibald Jubb and Dr. Dugald McPhail. Dispensary Surgeons: Mr. A. N. McGregor, Mr. John Patrick, Mr. John A. C. Macewen, Mr. A. C. Faulds, Mr. Thomas Kay, and Mr. Robert Ramsey. Extra Dispensary Surgeons: Mr. James Battersby, Mr. Donald Duff, and Mr. W. H. Steel. Dispensary Specialists:—Diseases of Women: Dr. Balfour Marshall, Dr. Peter McBryde, Dr. W. D. Macfarlane, and Dr. Agnes W. Cameron; Diseases of the Ear: Mr. J. Kerr Love and Dr. James Adam; Diseases of the Skin: Dr. Alexander Morton and Dr. G. McIntyre; Diseases of the Throat and Nose: Dr. R. Fullerton and Dr. Grant; Diseases of the Eye: Dr. J. Rowan and Dr. H. W. Thomson; Diseases of the Teeth: Mr. W. Taylor and Mr. Taylor, jun. Superintendent: Dr. J. Maxtone Thom.

---

[3] See section "Medical Schools with Full Curriculum."

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital contains 120 beds, and is fitted with every modern improvement. A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. Full particulars can be obtained from the Registrar at the hospital.

*Staff.*—Consulting Physicians: Dr. J. Carmichael and Dr C. E. Underhill. Consulting Surgeons: Mr. T. Annandale and Mr. J. Bell. Consulting Surgeon Dentist: Mr. J. Smith. Pathologist: Mr. S. McDonald. Ordinary Physicians: Dr. G. H. M. Dunlop, Dr. J. Thomson, and Dr. J. S. Fowler. Surgeon: Mr. H. J. Stiles. Ophthalmic Surgeon: Mr. G. A. Berry. Assistant Surgeon: Mr. E. W. S. Carmichael. Medical Electrician: Dr. J. W. Spence. Extra Physicians: Dr. W. B Drummond, Dr. J. W. Simpson and Dr. A. D. Fordyce. Anæsthetists: Mr. D. C. A. M'Allum and Dr. J. Politachi.

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH, 6, Cambridge-street, Lothian-road.—Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 P.M. for out-door Ear, Nose, and Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeons: Dr. Joseph Bell, Dr. Logan Turner (Ear, Nose, and Throat Department). Surgeons: Dr. William George Sym, Dr. Malcolm Farquharson, Dr. John Cumming, Dr. J. V. Paterson, Dr. E. M. Lithgow, and Dr. W. G. Porter. Dental Surgeon: Mr. G. W. Watson. Treasurer and Secretary: Mr. J. P. Watson, W.S., 13, Hill-street.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the University of Glasgow. Number of beds upwards of 520. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. The Clinical Courses are given by the physicians and surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom. In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Fourteen resident assistants are appointed annually, without salary, from those who have completed their course. The fee for hospital attendance is £10 10*s.* and the fees for clinical instruction are £3 3*s.* for the Winter Session and £2 2*s.* for the Summer Session.

*Staff.*—Honorary Consulting Physician: Dr. G. P. Tennant. Honorary Consulting Surgeon: Dr. Alex. Patterson. Honorary Consulting Gynæcologist: Dr. W. L. Reid. Visiting Physicians: Sir T. McCall Anderson, Dr. Samson Gemmell, Dr. Ralph Stockman, and Dr. John Lindsay Steven. Visiting Surgeons: Sir Hector C. Cameron, Sir W. Macewen, Dr. J. C. Renton, Dr. George T. Beatson, C.B., Dr. T. K. Dalziel, and Dr. James H. Nicoll. Physicians for Diseases of Women: Dr. Murdoch Cameron and Dr. John M. Munro Kerr. Assistant Physicians: Dr. W. G. Dun, Dr. R. B. Ness, Dr. William MacLennan, and Dr. W. R. Jack. Assistant Surgeons: Dr. Duncan Macartney, Dr. Robert Kennedy, Dr. Alfred A. Young, Dr. G. B. Buchanan, Dr. John Morton, and Dr. G. H. Edington. Dispensary Physicians: Dr. James Carslaw, Dr. John S. M'Kendrick, Dr. Robert Fullarton, Dr. J. Campbell McClure, Dr. Frank Charteris, and Dr. A. B. Sloan. Dispensary Surgeons: Dr. Farquhar Macrae, Dr. Alex. MacLennan, Dr. Archd. Young, Dr. M. L. Taylor, Dr. W. W. Christie, and Dr. C. C. Cuthbert. Dispensary Physician for Diseases of Women: Dr. E. H L. Oliphant. Extra Dispensary Physicians: Dr. John Gracie, Dr. Leonard Findlay, Dr. John P. Duncan, and Dr. Murray Ross Taylor. Extra Dispensary Surgeons: Dr. A. H. Edwards, Dr. David Dickie, Dr. R. B Carslaw, and Dr. John S. Barr. Extra Dispensary Physicians for Diseases of Women: Dr. G. N. Turner and Dr. S. Cameron. Dispensary Surgeon for Diseases of the Ear: Dr. Thomas Barr. Honorary Consulting Ophthalmic Surgeon: Dr. Thomas Reid. Dispensary Surgeon for Diseases of the Throat and Nose: Dr. J. Walker Downie. Pathologist: Dr. Robert Muir. Assistant Pathologists: Dr. J. H. Teacher and Dr. M. L. Taylor. Vaccinator: Dr. J. W. Nicol. Dental Surgeon: Mr. W. D. Woodburn, L.D.S. Superintendent: Dr. Donald J. Mackintosh, M.V.O. Matron: Miss H. Gregory Smith. Secretary and Treasurer: Henry Johnston, 87, Union-street. Assistant Secretary: J. Matheson Johnston, C.A.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—The Hospital at Garnethill was opened in December, 1882, and in June, 1903, a country branch consisting of two wards was opened at Drumchapel. The number of beds in the town hospital and country branch together is 100. A specially designed Dispensary, or Out-patient Department, was opened in October, 1888, in West Graham-street. The whole institution is for non-infectious cases and is available to medical students for clinical instruction in the diseases peculiar to childhood. Classes are formed both at Hospital and Dispensary at the beginning of the University session in October. Students may be enrolled at any time. Fee £1 1*s.* per annum, admitting to both Hospital and Dispensary. Further particulars on applying to the House Surgeon, 45, Scott-street, Garnethill, Glasgow. Physicians: Dr. Samson Gemmell and Dr. George S. Middleton. Surgeons: Mr. T. Kennedy Dalziel and Mr. R. H. Parry.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (29 beds and six cots).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 971; out- or dispensary patients, 9969. Operations on Wednesdays and Saturdays. Honorary Consulting Surgeon: Dr. D. N. Knox. Surgeon: Dr. A. Maitland Ramsay. Assistant Surgeons: Dr. John Rowan, Dr. H. Wright Thomson, and Dr. John Gilchrist. Pathologist: Dr. Mary Hannay. Bacteriologist: Dr. J. Campbell McClure. Electrician: Dr. John Gilchrist. House Surgeon: Dr. Agnes Picken. This institution is the Ophthalmic Department of the Royal Infirmary. A post-graduate course is given by Dr. Ramsay and assistants during September. Clinical instruction is given in the summer session to students of the University of Queen Margaret College and in winter to students of St. Mungo's College and to all who take the class.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 20,936·7, and the total number of cases treated in 1906 was 27,640. The Medical Staff is as follows:—Surgeons: Dr. Thomas S. Meighan, Dr. A. Freeland Fergus, Dr. Andrew Wilson, Dr. James Hinshelwood, Dr. Leslie Buchanan, and Dr. W. Ernest F. Thomson. Assistant Surgeons: Dr. A. Lewis M'Millan, Dr. Henry L. G. Leask, Dr. W. Cochrane Murray, Dr. Brownlow Riddell, Dr. Arthur J. Ballantyne, and Dr. A. A. Macfarlane. Pathologist: Dr. W. B. Inglis Pollock. House Surgeon: Dr. William Smellie. Assistant House Surgeon: Dr. John L. Stewart.

*Regulations as to Attendance of Students.*—(1) Gentlemen may attend as students on payment to the treasurer of the following fees:—For six months £1 1*s.*, 12 months £2 2*s.* (2) All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. Students may be allowed the use of the journals and case-books for examination on applying to the House Surgeon. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine. Joint Secretaries and acting Treasurers: William George Black and Harold John Black, 88, West Regent-street, Glasgow. The medical session opens in October.

## IRISH SCHOOLS OF MEDICINE.[1]

Royal College of Surgeons in Ireland (Schools of Surgery).—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for over a century. They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued. The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. A refreshment-room is now open where students can have luncheon. There are special rooms set apart for lady students. The entire building is heated by hot-water pipes and lighted throughout by the electric light. Winter Session commences Oct. 1st; Summer Session, April 1st. Prospectuses and guide for medical students can be obtained post free on written application to the Registrar, Royal College of Surgeons, Stephen's-green, W., Dublin.

Queen's College School of Medicine, Belfast.—Ten Junior Scholarships have been founded in the Faculty of Medicine of the annual value of £20 each. Two are tenable by matriculated students of the first, second, third, fourth, and fifth years of their course respectively. The examinations for Scholarships take place at the commencement of the session. A Travelling Medical Scholarship, value £100, will be awarded in the spring of 1909. Class Prizes are awarded at examinations which take place at the close of the session. The Exhibitions, &c., of the Royal University of Ireland are also open to students. Lectures in Medicine at Queen's College, Belfast, will commence on Oct. 15th and end on March 31st. The Summer Medical Classes will begin on May 4th, except Botany, which begins on March 30th. The Donald Currie Chemical Buildings contain a lecture theatre, a preparation room, a chemical museum, a large class-room for elementary practical chemistry, laboratories for qualitative and quantitative analysis, rooms for water and gas analysis, dark room for photographic purposes, balance room, &c., provided with all modern appliances. Special facilities are given to those who wish to pursue original research. The Anatomical Department contains a large and well-lighted dissecting-room, a lecture-room, a professor's and demonstrator's room, a bone-room, and a laboratory for microscopic and photographic work. The medical museum is in the same building. The Jaffé Laboratories for Physiology comprise a lecture theatre, laboratories for practical work in chemical physiology, histology, and experimental physiology, and in addition small private research rooms, including balance, galvanometer, and centrifuge rooms. The Musgrave Pathological Laboratory.—In this department opportunity is afforded for research in pathology and bacteriology. The department is in touch with most of the hospitals in Belfast, and there is an ample supply of material for investigation by graduates in morbid histology, clinical pathology, and the bacteriology of infectious diseases. A course in pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in the department for the Public Health Committee of the corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, the diagnosis of cases of infectious diseases, &c. The certificate issued to members of the class in bacteriology qualifies for the D.P.H. degree. The pharmaceutical laboratory is fitted and equipped for the work of practically instructing students in the compounding and dispensing of medicines. Clinical instruction is given at the Royal Victoria Hospital, the medical staff of which is as follows:—Physicians: Professor Sir William Whitla, Professor James A. Lindsay, Dr. William Calwell, and Dr. H. L. McKisack. Surgeons: Mr. J. Walton Browne, Professor T. Sinclair, Mr. A. B. Mitchell, and Mr. T. S. Kirk. Gynæcologist: Professor Sir John Byers. Surgeon for Diseases of the Eye, Ear, and Throat: Mr. James A. Craig. Pathologist: Professor W. St.C. Symmers. Physician for Diseases of the Skin: Dr. W. Calwell. Assistant Physicians: Dr. W. B. McQuitty and Dr. J. S. Morrow. Assistant Surgeons: Mr. Robert Campbell and Mr. Andrew Fullerton. Assistant to the Gynæcologist: Mr. R. J. Johnstone. Assistant Surgeon Eye, Ear, and Throat Department: Mr. Henry Hanna. Assistant to the Pathologist: Dr. David Kirkhope. Administrators of Anæsthetics: Dr. V. G. L. Fielden, Dr. M. B. Smith, and Dr. F. C. Smyth. Medical Electrician: Dr. J. C. Rankin. Hæmatologist: Dr. Thomas Houston. Medical Tutor: Dr. S. H. G. Blakely. Surgical Tutor: Mr. Howard Stevenson. Registrars: Dr. J. E. MacIlwaine and Dr. S. T. Irwin. The Belfast Union and Fever Hospitals, the Ulster Hospital for Diseases of Women and Children, the Maternity Hospital, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Hospital for Sick Children, and the District Lunatic Asylum are open to students. Full information can be had from the Registrar, Queen's College, Belfast.

Professors and Lecturers—Natural Philosophy: W. Blair Morton, M.A. Chemistry: E. A. Letts, D.Sc., F.R.S.E. Natural History: Gregg Wilson, D.Sc. Anatomy: Johnson Symington, M.D., F.R.S. Physiology (Dunville): T. Hugh Millroy, M.D. Medicine: J. A. Lindsay, M.D., F.R.C.P. Surgery: T. Sinclair, F.R.C.S. Midwifery: Sir John W. Byers, M.D. Pathology (Musgrave): W. St.C. Symmers, M.B. Materia Medica: Sir William Whitla, M.D. Medical Jurisprudence: W. St.C. Symmers, M.B., and T. Houston, M.D. Ophthalmology: C. E. Shaw, M.D. Sanitary Science: E. A. Letts, D.Sc., and W. J. Wilson, M.B. Vaccination: J. McLiesh, M.B., D.P.H.

Queen's College School of Medicine, Cork.—The building is provided with a very large, well-ventilated dissecting room supplied with electric light, with physiological, toxicological, pathological, and pharmaceutical laboratories, materia medica, anatomical and pathological museums, as well as a collection of surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants and are open to the students in the class of Botany.

*Fees.*—For Practical Anatomy and for Practical Chemistry, £3 each course; for Anatomy and Physiology, £3 first course, and £2 for each subsequent course. Other medical classes, £2 first course, and £1 each subsequent course.

Eight scholarships (value about £30 each), as well as several exhibitions and class prizes, are open to students in their first four years and the Blayney Scholarship, value £32, and a Senior Exhibition to students in their fifth year.

Students can attend the North and South Infirmaries, the Cork Union Hospital, the Cork Fever Hospital, the County and City of Cork Lying-in Hospital, the Cork Maternity, the County and City of Cork Hospital for Diseases of Women and Children, the Cork Eye, Ear, and Throat Hospital, and the Cork District Lunatic Asylum.

*Staff, North Infirmary.*—Physicians: Dr. D. D. Donovan and Dr. E. Magner. Surgeons: Dr. Cotter. Dr. C. Y. Pearson, Dr. N. J. Hobart, and Dr. D. J. O'Mahony. Assistant Physician: Dr. R. B. Dalton. Assistant Surgeons: Dr. J. Dundon and Dr. R. P. Byrne. Pathologist: Dr. Denis Murphy. House Physician: Dr. D. F. Hegarty. House Surgeon: Dr. D. M. Donovan. Surgeon Dentist: Mr. W. Pericho.

*Staff, South Charitable Infirmary.*—Physicians: Dr. P. T. O'Sullivan and Dr. N. I. Townsend. Surgeons: Dr.

---

[1] For Scholarships see p. 640 et seq.

H. R. Townsend, Dr. H. Corby, and Dr. T. G. Atkins. Ophthalmic Surgeon: Dr. A. W. Sandford. Extern Physicians: Dr. E. V. Cantillon and Dr. E. W. Allsom. Extern Surgeon: Dr. R. P. Crosbie. House Surgeon: Dr. J. P. Higgins. Dentist: Mr. T. C. Butterfield.

Professors—Natural Philosophy: W. Bergin, M.A. Chemistry: A. E. Dixon, M.D. Anatomy: (vacant). Physiology: (vacant). Medicine: W. E. Ashley Cummins, M.D. Surgery: C. Yelverton Pearson, F.R.C.S. Materia Medica: John Dundon, M.D. Midwifery: H. Corby, M.D.

---

QUEEN'S COLLEGE SCHOOL OF MEDICINE, Galway.—There are eight Junior Scholarships in Medicine of the annual value of £25 each. Two are tenable by matriculated students of the first, second, third, and fourth years. The Council has power to award exhibitions for distinguished answering. Sessional prizes are offered in each subject. A Senior Scholarship in Anatomy, value £40, the holder of which may be appointed Demonstrator, is offered annually for competition tenable for one year by a student who shall have attended the Medical School of the College for at least two sessions and shall have obtained a Degree in Arts or Medicine or a Diploma in Medicine from a Licensing Body. Scholarship examinations are held at the commencement and those for Sessional Prizes at the close of each session. The Medical lectures are recognised by the Royal University of Ireland and the various Licensing Bodies in the United Kingdom. The College contains well lighted and ventilated dissecting room and anatomical lecture theatre; physiological, pharmaceutical, chemical, and physical laboratories; anatomical, pathological, gynæcological, and materia medica museums; as well as a large natural history and geological museum and an extensive library in which students can read and from which they can borrow books. Clinical instruction is given in the Galway Hospital and in the Galway Union and Fever Hospitals. The following constitute the medical staff of the Galway Hospital.—Physicians: Professor Kinkead and Professor Lynham. Surgeons: Professor Pye, Professor Colahan, and Professor Brereton. Gynæcologist: Professor Kinkead. House Surgeon: Dr. Rouse. Instruction at the Galway Union and Fever Hospital is given by Professor Colahan and Dr. McDonogh. There are extensive grounds, a portion of which is occupied by a Botanic Garden and a part is at the disposal of the College Athletic Union. A prospectus containing full information as to courses of lectures, scholarships, and fees for classes can be obtained on application to the Registrar, Queen's College, Galway.

Professors—Natural Philosophy: A. Anderson, LL.D. Chemistry: A. Senier, Ph.D. Natural History; R. J. Anderson, M.D. Anatomy and Physiology: J. P. Pye, M.D., D.Sc. Medicine: J. I. Lynham, M.D. Surgery: W. Westropp Brereton, L.R.C.S.I. Materia Medica: N. W. Colahan, M.D. Midwifery: R. J. Kinkead, M.D.

---

THE MEDICAL SCHOOL OF THE CATHOLIC UNIVERSITY, IRELAND, DUBLIN.—Founded in 1855, it is now the largest medical school in Ireland. It prepares students specially for the examinations of the Royal University and the Conjoint Colleges of Ireland and Edinburgh, but its lectures and practical courses are recognised by all the Licensing Bodies in Great Britain and Ireland. In addition to the ordinary medical examinations it prepares students for the D.P.H. and for the various higher University examinations in Pathology, Physiology, Chemistry, &c. One medical scholarship, six exhibitions, numerous gold and silver medals, and special prizes in anatomy, chemistry, and physics are offered annually for competition. The school opens for dissections on Oct. 1st; the winter lectures begin on Nov. 2nd. The Summer Session commences on April 1st.

Lecturers—Anatomy: Mr. E. P. McLoughlin, assisted by Mr. P. J. Fagan, Mr. G. M. Keating, and Mr. T. T. O'Farrell. Physiology: Dr. D. J. Coffey, M.A., M.B., and Dr. C. Coppinger, M.D., Emeritus Professor. Chemistry: Mr. Hugh Ryan, D.Sc., assisted by Mr. G. Ebrill, B.A. Surgery: Mr. J. S. M'Ardle, assisted by Mr. A. J. Blayney. Medicine: Sir Christopher Nixon, Bart. Midwifery: Dr. Alfred J. Smith. Pathology and Bacteriology: Dr. Edmond J. McWeeney. Physics: Mr. J. A. M'Clelland. Biology: Dr. George Sigerson. Practical Biology: Dr. Michael Curran. Ophthalmology: Dr. Louis Werner. Sanitary Science: Mr. Anthony Roche. Materia Medica: Dr. M. J. Dempsey. Medical Jurisprudence: Mr. Antony Roche. Practical Pharmacy: Mr. M. R. Hayes. Elementary Biology: Dr. D. J. Coffey. Elementary Physics: Mr. P. J. Fagan.

## HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

*Staff.*—Physicians: Dr. James Little, Dr. Wallace Beatty, and Dr. H. T. Bewley. Surgeons: Mr. F. T. Heuston and Mr. T. E. Gordon. Obstetric Surgeon: Sir W. J. Smyly. Ophthalmic Surgeon: Sir H. R. Swanzy. Throat Surgeon: Dr. S. Horace Law. Pathologists and Bacteriologists: Dr. J. Alfred Scott and Dr. W. Geoffrey Harvey. Dental Surgeons: Dr. Theodore Stack and Mr. John Stanton. Assistant Physician: Dr. G. Peacocke. Assistant Surgeon: Dr. K. E. Levison-Gower Gunn. House Surgeons: Dr. J. Allman Powell and Dr. Gordon Wright.

Two resident surgeons are elected yearly and three resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Dermatology will be awarded.

*Hudson Scholarship.*—In addition to the junior prizes the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in Clinical Medicine and Medical Pathology, Clinical Surgery and Surgical Pathology, Pathological Histology, Surgical Appliances, including instruments and bandaging, Ophthalmology, Gynæcology, and Dermatology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Mr. F. T. Heuston.

---

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds and consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of diseases peculiar to women. The practice of this hospital is one of the largest in Ireland; nearly 18,000 cases are treated annually, either as intern or extern patients. Lectures are delivered, practical instruction given, and gynæcological operations are performed in the theatres daily. There is a general dispensary held daily, at which instruction is given on the Diseases of Women and Children. There is a special afternoon dispensary held by the Master and his assistants, at which practical instruction in gynæcology is given. This is the largest dispensary of its kind in Dublin. There is no extra charge for attendance at this dispensary. There is accommodation for intern pupils who enjoy exceptional advantages of acquiring a thorough knowledge of this branch of their profession. Lady medical students can reside in the hospital. Clinical assistants are appointed from amongst the pupils as vacancies occur. Certificates of attendance at this hospital are accepted by all licensing bodies, and the diploma is recognised by the Local Government Board as a full legal midwifery qualification. The resident quarters have been much enlarged. A billiard table has been erected for the use of students. Fees: Extern pupils for full course of six months, £8 8*s.*; three months, £4 4*s.* Intern pupils, one month, £4 4*s.*; each consecutive month, £3 3*s.*; six months, £18 18*s.*; board and lodging in the hospital, 18*s.* per week. Lady students' intern, one month, £5 5*s.*; each consecutive month, £4 4*s.* Registration fee, in advance, 10*s.* 6*d.* Students can enter for attendance at any time, but preference is given to those entering from the first day of the month. Further particulars may be had on application to the Master or the Registrar at the hospital.

*Staff.*—Consulting Physicians: Sir John Banks, Sir John W. Moore, and Dr. J. M. Redmond. Consulting Surgeons: Dr. F. T. Heuston and Dr. F. W. Kidd. Pathologist: Dr. E. J. McWeeney. Pathological Analyst: Sir C. A. Cameron. Master: Dr. T. G. Stevens. Assistant Masters: Dr. Ronald S. Orbell and Dr. Thomas W. Conway. Registrar: Fred. A. Heney.

---

SIR PATRICK DUN'S HOSPITAL, Grand Canal-street, Dublin.—Classes for clinical instruction both in Medicine and Surgery are held each morning from 9 o'clock from Oct. 1st till the end of June. Special classes for students commencing their hospital studies will be held in the wards during the months of October, November, and December. They will embrace the elements of Medicine and Surgery, including note-taking. The surgical operating theatre, which has recently been erected, is equipped upon the most approved principles and is thoroughly in accord with modern surgical requirements. Instruction in the Diseases of Women is given Tuesday and Friday at 10 A.M. by Sir Arthur V. Macan. There is a special wing devoted to fever cases. Pathological and Bacteriological Demonstrations will be given each Friday at 10.30 A.M. during the Winter and Summer Sessions in the new Pathological Laboratory. A new department has been opened for the special treatment of Throat, Nose, and Ear diseases under the direction of Dr. R. H. Woods. Instruction will be given in these subjects and in the use of the Laryngoscope and Otoscope to senior students on Mondays and Thursdays. Opportunities are given the members of the hospital class of seeing the various applications of the x rays to the diagnosis and treatment of injury and disease. Opportunities are also afforded in the out-patient department for the diagnosis and treatment of the numerous minor ailments not met with in the hospital wards. Demonstrations are given upon Diseases of the Skin. A Resident Surgeon, with salary, is appointed annually. The election takes place at the end of December. Four Resident Pupils are appointed each half-year. Six Surgical Dressers and six Clinical Clerks are appointed each month.

*Prizes and Medals.*—Clinical medals and prizes will be awarded in Medicine and in Surgery respectively in accordance with the will of the late Rev. Samuel Haughton, M.D., S.F.T.C.D. Candidates who fail to obtain these medals and prizes will be awarded special certificates in Medicine and in Surgery provided they show sufficient merit. The next examination will be held in April, 1908.

*Fees.*—Winter and summer session, £12 12*s.*; winter session (six months), £8 8*s.*; and summer session (three months), £5 5*s.* The practice of this hospital is open to students of Medicine in attendance on schools other than the School of Physic, the certificates being recognised by the Royal University and Royal Colleges of Surgeons of England, Ireland, and Scotland.

Further information will be supplied by the Secretary to the Medical Board, Dr. H. C. Drury.

MERCER'S HOSPITAL.—This hospital, founded in 1707, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c. There is a large out-patient department and a special department for diseases peculiar to women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

*Appointments.*—A House Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

*Fees.*—Winter, six months, £8 8*s.*; Summer, three months, £5 5*s.*; nine months, £12 12*s.*

For further particulars apply to Dr. R. Charles B. Maunsell, 32, Lower Baggot-street, Dublin.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.—Physicians: Sir John William Moore, Dr. James Craig, and Dr. Edward E. Lennon. Surgeons: Sir L. H. Ormsby, Mr. W. J. Hepburn, Mr. William Taylor, Mr. R. Lane Joynt, and Mr. F. Conway Dwyer. Gynæcologist: Dr. F. W. Kidd. Clinical Assistants: Dr. William Boxwell and Dr. Henry Stokes. Pathologist: Professor Arthur H. White. This hospital was founded in 1753 and now contains 160 beds available for clinical teaching. A building containing 40 beds for the isolated treatment of fevers is attached to the Hospital. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and Twelve Surgical Resident Pupils and Dressers are appointed every six months, and a House Surgeon and two Clinical Assistants are elected annually. The session will open on Oct. 1st. A prospectus giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, Mr. William Taylor, 47, Fitzwilliam-square, Dublin.

MATER MISERICORDIÆ HOSPITAL, Dublin.—Consulting Physician: Sir Francis R. Cruise. Consulting Surgeon: Mr. Charles Coppinger. Physicians: Sir Christopher Nixon, Bart., Dr. Joseph Redmond, Dr. John Murphy, and Dr. Martin Dempsey. Surgeons: Sir Arthur Chance, Mr. John Lentaigne, and Mr. Alexander Blaney. Assistant Physician: Dr. John O'Donnell. Assistant Surgeon: Mr. Curran. Temporary Assistant Surgeon: Mr. D. Farnan. Obstetric Physician: Dr. Robert Farnan. Ophthalmic Surgeon: Mr. Louis Werner. Surgeon for Diseases of Throat and Nose: Mr. Patrick Dempsey. Dental Surgeon: Mr. E. Sheridan. Pathologist: Dr. Edmond McWeeney. Anæsthetist and Surgical Registrar: Dr. Patrick O'Farrell. This hospital, the largest in Dublin, at present containing 345 beds, is open at all hours for the reception of accidents and urgent cases. Clinical instruction will be given by the Physicians and Surgeons at 9 A.M. daily. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Opportunities are afforded for the study of Diseases of Women in the ward under the care of the Obstetric Physician, and at the Dispensary held on Tuesdays and Saturdays. Ophthalmic Surgery will be taught in the Special Wards and in the Dispensary. Surgical Operations will be performed on Mondays, Tuesdays, Fridays, and Saturdays at 11 o'clock. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents. Instruction will be given on Pathology and Bacteriology. Two House Physicians, six House Surgeons, and 16 resident pupils will be elected annually. Dressers and Clinical Clerks will also be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes will be offered for competition annually. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and a Home for Trained Nurses have been opened in connexion with the Hospital.

*Terms of attendance.*—Nine months, £12 12*s.*; six winter months, £8 8*s.*; three summer months, £5 5*s.* Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes &c., may be obtained from the Secretary, Medical Board.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.—These hospitals contain 270 beds—86 for Surgical cases, 64 for Medical cases, and 120 for Fever and other epidemic Diseases. A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services. 12 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students, but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Sir W. Thomson, C.B., Hon. Treasurer, 54, Stephen's-green East; or to Dr. Travers Smith, Hon. Secretary, 20, Lower Fitzwilliam-street, Dublin.

ROTUNDA HOSPITAL, Dublin.—This institution is the largest gynæcological as well as maternity hospital in the British empire. Qualified men who take out a course of two or three months' duration during the autumn, winter, or spring periods obtain (if they show keenness and capacity) one or more forceps applications and a certain number of minor gynæcological operations. Unqualified students can also enter at any time for the practice of the hospital and have access, not alone to the maternity and gynæcological wards, but also to the pathological laboratory attached to the hospital. The residential quarters have undergone considerable improvement and afford comfortable accommodation. Valuable appointments are periodically filled by qualified students who have obtained the hospital diploma. For further particulars apply to Mr. E. Hastings Tweedy, Master.

# SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| LONDON UNIVERSITY * | No. 1. | £40 per annum. | 1 year. | Awarded to the most meritorious of those candidates, whether internal or external, who, having passed the whole Intermediate Examination in Medicine at one time, have been awarded marks of distinction in (1) ANATOMY, or (2) PHYSIOLOGY, or (3) PHARMACOLOGY. | No candidate will be allowed to receive the income of more than one scholarship at the same time. |
| | No. 2. | £40 per annum. | 1 year. | | |
| | No. 3. | £30 per annum. | 1 year. | | |
| SOCIETY OF APOTHECARIES OF LONDON | Gillson. | £90 per annum. | 1 year. | Open to Licentiates of the Society, or to candidates for the Society's Diploma who obtain such Diploma within six months of their election to the scholarship. | Candidates must be under 35 years of age. |
| ST. BARTHOLOMEW'S MEDICAL SCHOOL | Entrance Scholarships. No. 1. | £75. | -- | Open Competitive Examination in not more than three nor fewer than two of CHEMISTRY, PHYSICS, ZOOLOGY, BOTANY, PHYSIOLOGY, ANATOMY. | Full or University Course at St. Bartholomew's Hospital. |
| | " No. 2. | £75. | -- | | Ditto. |
| | " No. 3 | £150. | -- | Open Competitive Examination in not fewer than three of the following:— CHEMISTRY, PHYSICS, BOTANY, ZOOLOGY, PHYSIOLOGY. | Full Course at St. Bartholomew's Hospital. |
| | Preliminary Scientific Exhibition. | £50. | -- | | Ditto. |
| | Entrance Scholarship in Arts | £100. | ... | Open Competitive Examination in LATIN, MATHEMATICS, and GREEK, or FRENCH, or GERMAN. | Ditto. |
| | Jeaffreson Exhibition. | £20. | .... | Open Competitive Examination in LATIN, MATHEMATICS, and GREEK, or FRENCH, or GERMAN. | Ditto. |
| | Shuter Scholarship. | £50. | -- | Competitive Examination among Cambridge Graduates in ANATOMY and PHYSIOLOGY | Ditto. |
| | Junior Scholarships. " No. 1. | £30. | -- | Competitive Examination among Students in ANATOMY and BIOLOGY. | Study at St. Bartholomew's Hospital. |
| | " No. 2. | £20. | -- | Ditto. | Ditto. |
| | " No. 3. | £25. | -- | Competitive Examination in CHEMISTRY, PHYSICS, and HISTOLOGY. | Ditto. |
| | " No. 4. | £15. | -- | Ditto. | Ditto. |
| | Senior Scholarship. | £50. | -- | Competitive Examination among Students in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | Ditto. |
| | Kirkes Scholarship. | £30 and Medal. | -- | Competitive Examination among Students in CLINICAL MEDICINE. | Ditto. |
| | Brackenbury Scholarships. " No. 1. | £39. | -- | Competitive Examination among Students in MEDICINE. | Ditto. |
| | " No. 2. | £39. | -- | Competitive Examination among Students in SURGERY. | Ditto. |
| | Lawrence Scholarship. | £45 and Medal. | -- | Competitive Examination among Students in SURGERY, MEDICINE, and MIDWIFERY. | Ditto. |
| | Sir Geo. Burrows Prize. | £10. | -- | Competitive Examination in PATHOLOGY among Students. | Ditto. |
| | Skynner Prize. | 13 guineas. | -- | Competitive Examination in REGIONAL and MORBID ANATOMY among Students. | Ditto. |
| | Matthews Duncan Medal and Prize. | £20. | -- | Competitive Examination among Students in MIDWIFERY and GYNÆCOLOGY. | Ditto. |
| | Luther Holden Research Scholarship in Surgery. (And other Prizes and Medals of less value.) | £105. | .... | By Election. | Ditto. |
| CHARING CROSS HOSPITAL AND COLLEGE | Entrance Scholarships, open to students at the commencement of curriculum. | | | | |
| | Livingstone. | 100 guineas. | -- | The Livingstone and Huxley Scholarships are awarded annually at the commencement of each Winter Session, after a competitive examination in the following groups of subjects: — (1) ENGLISH, including LANGUAGE, HISTORY, and GEOGRAPHY; (2) LATIN and any one of the following three languages—GREEK, FRENCH, and GERMAN; (3) MATHEMATICS, including ARITHMETIC, ALGEBRA, and GEOMETRY; and MECHANICS, including STATICS and DYNAMICS; (4) INORGANIC CHEMISTRY and EXPERIMENTAL PHYSICS, including ACOUSTICS, HEAT, MAGNETISM, ELECTRICITY, and OPTICS; and (5) ANIMAL and VEGETABLE BIOLOGY. No Candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left entirely to the Candidate. | Open to all general students. |
| | ... | 60 " | -- | | Open to all general students. |
| | Huxley. | 55 " | -- | | For sons of medical men. |
| | ... | 40 " | -- | | Open to all general students. |
| | ... | | -- | | For dental students. |

---

* In the M.B., B.S. examination a University Medal of value £5 may be awarded to the candidate who has passed with the greatest distinction. In each part of the M.D. and in the M.S. examinations a University Medal of value £25 may be awarded to the candidate who has passed with the greatest distinction.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| **CHARING - CROSS HOSPITAL AND COLLEGE**—*continued.* | Epsom Scholarship. | Free education. | ... | ... | Epsom Foundation Scholars who have passed Preliminary Scientific M.B. Lond. Univ. |
| | Universities Scholarship (1)<br>Universities Scholarship (2) | 72 guineas.<br>72 ,, | ... | Examination in Anatomy and Physiology, including Histology. | Oxford Students who have passed first M.B. Exam.<br>Cambridge students who have passed second M.B. Exam.<br>London students who have passed Intermediate Exam. in Med. who have not entered at any London Medical School. |
| | Llewellyn Scholarship. | £25. | ... | Awarded annually to the Student of not more than five years' standing who, in the opinion of the School Committee, shall have distinguished himself the most at the Prize Examinations in the following subjects, viz.:—Medicine, Surgery, Midwifery, Pathology, Therapeutics, Forensic Medicine, Public Health, Psychological Medicine, Ophthalmology, Practical Medicine, Practical Midwifery. | None. |
| | Huxley Medal with Prize. | £10. | ... | Competitive Examination in Anatomy and Physiology at end of Second Winter Session. | ... |
| | Golding Prize. | £10. | ... | Competitive Examination among First-year Students in Anatomy and Physiology. | Students must have attended the Classes in each subject at this School. |
| | The Dr. T. H. Green Prize for Clinical Medicine. | 5 guineas. | ...... | Given annually to the Student who does the best work upon some special subject involving simple clinical observation in the wards or clinical laboratory and on the result of a practical examination on cases in the wards. | ... |
| **ST. GEORGE'S HOSPITAL**— | Entrance Scholarships. No. 1. | 70 guineas | ... | Competitive Examination in Anatomy and Physiology. | ...... |
| | ,, No. 2. | £50. | ... | Ditto. | ...... |
| | Wm. Brown Exhibition. | £100 per annum. | 2 years. | Competitive Examination among Perpetual Pupils having registrable qualification in the Practice of Medicine, Midwifery, and Surgery. | Study at St. George's School. |
| | ,, | £40 ,, ,, | 8 years. | Competitive Essay and Submission of Original Work by Perpetual Pupils qualified not more than three years previously. | Ditto. |
| | Allingham Scholarship in Surgery. | Interest on £1800. | ... | Competitive Essay for Students qualified not more than three years. | .... |
| | Brackenbury Prize in Medicine. | Interest on £1103. | ... | Competitive Examination among Students of not more than five years' standing. | None. |
| | Brackenbury Prize in Surgery. | Interest on £1103. | ... | Competitive Examination among Students of not more than five years' standing. | None. |
| | Treasurer's Prize. | £10 10s. | ... | Proficiency in Clinical Examination of three Medical and three Surgical Cases, together with a written Examination in Medicine, Surgery, and Midwifery. | None. |
| | H. C. Johnson Memorial Prize. | £10 10s. | ... | Competitive Examination in Practical Anatomy. | None. |
| | Pollock Prize. | Interest on £372. | ... | Competitive Examination in Physiology, Physiological Chemistry, and Histology. | None. |
| | Clarke Prize.<br>Thompson Medal.<br>Brodie Prize. | Interest on £209.<br>Interest on £185.<br>Interest on £220. | ...<br>...<br>... | Awarded for Clinical Reports and Commentaries. | None. |
| | Webb Prize. | Interest on £1000. | ... | Competitive Examination among Perpetual Pupils in Bacteriology. | None. |
| **GUY'S HOSPITAL** ... | Entrance Scholarships. No. 1. | £100. | ... | Open Competitive Examination among Candidates under twenty years of age in Latin, English, Greek or French or German, Arithmetic, Euclid, and Algebra. | Course at Guy's Hospital. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| GUY'S HOSPITAL—*continued.* | Entrance Scholarships. No. 2. | £50. | — — | Under twenty-five years of age, ditto. | Course at Guy's Hospital. |
| | ,, No. 3. | £150. | — — | Open Competitive Examination among Candidates under twenty-five years of age in INORGANIC CHEMISTRY, GENERAL BIOLOGY, and EXPERIMENTAL PHYSICS. | Perpetual Course at Guy's Hospital. |
| | ,, No. 4. | £60. | ...... | Ditto. | Ditto. |
| | ,, No. 5. | £50. | — — | Competitive Examination among Candidates under twenty-five years of age who have completed the curriculum for, or passed, the Examinations in Anatomy and Physiology for a medical degree in any University of the British Empire, and have not entered as Students in any Metropolitan Medical School. | Ditto. |
| | Hilton Prize. | £5. | — — | Dissections by Senior Students. | Ditto. |
| | Junior General Proficiency. | £20. | — — | Competitive Examination among Junior Students in ELEMENTARY ANATOMY, HISTOLOGY, ANATOMY, and PHYSIOLOGY. | |
| | ,, | £15. | — — | Ditto. | Ditto. |
| | ,, | £10. | — — | Ditto. | Ditto. |
| | Michael Harris Prize. | £10. | — — | Competitive Examination among Second-year Students in HUMAN ANATOMY. | Ditto. |
| | Sands Cox Scholarship. | £15 per annum. | 3 years. | Competitive Examination among Second-year Students in PHYSIOLOGY, HISTOLOGY, and PHYSIOLOGICAL CHEMISTRY. | |
| | Wooldridge Memorial Prize. | £10. | ...... | Ditto. | |
| | Treasurer's Gold Medals (1) for Clinical Medicine, (2) for Clinical Surgery. | ...... | ...... | Competitive Examination among Senior Students in MEDICINE and SURGERY respectively. | |
| | Golding-Bird Prize. | £20 and Medal. | — — | Competitive Examination among Senior Students in BACTERIOLOGY. | Ditto. |
| | Beaney Prize. | £31 10s. | — — | Competitive Examination among Students in PATHOLOGY. | Ditto. |
| | Gull Studentship, Pathology. | £150 per annum. | 3 years. | Awarded without Competitive Examination to Students intending to conduct Research | |
| | Beaney Scholarship. Therapeutics. | £31 10s. | 3 years. | Ditto. | |
| | Arthur Durham Travelling Studentship. | £100. | 3 years. | | |
| KING'S COLLEGE ... ... | Warneford Scholarships. No. 1. | £25 per annum. | 4 years. | Competitive Examination among Matriculated Medical Students in DIVINITY, ENGLISH HISTORY, LATIN, GREEK, FRENCH, GERMAN, and MATHEMATICS. | Perpetual Course at King's College. |
| | ,, No. 2. | £25 per annum. | 4 years. | Ditto. | Ditto. |
| | Sambrooke Exhibition. | £100. | — — | Open Competitive Examination in MATHEMATICS, ELEMENTARY PHYSICS, INORGANIC CHEMISTRY, BOTANY, and ZOOLOGY. | Course as Medical Student at King's College. |
| | Rabbeth Scholarship. | £20. | — — | Competitive Examination among Matriculated Students in Preliminary Scientific Subjects. | None. |
| | Science Exhibitions. No. 1. | £30 per annum. | 2 years. | Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternative Subjects. | None. |
| | Science Exhibitions. No. 2. | £20 per annum. | 2 years. | Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternative subjects. | None. |
| | Medical Entrance Scholarship. | £50. | — — | Open Competitive Examination in ANATOMY AND PHYSIOLOGY for Students who propose to take degree at any British University and have passed the Examination at that University in BIOLOGY, CHEMISTRY, and PHYSICS. | Perpetual Student from date of entering upon Scholarship on completion of University Examination in ANATOMY and PHYSIOLOGY. |
| | Medical Scholarships. No. 1. | £40 per annum. | 1 year. | Competitive Examination among Fourth-year Students. | |
| | ,, No. 2. | £20. | 1 year | Competitive Examination among Third-year Students. | |
| | ,, No. 3. | £20. | 1 year. | Competitive Examination among Second-year Medical Students. | |
| | Sambrooke Registrarship. No. 1. | £50. | — — | Competitive Examination among Matriculated Medical Students who have filled certain appointments at hospitals. | |
| | ,, No. 2. | 50. | — — | Ditto. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| KING'S COLLEGE—*continued.* | Daniel Scholarship. | £20 per annum. | 2 years. | Open Competitive Examination among six months' Laboratory Students in CHEMISTRY. | None. |
| | Carter Prize. | £15. | – – | Open Competitive Examination in Botany. | |
| | Tanner Prize. | £10. | – – | Competitive Examination in OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN. | |
| | Todd Prize. | £4 4s. and medal. | – – | Competitive Examination in Clinical Medicine. | |
| LONDON HOSPITAL .. .. | 1. Price Scholarship | £120. | – – | Competitive Examination among Students in subjects of Preliminary Scientific M.B. Examination at University of London. | Successful Candidates must enter as Full Students. |
| | 2. Entrance Scholarships. | | | | |
| | „ No. 1. | £60. | – – | Ditto. | |
| | „ No. 2. | £35. | – – | Ditto. | |
| | 3. Epsom College Scholarship. | Free Education. | – – | .... | |
| | 4. Price Scholarship. | £60. | – – | HUMAN ANATOMY AND PHYSIOLOGY. | Study at Oxford or Cambridge. |
| | Buxton Scholarships. No. 1. | £30. | – – | Competitive Examination among Students in subjects of Preliminary Examination. | |
| | „ No. 2. | £20. | – – | Ditto. | |
| | Scholarship. | £20. | – – | Competitive Examination in CLINICAL MEDICINE. | |
| | „ | £20. | – – | Competitive Examination in CLINICAL SURGERY. | |
| | „ | £20. | – – | Competitive Examination in CLINICAL OBSTETRICS. | |
| | Sutton Prize in Pathology. | £20. | – – | Competitive Examination in PATHOLOGY. | |
| | *Biennially:* Duckworth Nelson Prize. | £10. | – – | Competitive Examination in PATHOLOGY, PRACTICAL MEDICINE, and SURGERY. | |
| | Letheby Prizes (3) | £30. | – – | Competitive Examination in CHEMISTRY. | |
| | Scholarship. | £25. | – – | Competitive Examination in ANATOMY AND PHYSIOLOGY. | |
| | „ | £20. | – – | Competitive Examination in ANATOMY and BIOLOGY. | |
| | Dressers' Prizes. „ No. 1. | £10. | – – | ZEAL, EFFICIENCY, and KNOWLEDGE OF MINOR SURGERY. | |
| | „ No. 2. | £10. | – – | Ditto. | |
| | „ No. 3. | £10. | – – | Ditto. | |
| | „ No. 4. | £10. | – – | Ditto. | |
| | „ No. 5. | £10. | – – | Ditto. | |
| | „ No. 6. | £10. | – – | Ditto. | |
| | *Triennially:* Hutchinson Prize. | £40. | – – | For the best essay upon a subject in CLINICAL SURGERY. | |
| | Practical Anatomy Prizes. | £6.<br>£4. | – –<br>– – | ....<br>.... | |
| | *Biennially:* Andrew Clark Prize. | £26. | – – | CLINICAL MEDICINE and PATHOLOGY. | |
| | James Anderson Prizes. | £9. | – – | CLINICAL MEDICINE. | |
| | Douro Hoare Prize. | £5. | – – | PHYSIOLOGY. | |
| | Wynne Baxter Prize. | £5 5s. | – – | FORENSIC MEDICINE. | |
| ST. MARY'S HOSPITAL .. | Natural Science Scholarship | £145. | – – | Competitive Examination. | Course at St. Mary's Hospital |
| | „ | £78 15s. | – – | Ditto. | |
| | „ | £62 10s. | – – | Ditto. | |
| | „ | £52 10s. | – – | Ditto. | |
| | University Scholarship. | £63. | – – | Open to Students from any British University by Competitive Examination in NATURAL SCIENCE. | |
| | „ | £63. | – – | | |
| | Epsom College Scholarship. | £145. | – – | By nomination. | |
| | Gold Medal in Clinical Medicine | £20. | – – | Given for an ESSAY ON SOME SPECIAL POINT IN CLINICAL MEDICINE | |
| | General Proficiency Scholarship. No. 1. | £20 | 1 year. | ADVANCED ANATOMY, PHYSIOLOGY, and HISTOLOGY. | |
| | „ No. 2. | £20. | 1 year. | MIDWIFERY, MATERIA MEDICA, PATHOLOGY, and FORENSIC MEDICINE. | |
| | „ No. 3. | £20. | 1 year. | MEDICINE, SURGERY, HYGIENE, and MENTAL DISEASES. | |
| | Dermatology Prize. | £5 5s. | – – | Awarded twice in each year by Competitive Examination. | |
| | Meadows Prize in Obstetrics | £8. | – – | Awarded in alternate years for Proficiency in OBSTETRICS. | |
| | Clinical Medicine Prize. | £5 5s. | – – | Awarded annually for Reports of Clinical Cases by Students of Third and Fourth Years. | |
| | Clinical Surgery Prize. | £5 5s. | – – | | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ST. MARY'S HOSPITAL—*continued.* | Winter Session Prizes (9 in number). | £3 3s. each. | – – | Competitive Examination at the end of the Course of Lectures in each of the Subjects of the Medical Curriculum. | |
| | Summer Session Prizes (9 in number). | £2 2s. each. | – – | Ditto. | |
| MIDDLESEX HOSPITAL – | Entrance Scholarship No. 1. (in Arts) | £100. | – – | Open Competitive Examination. | Course at Middlesex Hospital. |
| | ,, No. 2. (in Science) | £75. | – – | Ditto. | Ditto. |
| | ,, No. 3. | £50. | – – | Competitive Examination among Students from Oxford or Cambridge. (Subjects: ANATOMY and PHYSIOLOGY, including HISTOLOGY.) | |
| | Freer Lucas Scholarship. | £126. | – – | To Students of Epsom College, on Nomination of Head Master. | |
| | Broderip Scholarship. No. 1. | £60. | – – | Competitive Examination among Senior Students in CLINICAL SUBJECTS. | |
| | ,, No. 2. | £40. | – – | Ditto. | |
| | Freeman Scholarship. | £30. | .... | Examination in OBSTETRICS and GYNÆCOLOGY. | |
| | Governor's Prize. | £21. | – – | Competitive Examination among Students during Sixth Year of Study. | |
| | Hetley Clinical Prize. | £25. | – – | Competitive Examination among the Students during Fifth Year of Study. | |
| | John Murray Gold Medal and Scholarship. | £20. | Every third year. | Examination in THEORETICAL and PRACTICAL MEDICINE. | |
| | Lyell Medal and Scholarship. | £55 5s. | – – | Examination in SURGICAL ANATOMY and PRACTICAL SURGERY. | |
| | Leopold Hudson Prize. | £11 11s. | .... | Examination in SURGICAL PATHOLOGY and BACTERIOLOGY. | |
| | Second year's Exhibition. | £10 10s. | .... | Examination in ANATOMY and PHYSIOLOGY. | |
| | "Emden" Cancer Research Scholarship. | £100. | 3 years. | – – | |
| | Richard Hollins Research Scholarship. | £105. | .... | .... | |
| ST. THOMAS'S HOSPITAL SUMMER | College Prizes. ,, No. 1. | £15. | – – | Competitive Examination among Second-year Students. | |
| | ,, No. 2. | £10. | – – | Ditto. | |
| WINTER | Entrance Science Scholarship. No. 1. | £150. | – – | Competitive Examination in PHYSICS, CHEMISTRY, and BIOLOGY. | Perpetual Course. |
| | ,, No. 2. | £60. | – – | Ditto. | Ditto. |
| | ,, No. 3. | £50. | – – | Competitive Examination in ANATOMY, PHYSIOLOGY, CHEMISTRY (any two). | Perpetual Course from fourth year. |
| | Wm. Tite Scholarship. | £25. | – – | Competitive Examination among Second-year Students. | |
| | College Prizes. ,, No. 5. | £20. | – – | Ditto. | |
| | ,, No. 6. | £10. | – – | Ditto. | |
| | Musgrove Scholarship, or | £35. | 2 years. | Competitive Examination among Third-year Students. | |
| | Peacock Scholarship. | £35. | 2 years. | Ditto. | |
| | College Prizes. ,, No. 7. | £20. | – – | Competitive Examination among Third-year Students. | |
| | ,, No. 8. | £10. | – – | Ditto. | |
| | ,, No. 9. | £10. | – – | Competitive Examination among Fifth-year Students. | |
| | ,, No. 10. | £10. | – – | Ditto. | |
| | ,, No. 11. | £10. | – – | Ditto. | |
| | ,, No. 12. | £10. | – – | Ditto. | |
| | ,, No. 13. | £10. | – – | Ditto. | |
| | ,, No. 14. | £10. | – – | Ditto. | |
| | ,, No. 15. | £10. | – – | Ditto. | |
| | Cheselden Medal. | – – | – – | Competitive Examination in SURGERY and ANATOMY. | |
| | Mead Medal. | – – | – – | Competitive Examination in MEDICINE and PATHOLOGY. | |
| | Seymour Graves Toller Prize. | – – | – – | Ditto. | Perpetual Course from fourth year. |
| | Bristowe Medal. | – – | – – | Competitive Examination in PATHOLOGY and MORBID ANATOMY. | |
| | Solly Medal and Prize. | – – | – – | SURGICAL REPORTS. | |
| | Treasurer's Medal. | – – | – – | General Proficiency (Fifth-year Students). | |
| | Wainwright Prize. | – – | – – | MEDICINE and PATHOLOGY. | |
| | Hadden Prize. | – – | – – | PATHOLOGY. | |
| | Beaney Scholarship. | £50 biennially. | – – | For SURGERY and SURGICAL PATHOLOGY. | |
| | Sutton Sams Memorial Prize. | £5 biennially. | – – | Reports of Cases in OBSTETRIC MEDICINE. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ST. THOMAS'S HOSPITAL—*continued.* | Grainger Testimonial Prize. | £15 annually. | — — | For work in ANATOMY and PHYSIOLOGY. | |
| | The Salters' Company Research Fellowship. | £100 annually. | 8 years. | Promotion of Research — PHARMACOLOGY. | |
| | Louis Jenner Research Scholarship. | £60 annually. | 2 years. | Promotion of Research—PATHOLOGY. | |
| UNIVERSITY COLLEGE, LONDON | Entrance Scholarship (Bucknill). | 135 gs. | — — | Open Competitive Examination in CHEMISTRY, PHYSICS, BOTANY, and ZOOLOGY. | Complete Course at University College and University College Hospital Medical School. |
| | Entrance Exhibition. No. 1. | 55 gs. | — — | Ditto. | Complete Intermediate Course at University College. |
| | ,, No. 2. | 55 gs. | — — | Ditto. | Ditto. |
| | Cluff Memorial Prize. | £15 (biennially). | — — | Proficiency in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | |
| | Epsom Free Medical Scholarship. | . . . . | . . . . | Proficiency in subjects of PRELIMINARY SCIENTIFIC, and nomination by Epsom College. | Complete Course at University College and University College Hospital Medical School. |
| | Schäfer Prize in Physiology. | £18 (triennially). | — — | Research in PHYSIOLOGY. | |
| | Sharpey Physiological Scholarship. | £105 a year. | — — | Proficiency in BIOLOGICAL SCIENCES | |
| | Morris Bursary. | £16 a year. | 2 years. | Available for sons of deceased professional men, by nomination. | |
| | 5 Gold and 5 Silver Medals. | Annually. | . . — | Competition among Students of the various departments. | |
| *Hospital Medical School* ... | Entrance Scholarship (Bucknill). (See above.) | . . . . | . . — | . . — | |
| | Entrance Exhibition. No. 1. | 80 gs. | — — | Open Competitive Examination in ANATOMY and PHYSIOLOGY. | Final Course at University College Hospital Medical School. |
| | ,, No. 2. | 80 gs. | . . — | Ditto. | Ditto. |
| | Atkinson Morley Scholarship. | £45 per annum. | 8 years. | Theory and Practice of SURGERY. | |
| | Atchison Scholarship. | £55 per annum. | 2 years. | Competitive Examination among Medical Students. | |
| | Filliter Exhibition. | £30. | 1 year. | Competitive Examination among Students in PATHOLOGY. | |
| | Fellowes Clinical Medals. | 2 Senior and 2 Junior Medals. | . . . . | Competition among Students in CLINICAL MEDICINE. | |
| | Liston Gold Medals | 2 Gold Medals. | — — | Competition among Students in CLINICAL SURGERY. | |
| | Alexander Bruce Gold Medal | . . . . | — — | Proficiency in PATHOLOGY and SURGERY. | |
| | Tuke Silver and Bronze Medals. | — — | — — | Competition in PATHOLOGY. | |
| | Erichsen Prize. | £10 10s. | — — | Competition in PRACTICAL SURGERY. | |
| | And Class Prizes. | . . — | . . . . | — . . | |
| WESTMINSTER HOSPITAL | Guthrie Entrance Scholarship. | £60 (total). | — — | Open Competitive Examination among Candidates under twenty-five years of age in LATIN, MATHEMATICS, ENGLISH, and GREEK, FRENCH, or GERMAN. | For Students entering in the Winter Session. |
| | Entrance Scholarship. | £40 (total). | — — | Ditto. | Ditto. |
| | Ditto. | £30. | — — | Ditto. | Ditto. |
| | Dental Scholarship. | £20 (total). | — — | Ditto, as above, save that Dental Students only can compete. | For Students entering in the Winter Session. |
| | Free Presentation. | — — | — — | Open to Pupils of the Epsom Medical College, obtained by recommendation. | |
| | Entrance Scholarship | £40 (total). | — — | Open Competition in CHEMISTRY and EXPERIMENTAL PHYSICS according to the Synopsis of the Conjoint Board | In September and in April. |
| | Natural Science. | £60. | — — | Competitive Examination in subjects of Preliminary Scientific of University of London. | For Students entering in the Winter Session. |
| | University Scholarship. | £60 (total). | — — | Competitive Examination among University Students in ANATOMY and PHYSIOLOGY. | In April and in September. |
| | Ditto. | £40. | — — | Ditto. | In September. |
| | Natural Science. | £60. | — — | Competitive Examination in subjects of Preliminary Scientific of London University. | In April. |
| | Arts Scholarship (Entrance). | £60. | — — | Competitive Examination as for the Guthrie Scholarship. | For Students entering in the Summer Session. |
| | Ditto. | £40. | — — | Ditto. | Ditto. |
| | Sturges Prize in Clinical Medicine. | 5 gs. | — — | Notes and commentaries on 6 cases. | |
| | Clinical Surgery. | £5. | — — | Ditto on 6 cases. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| Institution. | Title of Scholarship, &c. | Annual or total value. | How long tenable. | How obtainable. | Conditions attached to tenure. |
|---|---|---|---|---|---|
| WESTMINSTER HOSPITAL —*continued.* | Chadwick Prize. | £21 in books or instruments. | — — | Competitive Examination among Medical Students in MEDICINE and SURGERY, including PATHOLOGY and APPLIED ANATOMY and PHYSIOLOGY. | |
| | Frederick Bird Medal and Prize. | £14 in medal and books or instruments. | — — | Competitive Examination in MIDWIFERY and DISEASES of WOMEN, MEDICINE, and PATHOLOGY among Students who have completed their Fourth Winter Session at the Westminster Hospital School of Medicine. | |
| | Alfred Hughes Memorial Prize. | About £5 in books or instruments. | .... | Awarded annually to the candidate who during the second year in ANATOMY exhibits the highest proficiency at the class examinations in that subject held during the Winter Session | |
| | Carter Gold Medal and Prize for Botany. | Gold Medal and books of the joint value of £15. | .... | Open to Students who have not exceeded three academical years from the beginning of their attendance. | |
| | Jelf Medal. | .... | .... | Awarded annually to the Student of the third year most distinguished in examinations. | |
| | Second Year Scholarship. | £20. | 1 year. | Subjects of Examination—ELEMENTARY ANATOMY, ELEMENTARY PHYSIOLOGY and HISTOLOGY, and ORGANIC CHEMISTRY. | |
| | Third Year Scholarship. | £20. | 1 year. | This Scholarship is open to all Students at the end of their Third Winter and Summer Sessions. Subjects — ANATOMY, PHYSIOLOGY, and PHARMACOLOGY and MATERIA MEDICA | |
| | Daniell Scholarship. | £20. | 2 years. | Awarded every year to the Student who shall have executed the best researches in CHEMISTRY. | |
| | Rabbeth Scholarship. | £20. | — — | Given annually in memory of Samuel Rabbeth, M.B. Lond., who sacrificed his life in an attempt to save a child who was dying from diphtheria. It is awarded to the Student who in his first year shall acquit himself best in the Class Examinations in the Preliminary Scientific Course. | |
| LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN | Entrance Scholarship. | £30. | — — | Competitive Examination in ENGLISH, LATIN ARITHMETIC, EUCLID, and ALGEBRA. | |
| | St. Dunstan's Medical Exhibition. | £60. | 3 years, extendible to 5 years. | Ditto. | Candidates must be (1) not more than 20 years of age on June 1st preceding the examination; (2) resident in the Metropolitan Police District area; (3) Matriculated Students of the University of London; (4) in the opinion of the Governors in need of such an exhibition for the prosecution of their medical studies. |
| | Bostock Scholarship. | £60. | 2 or 4 years. | Given on the result of an examination held by the University of London in June to a Student who has passed the Preliminary Scientific Examination or Intermediate Science Examination of the University of London held in the previous July or the July following the Examination. | Candidates are expected to read for the M.B. degree of the University of London. Next award June, 1911. |
| | Mabel Webb Research Scholarship. | £30. | 1 year, renewable. | For Research Work in PHYSIOLOGY, CHEMISTRY, or PATHOLOGY.<br>Application to Secretary by Sept. 1st. | Next award October, 1908. |
| | Fanny Butler Scholarship. | £14 10s. | 4 years. | | Candidates must be willing to work in connexion with the Church of England Zenana Missionary Society. Next award September, 1909. |
| | John Byron Bursary. | £20. | 2 to 4 years. | Application to Secretary by March 31st. | Offered to students already in the school requiring assistance for the prosecution of their medical studies. Next award May, 1909. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN—*continued.* | Helen Prideaux Scholarship. | £40. | — — | ...... | Awarded every second year to a Student who has qualified during the two years immediately preceding the date of the award, and who, in the opinion of the Trustees, has done the best work during her final years in MEDICINE, SURGERY, OBSTETRIC MEDICINE, and PATHOLOGY. The holder of the Prize shall submit to the Trustees for their approval a statement as to how she proposes to spend the money, so as to fulfil the condition that it is for the purpose of assisting her to further study. Next award December, 1908. |
| OXFORD UNIVERSITY — | Burdett-Coutts Scholarships. | £115 per annum. | 2 years. | Competitive Examination. | For the promotion of the Study of Geology and of Natural Science as bearing on Geology. |
| | Radcliffe Trav Fellowship (stipend paid by University College). | £200 " " | 3 years. | Ditto. | Foreign Travel for purpose of Medical Study. |
| | Rolleston Prize. | — .. | — — | Original Research. | This prize is given once in two years and is of the value of about £80. |
| | Scholarships in various branches of Natural Science at many of the Colleges. | £50 to £80 a year. | 4 years. | Competitive Examination. | Satisfactory industry. |
| | Welsh Memorial Prize. | — — | — — | Best set of drawings illustrative of HUMAN ANATOMY. | Competitors must be members of the University who have studied in the Anatomical laboratory. No one is eligible who has passed the first examination for the degree of B.M., or an examination in Anatomy necessary for registration as a qualified medical practitioner. |
| | Philip Walker Studentship in Pathology. | £200 per annum. | 2 years. | By application to the Professor of Pathology. | Holder must carry on Research under the direction of the Professor of Pathology. |
| | Radcliffe Prize (endowed by University College). | £50. | | Original Research. | Awarded biennially. |
| UNIVERSITY OF DURHAM | Four Scholarships. | £25 a year each. | 4 years. | The Examination will be the *September* Matriculation Examination. Candidates must take ENGLISH, LATIN, ARITHMETIC, EUCLID, ALGEBRA, GEOGRAPHY, ENGLISH HISTORY, with GREEK or GERMAN, or both. (See College Calendar for special books.) | Candidates desirous of being admitted as Medical Students. The successful Candidates must take out their entire curriculum at the University of Durham College of Medicine, Newcastle-upon-Tyne. |
| | Pears Scholarship. | £50 a year. | 3 years. | MATRICULATION EXAMINATION. | |
| *College of Medicine* ... ... | Masonic Scholarship. | £15 a year. | 3 years. | Ditto. | |
| | Dickinson Scholarship. | Interest on £400 and Gold Medal. | — — | Examination in MEDICINE, SURGERY, MIDWIFERY, and PATHOLOGY. | Full Students of the College of Medicine who have passed the third M B. examination. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| UNIVERSITY OF DURHAM *(College of Medicine)—continued.* | Tulloch Scholarship. | Interest on £400. | — — | Examination in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | No Student is eligible who commenced his medical curriculum more than two academical years before the date of examination. |
| | Charlton Memorial Scholarship. | Interest on £700. | — — | Examination in Medicine. | Open to full Students of the College entered for the class on the Principles and Practice of Medicine. |
| | Gibb Scholarship. | Interest on £500. | — — | Awarded annually as a Scholarship in PATHOLOGY to full Student who passes the best examination in that subject. | No Student eligible after completion of his curriculum. |
| | Luke Armstrong Memorial Scholarship. | Interest on £680 | — — | Original Essay on some subject in COMPARATIVE PATHOLOGY. (If no Essay of sufficient merit be presented the Scholarship may be awarded to the Candidate who, in passing the first part of the Examination for the B.Hy. Degree, obtains the highest number of marks in COMPARATIVE PATHOLOGY during the year.) | Open to all Graduates in Medicine or Hygiene and candidates for these degrees who have spent six months at the University, and whose age does not exceed 30 years. |
| | Stephen Scott Scholarship. | Interest on £1000. | — — | Original Essay on any Surgical subject. | Any Graduate in Medicine or Surgery of the University or any Student of the College of Medicine. Student's age must not exceed 30 years. |
| | Heath Scholarship | Interest on £4000. | — — | For 1908 – Original Essay on INJURIES AND DISEASES OF THE ARTERIES, VEINS, AND CAPILLARIES, AND THEIR TREATMENT. | All Graduates in Medicine or Surgery of the University are eligible. |
| | Gibson Prize. | Interest on £225. | .... | Examination in subject of MIDWIFERY and DISEASES OF WOMEN AND CHILDREN. | Open to Students who have attended one course of lectures on Midwifery and Diseases of Women and Children. |
| | Turnbull Prize and Medal. | — — | .... | Examination in SURFACE ANATOMY. | Open to Students at end of their second Winter Session. |
| *Royal Infirmary* ... — — | Goyder Memorial Scholarship. | Interest on £325. | Annually. | Student who most distinguishes himself in CLINICAL MEDICINE and CLINICAL SURGERY at the Royal Infirmary. | |
| UNIVERSITY OF BIRMINGHAM | Myers Travelling Studentship. | £150. | 1 year. | Awarded by vote of committee to M.B., Ch.B.Birm., B.Sc. candidates. | Tenable at one of certain German universities. |
| | Ingleby Scholarship. | £10. | 1 year. | Awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of MIDWIFERY and GYNÆCOLOGY. | |
| | Sydenham Scholarship. | £42. | 3 years. | Award of Council to orphan sons of Medical Practitioners. | |
| | Sands Cox Scholarship. | £42. | 3 years. | Awarded to the candidate, not being more than 19 years of age, taking the highest marks at the June Matriculation | |
| | Dental Scholarship. | £37 10s. | 3 years. | Open Competitive Examination in subjects learned during apprenticeship. | |
| | Four Queen's Scholarships. | £10 10s. each. | — — | Awarded to candidates taking highest "first-class" marks at Second, Third, Fourth, and Final M.B. Examinations. | |
| | George Henry Marshall Scholarship. | £10. | Annually. | For the encouragement of Research Work in OPHTHALMOLOGY. | |
| UNIVERSITY OF MANCHESTER | General Entrance Scholarships. | — — | — — | — — | Open to candidates above 16 and under 20 years of age |
| | Rogers. | £40. | 2 years. | Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION. | |
| | Seaton. | £40. | 2 years. | Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION. | |
| | Dalton. | £40. | 2 years. | Subjects: EUCLID, ALGEBRA, TRIGONOMETRY, GEOMETRY, and CONIC SECTIONS. | |
| | Cartwright.* | £35. | 3 years. | Ditto. | |

---

* Open to men candidates only.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| UNIVERSITY OF MANCHESTER—*continued.* | Hulme. | £35. | 3 years. | Subjects: ENGLISH LANGUAGE and LITERATURE, HISTORY, GEOGRAPHY, and LATIN, GREEK FRENCH, or GERMAN (any two subjects). | |
| | James Gaskill. | £35. | 2 years. | MATHEMATICS, MECHANICS, and CHEMISTRY. | |
| | Dora Muir.† | £25. | 3 years. | Ditto. | |
| | Manchester Grammar School.* | £25. | 3 years. | MATHEMATICS, ENGLISH ESSAY with CLASSICS and PHYSICAL SCIENCE in alternate years. | |
| | Kay-Shuttleworth.* | £30. | 3 years. | Subjects as in James Gaskill Scholarships. | Pupils of Sedbergh, Giggleswick, or Burnley Grammar School. |
| | Theodores Exhibition. | £15. | 1 year. | Subjects: FRENCH and GERMAN | Successful candidates are required to enter for a regular University course. |
| | Matriculation Entrance Scholarship. | £30. | 3 years. | Awarded on results of July Matriculation Examination. | |
| | Entrance Scholarships in Medicine. | £100. | ...... | One for proficiency in Arts.<br>One for proficiency in Science. | No limit as to age. £60 set off against University fees and £40 against Infirmary fees. |
| | Platt Biological Scholarship. | £50. | 1 year. | Awarded to candidate who shows the most promise of ability for prosecuting original research in ZOOLOGY and BOTANY. | To devote his time to research in Zoology or Botany. |
| | Robert Platt Physiological Scholarship. | £50. | 2 years. | Subjects: PHYSIOLOGY and COMPARATIVE ANATOMY. | Open to Candidates whether or not previously students of the University. |
| | Dauntesey Medical Scholarships (two). | £35 each. | 1 year. | Subjects: ZOOLOGY, BOTANY, and CHEMISTRY. | These Scholarships are open to all students preparing for a Medical Course who shall not have attended Lectures or Laboratory Courses on Human Anatomy or Physiology, or a purely Medical or Surgical Course in the University or any other Medical School in the United Kingdom. Candidates must not be more than 25 years of age on October 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies. |
| | Robert Platt Exhibitions (two). | £15 each. | —— | —— | First and second year students in Physiology. |
| | Sidney Renshaw Exhibition. | £15. | —— | —— | Second year students in Physiology. |
| | Professor Tom Jones Exhibition in Anatomy. | £25. | ...... | ...... | First year students in Anatomy. |
| | Turner Scholarship. | £20. | —— | Subjects: MEDICINE, PATHOLOGY (written and practical), OBSTETRICS, PRACTICAL SURGERY, OPHTHALMOLOGY, FORENSIC MEDICINE, and PUBLIC HEALTH. | Students who have completed a full course of medical study in the University are eligible only. |
| | John Henry Agnew Scholarship. | £30. | —— | The Scholarship is awarded on the results of an Examination, partly written and partly clinical, on DISEASES OF CHILDREN, MEDICAL AND SURGICAL. | Open for competition annually to all students in the Medical Department who have pursued a regular course of medical study in the University extending over a period of not less than 4 years or more than 6, and who have attended the course of lectures on Diseases of Children. |

---

* Open to men candidates only.

† Open to women candidates only.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| UNIVERSITY OF MANCHESTER—*continued.* | Professor Tom Jones Memorial Surgical Scholarship. | £100. | 1 year. | The scholar will be elected on the result of evidence submitted by him. | Candidates must have either graduated in the University or have obtained the Diploma of the Conjoint Colleges. |
| | Dumville Surgical Prize. | £15. | — — | Subjects: SYSTEMATIC, PRACTICAL, and OPERATIVE SURGERY, SURGICAL ANATOMY, and SURGICAL PATHOLOGY. | |
| | Honorary Research Fellowships. | — — | 2 years. | Conferring the right of free use of the Laboratories. Awarded generally in October on application, with evidence of capacity for independent investigation. | |
| | Leech Fellowship. | £100. | ...... | Awarded annually for excellence and promise in one or more of tbe subjects of the Second or Final M.B. Examination. | |
| | Graduate Scholarship in Medicine. | £25 to £50. | 1 year. | Awarded on results of Second Examination for M.B., Ch.B. | |
| UNIVERSITY COLLEGE, BRISTOL, BRISTOL ROYAL INFIRMARY, AND BRISTOL GENERAL HOSPITAL | Medical Entrance Scholarship. | £75. | — — | Competitive Examination in Subjects of GENERAL EDUCATION. | |
| | Tibbits Surgical Prize. | £9 9s. | — — | Proficiency in PRACTICAL SURGERY. | Open to Perpetual Students of Faculty of Medicine, University College, Bristol. |
| | Martyn Memorial Pathological Prizes. | Two annually, of £10 each. | — — | Competitive Examination in PATHOLOGY and MORBID ANATOMY. | |
| | A Gold and a Silver Medal. | — — | — — | Given by the Committees of the two Institutions to most distinguished Students of Fifth Year. | |
| *Bristol Royal Infirmary* ... | Suple Medical Prize. | Gold Medal value £5 5s. and £7 7s. in money. | — — | Competitive Examination in MEDICINE to Students of Fourth and Fifth Years. | Restricted to Perpetual Students who have done the necessary qualifying work at the Bristol Royal Infirmary. |
| | Suple Surgical Prize. | Gold Medal value £5 5s. and £7 7s. in money. | — — | Competitive Examination in SURGERY of Students of Third and Fourth Years. | |
| | Henry Clark Prize. | £11 11s | — — | Class Work of Third-year Students. | |
| | Crosby Leonard Prize. | £7 7s. | — — | Examination in CLINICAL SURGERY. | |
| | Augustin Prichard Prize. | £6 6s. | — — | Examination in SURGICAL ANATOMY. | |
| *Bristol General Hospital* ... | Sanders Scholarship. | £22 10s. | — — | Competitive Examination in MEDICINE, SURGERY, and MIDWIFERY of Fourth-year Students. | Restricted to Perpetual Students who have done the necessary qualifying work at the Bristol General Hospital. |
| | Clarke Scholarship. | £15. | — — | Competitive Examination in SURGERY among Students of Fourth Year. | |
| | Marshall Prize. | £12. | — — | To the best Surgical Dresser of the Fourth Year. | |
| THE UNIVERSITY, LEEDS (SCHOOL OF MEDICINE) | Entrance Scholarship. | £73 2s. 6d. | — — | Joint Matriculation Board Examination held in July. | Complete Course of Lectures and Practical Classes at Leeds School. |
| | Infirmary Scholarship. | £42. | — — | On the results of the First M B. Examination of the University of Leeds. | Complete Course of Hospital Practice and Clinical Lectures at Leeds Infirmary. |
| | Hardwick Prize. | £10. | — — | Competitive Examination in CLINICAL MEDICINE among Clinical Clerk Students of two years' standing. | |
| | McGill Prize. | £10. | — — | Competitive Examination among advanced Surgical Students in CLINICAL SURGERY. | |
| | Thorp Prizes. | £10 and £5. | — — | Examinations in Forensic Medicine and Hygiene. | |
| | Thorp Prize Essay. | £15. | — — | Essay or Research on some subject connected with FORENSIC MEDICINE, TOXICOLOGY, or PUBLIC HEALTH. | Every three years to former students of the Leeds School. |
| | Scattergood Prize. | £5. | .... | Examination in MIDWIFERY. | |
| UNIVERSITY OF LIVERPOOL | Robert Gee Entrance Scholarships (two annually). | £25 each. | 2 years. | Joint Matriculation Board Examination held in July. | First M.B. Course. |
| | Lyon Jones Scholarship. No. 1. | £21 per annum. | 2 years. | Competitive Examination among Junior Students in First M.B. SUBJECTS. | Perpetual Course at the University. |
| | ,, No. 2. | £21. | — — | Competitive Examination among Senior Students in ANATOMY, PHYSIOLOGY, and THERAPEUTICS. | |
| | Derby Exhibition. | £15. | — — | Competitive Examination among Fourth- or Fifth-year Students in CLINICAL SUBJECTS. | |
| | Holt Fellowships (Physiology and Pathology). | £100 each. | 1 year. | Vote of Faculty to Student after graduation. | Teaching and Original Research. |
| | Gee Fellowship (Anatomy). | £100. | 1 year. | Ditto. | Teaching and Research. |
| | Alexander Fellowship (Pathology). | £100. | 1 year. | Ditto. | Research in Pathology. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| **UNIVERSITY OF LIVERPOOL**—*continued.* | Johnston Colonial Fellowship (Pathology and Bacteriology). | £100. | 1 year. | Vote of Faculty to Student after graduation. | Research in Pathology. |
| | John W. Garrett International Fellowship (Physiology and Pathology). | £100. | 1 year. | Ditto. | Ditto. |
| | Stopford Taylor Fellowship (Dermatological Pathology). | £100. | 1 year. | Ditto. | Ditto. |
| | Thelwall Thomas Fellowship (Surgical Pathology) | £100. | 1 year. | Ditto. | Ditto. |
| | Ethel Boyce Fellowship in Gynæcological Pathology. | £100. | 1 year. | Vote of Faculty to graduate. | Research. |
| | Bickersteth Scholarship Surgical Pathology.) | £50. | 1 year. | Ditto. | Ditto |
| **SHEFFIELD UNIVERSITY** | Entrance. | £116. | .... | Examination. | Must read for Degree in Medicine. |
| | Special (1907) (for Women only). | £100. | .... | Special examination. | Ditto. |
| | Staff (Special 1907). | £50. | .... | Ditto. | Ditto. |
| | Staff (Special 1907). | £50. | .... | Ditto. | Ditto. |
| | Town Trust (two). | Each £50 per annum. | 3 years. | Ditto. | Boys educated in Sheffield. |
| | Town Trust (one). | £50 per annum. | 3 years. | Ditto. | Girls educated in Sheffield. |
| | Town Trust (two). | £60 per annum. | 3 years. | Ditto. | Boys or girls educated in Sheffield. |
| | Kaye, in Anatomy and Physiology. | £22 10s. | 1 year. | Ditto. | Students who have completed second Winter Session; native of Sheffield |
| | Town Trust Fellowship. | £75 per annum. | 1 year. | The Senate considers each application. | Graduates of the University. |
| | Mechanics' Institute. | £50 per annum. | 1 year, renewable to a second. | Ditto. | Post-graduate Scholarship. |
| | Frederick Clifford. | £50 per annum. | 2 years. | Ditto. | Graduates of the University residing within 40 miles. |
| **EDINBURGH UNIVERSITY** | *Sibbald Bursaries (1 or 2 annually). | Each £30 per annum. | 3 years. | Competitive Examination in Preliminary Subjects among entrants. | Continued Study. |
| | *Heriot Bursaries (7 for men and 1 for women annually). | Each £30 per annum. | 3 years. | Ditto. | Ditto. |
| | *Thomson Bursaries (2 annually). | Each £25 per annum. | 4 years. | Distinction in Medical Preliminary Examination. | Ditto. |
| | *Grierson Bursary.<br>,, No. 1. | £20. | 1 year. | Ditto | Ditto. |
| | *Crichton Bursaries (2 annually). | Each £50 per annum. | 4 years. | Distinction in Medical Preliminary Examination, with extra subjects | Born in Scotland. |
| | * Mackie Bursary.<br>,, No. 1. | £30 per annum. | 2 years. | Vote of Faculty. | Pecuniary circumstances requiring assistance, &c. |
| | *Junior J. A. Carlyle Bursary. | £28. | 1 year. | Distinction in Class Examinations in ANATOMY and CHEMISTRY. | |
| | * Coldstream Memorial Scholarship. | £25 per annum. | 5 years. | — — | Intention to become Medical Missionary, &c. |
| | * Vans Dunlop Scholarship.<br>,, No. 1. | £100 per annum. | 3 years. | First place in MEDICAL PRELIMINARY EXAMINATION. | Continued study. |
| | ,, No. 2. | £100 per annum. | 3 years. | Competitive Examination in CHEMISTRY, ANATOMY, and PHYSICS. | Ditto. |
| | ,, No. 3. | £100 per annum. | 3 years. | Ditto in BOTANY and ZOOLOGY. | Ditto. |
| | *Thomson Scholarship. | £40 per annum. | 4 years. | Competitive Examinations in BOTANY, ZOOLOGY, and MECHANICS. | |
| | † Mackie Bursary.<br>,, No. 2. | £30 per annum. | 2 years. | Vote of Faculty. | Pecuniary circumstances requiring assistance, &c. |
| | † Grierson Bursary.<br>,, No. 2. | £20. | 1 year. | Competitive Examination in CHEMISTRY, BOTANY, ZOOLOGY, and PHYSICS. | Continued study. |
| | † Senior J. A. Carlyle Bursary. | £28. | 1 year. | Distinction in Class Examinations in ANATOMY and PHYSIOLOGY. | Ditto. |
| | † Sibbald Scholarship. | £40 per annum. | 3 years. | Competitive Examination in CHEMISTRY, BOTANY, ZOOLOGY, and PHYSICS. | Ditto. |
| | † Vans Dunlop Scholarship.<br>,, No 4. | £100 per annum. | 3 years. | Competitive Examination in PHYSIOLOGY and SURGERY. | Ditto. |
| | † Neil Arnott Prize. | £37 10s. | — — | Distinction in NATURAL PHILOSOPHY in the M.A. Examination. | Ditto. |

* For Students entering on or in their First Year. † For Students entering on or in their Second Year.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| **EDINBURGH UNIVERSITY** —*continued.* | ‡ Grierson Bursary.<br>,, No. 3. | £20. | 1 year. | Competitive Examination in ANATOMY and PHYSIOLOGY. | Continued study. |
| | § Syme Surgical Fellowship. | £100 per annum. | 2 years. | Competitive Thesis by M.B. of not more than three years' standing. | |
| | § Goodsir Memorial Fellowship. | £100 per annum. | 2 years. | Competitive Thesis by M.B., &c., of not more than three years' standing. | |
| | § Leckie Mactier Fellowship. | £80 per annum. | 3 years. | Competitive Examination among M.B.'s of not more than three years' standing. | |
| | § Freeland Barbour Fellowship. | £100. | 1 year. | Highest Marks in ANATOMY, PHYSIOLOGY, and PATHOLOGY in Professional Examinations. | One year's research in Midwifery. |
| | § Allan Fellowship. | About £40. | 1 year. | Competitive Examination in CLINICAL MEDICINE and CLINICAL SURGERY. | |
| | § Vans Dunlop Scholarship. | | | | |
| | ,, No. 5. | £100 per annum. | 3 years. | Competitive Examination in ANATOMY and PHYSIOLOGY. | Continued study and research. |
| | ,, No. 6. | £100 per annum. | 3 years. | Ditto in MATERIA MEDICA (including PHARMACOLOGY). | Ditto. |
| | ,, No. 7. | £100 per annum. | 3 years. | Ditto in PATHOLOGY and FORENSIC MEDICINE and PUBLIC HEALTH. | Ditto. |
| | § Murchison Memorial Scholarship. | Interest on £1000. | 1 year. | Competitive Examination in CLINICAL MEDICINE. | |
| | § Stark Scholarship in Clinical Medicine. | £112. | 1 year. | Competitive Examination in CLINICAL MEDICINE. | Research in Clinical Medicine. |
| | § Buchanan Scholarship. | £40. | 1 year. | Competitive Examination and Class Work in MIDWIFERY and GYNÆCOLOGY. | Work in Gynæcological Ward, &c. |
| | § James Scott Scholarship. | £32 10s. | 1 year. | Competitive Examination and Class Work in MIDWIFERY. | Work in Maternity Hospital. |
| | § Ettles Scholarship | £31. | 1 year. | Most distinguished M.B., Ch.B. of year. | |
| | § Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology. | £100 each per annum. | 1, 2, or 3 years. | Competitive Examination for Graduates of the University. | Continued research. |
| | § Mouat Scholarship. | £55 and Medal. | 1 year. | Class and Degree Examinations in PRACTICE OF PHYSIC (MEDICINE). | Continued study in Medicine. |
| | § Grierson Bursary.<br>,, No. 4. | £10. | 1 year. | Competitive Examination in MATERIA MEDICA. | Continued study. |
| | ,, No. 5. | £10. | 1 year. | Competitive Examination in PATHOLOGY. | Ditto. |
| | § M'Cosh Graduate's Bursary and M'Cosh Medical Bursary (for Research). | Income of £5500. | 1 year. | Distinction in Professional Subjects, and sufficient knowledge of FOREIGN LANGUAGES. | Study or Research in Medical Schools of Europe. |
| | § Gunning Victoria Jubilee Prizes (2 awarded annually). | Each £50. | —— | Thesis or Original Research in ANATOMY, PHYSIOLOGY, ZOOLOGY, BOTANY, CHEMISTRY, MATERIA MEDICA, SURGERY, PRACTICE OF PHYSIC, PATHOLOGY, OBSTETRICS, and MEDICAL JURISPRUDENCE and PUBLIC HEALTH, respectively. | |
| | § Theses Gold Medals. | —— | —— | Candidates for M.D. who present Theses of high merit. | |
| | Conan Doyle Prize. | £32. | —— | Most distinguished Graduate of year from South Africa. | |
| | § Wightman Prize. | £12. | —— | Competitive Reports on Clinical Medicine Cases. | |
| | § Beaney Prize. | £32 10s. | —— | Highest Marks in ANATOMY, SURGERY, and CLINICAL SURGERY, in M.B. and Ch.B. Examinations. | |
| | § Ellis Prize. | £28 per annum. | —— | Essay on ANIMAL OR VEGETABLE PHYSIOLOGY. | |
| | § Cameron Prize. | Annual Proceeds of £2000. | —— | Most valuable addition to PRACTICAL THERAPEUTICS during preceding 5 years. | |
| | § Milner Fothergill Gold Medal. | About £20. | —— | Essay on PHARMACOLOGICAL or THERAPEUTIC SUBJECT. | |
| | ‖ Mackay Smith Scholarship in Chemistry. | £25 per annum. | 2 years. | Competitive Examination in CHEMISTRY among University Students. | Continued study of Chemistry. |
| | ‖ Houldsworth Scholarship. | £40. | 1 year. | Competitive Examination in MATERIA MEDICA among University Students or Graduates. | Research in Pharmacology. |
| | ‖ Mackenzie Bursaries (2 annually). | £20. | ...... | Industry and Skill in PRACTICAL ANATOMY. | |
| | § Pattison Prize. | About £11 7s. 6d. | ...... | Competitive Reports on CLINICAL SURGERY CASES. | |
| | Dobbie Smith Gold Medal. | —— | —— | Essay on BOTANICAL SUBJECT. | |
| | Anderson Henry Prize. | Proceeds of £300 accum. for 3 years. | —— | Ditto. | |
| | Gilfillan Memorial Prize. | About £10. | —— | Most distinguished Woman Graduate of year. | |

---

‡ For Students entering on their Third Year.

§ For Students entering on or in their Fourth or Fifth Year, or for Graduates.

‖ For Students of any year (or standing of candidates not stated).

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| GLASGOW UNIVERSITY ... | Two Highland Society Bursaries. | £25 each. | 5 years. | Open 1907. Awarded on results of Preliminary Examination. | Open to medical students of Highland descent. |
| | Mackintosh Mental Science Bursary. | £31. | 1 year. | — — | Open for competition to students of medicine of either sex attending the lectures on Insanity. |
| | Monteith Bursary. | £21. | 2 years. | Vacant 1907. Examination in ANATOMY and PHYSIOLOGY. | Awarded on results of Second Professional Examination. |
| | Dr. Thos. Gibson Bursary. | £36. | 4 years. | Vacant 1907. Competition by Students at the First Professional Examination. | Open to medical students preparing to be missionaries in connexion with the Church of Scotland. |
| | Coats Scholarship. | £80. | 1 year. | Special Examination in PATHOLOGY. Vacant 1907. | Open to Graduates in Medicine of not more than three years' standing. Holder to prosecute research in Pathology. |
| | John Macfarlane Bursary. | £40. | 3 years. | Vacant 1908. Examination in ANATOMY, CHEMISTRY, and BOTANY. | Open to medical students entering on their Second Winter Session. |
| | Lorimer Bursary. | £24. | 3 years. | Vacant 1907. Examination in ANATOMY, CHEMISTRY, and BOTANY. | Open to medical students entering on their Second Winter Session. |
| | One Armagh Bursary in Medicine. | £48. | 3 years. | Competition by Students who are presenting themselves for the Final Examination for the degree of M.A. with Honours in MENTAL PHILOSOPHY. | Open to students of either sex who have taken the course of study for graduation in Arts and intend to study Medicine. |
| | One Armagh Bursary in Medicine. | £48. | 2 years. | Competition by Students who are presenting themselves for the Final Examination for the degree of M.A. with Honours in CLASSICS. | Ditto. |
| | Taylor Bursary. | £7. | 4 years. | Appointment by the Senate. | Open to students of either sex in any faculty. |
| | William Gardiner Bursary. | £14. | 2 years. | Vacant 1907. Competition in PHYSIOLOGY, CHEMISTRY, and PHYSICS of PROFESSIONAL EXAMINATIONS. | Open to medical students of either sex. |
| | Rainy Bursary. | £20. | 2 years. | Vacant 1907. Examination in ANATOMY, PHYSIOLOGY, CHEMISTRY, BOTANY, and ZOOLOGY. | Open to medical students entering on their Fourth Winter Session. |
| | Two Paterson Bursaries. | £25 and £20. | 4 years. | Vacant 1907. Examination in MATHEMATICS and DYNAMICS. | Open to medical students of First or Second Session. |
| | Brunton Memorial Prize. | £10. | 1 year. | Awarded annually to the most distinguished Graduate in MEDICINE of the year. | |
| | Dobbie Smith Gold Medal. | ... | — — | Awarded annually for the best essay on any subject within the limits of the science of BOTANY. | All matriculated students of 1905–6 or 1906–7 may be competitors. |
| | Two Arnott Prizes. | £25 and £15. | year. | Examination in PHYSIOLOGICAL PHYSICS, &c. | |
| | Andrew and Bethia Stewart Bursary. | £50. | 3 years. | Special Examination. | Candidates must be M.A. of Glasgow University. |
| | Weir Bursary. | £16. | 1 year. | Awarded on result of Second and Third Professional Examinations. | |
| QUEEN'S COLLEGE, BELFAST ... ... ... ... | Ten Junior Scholarships for Matriculated Students, two for each of the five years' curriculum. | £20 each. | 1 year. | Examination at the commencement of session. | Open to matriculated Medical Students of either sex. |
| | Mackay Wilson Travelling Medical Scholarship. | £100. | 1 year. | Appointed by the Council. | Holder must study for nine months in some foreign school of medicine approved by the Council. |
| ROYAL COLLEGE OF SURGEONS IN IRELAND, SCHOOLS OF SURGERY | Class Prizes. | £100. | — — | Proficiency in Class Examination. | Open to student of class. |
| | Stoney Gold Medal. | £3 15s. | ...... | For ANATOMY Class. | Open to students of class. |
| | Surgery Gold Medal. | £3 15s. | ...... | For PRACTICAL SURGERY Class. | Open to students of class. |
| | Carmichael Scholarship. | £15. | — — | Examination in ANATOMY, PHYSIOLOGY, HISTOLOGY, CHEMISTRY, MATERIA MEDICA, and PHARMACY. | Open to students of the third year. |
| | Mayne Scholarship. | £8. | — — | SURGERY, MEDICINE, PATHOLOGY, MIDWIFERY, and DISEASES OF WOMEN. | Open to students of third and fourth year. |
| | Barker Bequest. | £31 0s | — — | For best DISSECTION. | Open to all medical students. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ROYAL UNIVERSITY OF IRELAND ... ... ... ... | Travelling Medical Scholarship. | £100. | — — | The subjects are in rotation: (1) ANATOMY AND HISTOLOGY; and (2) PHYSIOLOGY AND PATHOLOGY. | Those who have passed the Medical Degrees Examination either in the year of the scholarship examination or in the year immediately preceding are alone eligible. |
| | Dr. Henry Hutchinson, Stewart Medical Scholarships. | | | | |
| | ,, No. 1. | £10. | 3 years. | Competition in the subjects of the (Autumn) second examination in MEDICINE. | Candidates must present themselves after the lapse of not more than one medical year from the time of passing the first examination in medicine. |
| | ,, No. 2. | £50. | 3 years. | Subjects include PSYCHOLOGICAL MEDICINE, DISEASES OF THE NERVOUS SYSTEM, and ANATOMY, PSYCHOLOGY and PATHOLOGY OF BRAIN, CORD, AND NERVES. | Competition among medical graduates of not more than 3 years' standing for proficiency in the knowledge of Mental Diseases. Fee £2. |
| | Medical Studentship. | £200. | 2 years. | In 1907 PHYSIOLOGY and PHYSIOLOGICAL CHEMISTRY. | Open to Graduates in Medicine of the University. Fee £2. |
| | Exhibition at first Examination in Medicine. | | | | |
| | ,, No. 1. | £20. | — — | — — | |
| | ,, No. 2. | £20. | — — | — — | |
| | ,, No. 3. | £10. | — — | — — | |
| | ,, No. 4. | £10. | — — | — — | |
| | Exhibition at second Examination in Medicine. | | | | |
| | ,, No. 1. | £25. | — — | — — | |
| | ,, No. 2. | £25. | — — | — — | |
| | ,, No. 3. | £15. | — — | — — | |
| | ,, No. 4. | £15. | — — | — — | |
| | Exhibition at third Examination in Medicine. | | | | |
| | ,, No. 1. | £30. | — — | — — | |
| | ,, No. 2. | £30. | — — | — — | |
| | ,, No. 3. | £20. | — — | — — | |
| | ,, No. 4. | £20. | — — | — — | |
| | M.B., B Ch., and B.A.O. Examinations. | | | | |
| | ,, No. 1. | £40. | — — | — — | |
| | ,, No. 2. | £40. | — — | — — | |
| | ,, No. 3. | £25. | — — | — — | |
| | ,, No. 4. | £25. | — — | — — | |
| QUEEN'S COLLEGE, GALWAY ... ... ... ... | Eight Junior Scholarships. | £25 each and half fees. | 1 year. | Competitive Examination at the commencement of session. | Students of either sex must be of the standing of the year, and may be of any recognised school of medicine. |
| QUEEN'S COLLEGE, CORK | Eight Junior Scholarships for Matriculated Students, two for each of first four years of curriculum. | £25. | 1 year. | Examination at commencement of session. | Open to matriculated students of either sex. |
| | Blayney Scholarship, in fifth year of curriculum. | £32. | 1 year. | Ditto. | Ditto. |
| | Senior Exhibition, in fifth year of curriculum. | £30. | 1 year. | Ditto. | Ditto. |
| | Three Exhibitions in Practical Medicine, Surgery, and Midwifery respectively. | £15 each. | ...... | Examination at end of medical session. | |

# THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

DURING the year considerable changes have been made in the regulations for the Royal Army Medical Corps and Indian Medical Service. The conditions of service in the medical department of the Royal Navy remain much the same as they were at the date of the issue of the Students' Number in 1906. In our issue of Nov. 17th last we commented on the introductory address delivered by Sir Lambert Ormsby, the senior surgeon to the Meath Hospital, Dublin, and a past President of the Royal College of Surgeons in Ireland. Sir Lambert Ormsby appended to his address a forcible indictment of the present conditions in the medical service of the Royal Navy. We pointed out in our issue that, while we must agree that there are defects in the service, things are not so bad as Sir Lambert Ormsby would have us believe. In the matter of foreign service and of service ashore there is room still for considerable reform—many of the shore appointments are made not for conspicuous ability but in consequence of conspicuous influence. A fair and proper roster for foreign service should certainly be in force. The control of the sick-berth staff on shore should be entirely in the hands of the principal medical officer, who should have precisely the same power when serving in a naval medical establishment on shore as is enjoyed by his military *confrères* in the Royal Army Medical Corps. It is ridiculous that a senior medical officer should have no power to punish his subordinates in hospitals and sick quarters. In the matter of "medical guard," it should be laid down in the King's Regulations that medical guard is to be recognised by the captains and commanding officers of all ships, thus putting it beyond the capricious exercise of executive authority. In conducting medical surveys which are held for purely medical purposes an Inspector-General should certainly not be required to sit, as he is at present, under the presidency of a captain or commander of the executive branch. It is the general desire of the service that when a medical officer is tried by court-martial some of the members constituting the court should be medical officers of high rank. In the matter of salutes, of boats in harbour, of honours, and the appropriation of cabins there is much to remedy before contentment can reign in the Medical Service. Naval medical officers are subjected to many petty annoyances which could be remedied and prevented, we believe, without any loss of discipline or efficiency. Sir Lambert Ormsby's advice to the Dublin students is to "avoid the Naval Medical Service for the present, which will compel the authorities, in order to get good men, to rectify the glaring defects by placing the naval medical officer in his proper position and giving him in all fairness equal advantages, socially and professionally, with his less scientifically educated executive brother officer." Some of the grievances pointed out by Sir Lambert Ormsby are real defects, and we hope to see changes introduced during the coming year which will make the position of the naval medical officer a more comfortable one. A few weeks ago the Lords Commissioners of the Admiralty issued an order that naval medical officers are not to receive fees for evidence at coroners' inquests or for performing post-mortem examinations on a coroner's order, and that they are to consider this part of their duties; this order is manifestly unfair in the case of a man on half-pay.

In the Army Orders for February, 1907, the terms of a Royal Warrant, dated Jan. 9th, are set forth. The Warrant amends that of March 19th, 1906, in accordance with new provisions and with a view to giving a practical and working effect to them. It deals with promotion, rates of pay, half and retired pay, and the new arrangements relating to the administrative staff, with the apparent object of simplifying and confirming the new system of army administration which has grown up and been practically established. It contains the new regulations connected with a new and very extended system of instruction in sanitation throughout the army. In the early part of this year the Secretary of State for War approved of the amalgamation of the Army Medical Advisory Board and the Army Hospital and Sanitary Committee. The reconstituted Army Medical Service Advisory Board is composed of the Director-General, Army Medical Service, chairman; the Deputy Director-General, vice-chairman; Colonel D. Bruce (as expert in tropical diseases); Colonel Scott-Moncrieff, C.I.E., R.E., assistant director of fortifications and works; Lieutenant-Colonel C. H. Melville (as expert in sanitation); and the following civilian members: Sir F. Treves, civilian surgeon; Professor J. Rose Bradford (University College, London), civilian physician; Dr. Louis Parkes (consulting sanitary adviser to the Office of Works), civilian sanitary expert; Dr. M. S. Pembrey (Guy's Hospital), civilian physiologist; and Sir Charles A. Cameron, representing sanitation in Ireland; with Surgeon-General A. M. Branfoot, as representative of the India Office. Lieutenant-Colonel C. H. Melville is the secretary. The Advisory Board has been made more distinctly advisory in its functions. The committee (or board) will carry out such scientific investigations as they may deem requisite for the elucidation of points referred to them. For these purposes they will have power to co-opt members of the staff of the Royal Army Medical College. The new conditions have added to the powers and responsibilities of the Advisory Board and will enlarge its sphere of usefulness. The changes should also have the effect of putting the Medical Service in a more defined and independent position and one more worthy of the responsible scientific functions which it is called upon to discharge.

Candidates for the Royal Army Medical Corps must note that in future there can be no certainty of their obtaining a higher rank in the army than that of Major, since the number of Lieutenant Colonels is now limited.

We note with much satisfaction that in the printed conditions of service in the Indian Medical Service the pay and prospects in civil employment are set forth at greater length than was formerly the custom. We are also glad to see that the date of an officer's first commission has been altered in accordance with our suggestions.

## ROYAL NAVY MEDICAL SERVICE.

### REGULATIONS FOR THE ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commencement of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth. He must also produce a certificate of moral character, up to date, and a recommendation signed by a clergyman or magistrate, to whom he has been for some years personally known, or by the president or senior professor of the college at which he was educated.

He must be registered under the Medical Act in force, as qualified to practise medicine and surgery in Great Britain and Ireland.

He must declare (1) his age and date and place of birth; (2) that he is of pure European descent and the son either of natural-born British subjects or of parents naturalised in the United Kingdom; (3) that he labours under no mental or constitutional disease or weakness, nor any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; (4) that he is ready to engage for general service at home or abroad, as required; (5) whether he holds, or has held, any commission or appointment in the public services; and (6) that he is registered under the Medical Act in force as duly qualified professionally, and what diplomas, &c., he holds.[1]

He must be free from organic or other diseases, and his physical fitness will be determined by a Board of Medical Officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's Test Types. The certificates of registration, character, and birth, must accompany the declaration, which is to be filled up and returned as soon as possible, addressed as above.

The examination will consist of two parts as follows:—(1) Compulsory subjects; (2) voluntary subjects. The admission of candidates will be determined solely by the number of marks gained in the compulsory subjects. Successful candidates who qualify in voluntary subjects will have the marks so obtained added to those gained in the compulsory subjects, and their position on the list will be determined by the total of marks for both compulsory and voluntary subjects.

Candidates will be examined by the Examining Board in the following compulsory subjects and the highest number of marks attainable will be distributed as follows (a fee of £1 will have to be paid by each candidate to entitle him to take part in the competition): (*a*) medicine, materia medica, therapeutics and general hygiene, 1200 marks; (*b*) surgery and surgical anatomy, 1200 marks. The examination in medicine and surgery will be in part practical and will include, beyond papers, the examination of patients, the examination of pathological specimens, a knowledge of bacteriology, the performance of operations on the dead body, and the application of surgical apparatus. The attention of candidates is especially drawn to the importance of the section of Operative Surgery, as a competent knowledge in this subject is essential in order to qualify for a commission. No candidate shall be considered eligible who shall not have obtained at least *one-third* of the maximum marks in each of the above *compulsory subjects.*

Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be—Natural Sciences: chemistry (300); physiology (300); zoology (300); botany (300); and geology and physical geography (300). No candidate will be allowed to present himself for examination in more than two of these subjects. French and German (300 each), 600 marks. A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects.* The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German. The examination in chemistry will include the general principles of inorganic and organic chemistry; the preparation and properties of the chief non-metallic and metallic elements and their compounds; the preparation, properties and classification of the more important compounds, such as marsh gas, ethylene, acetylene, methyl and ethyl alcohols, glycerin, ether, formic, acetic, lactic and oxalic acids; cyanogen and cyanides; carbohydrates; fats; proteids. The examination in physiology will comprise the minute structure and functions of the various tissues and organs of the body; the physiology of the blood; the nature of food and the processes of its digestion; the mechanics of the circulation and of respiration; the physiology of nutrition, secretion, and excretion; animal heat, the nature of sensation, volition, reflex action, inhibition and influence of the nervous system on other organs and their functions. The examination in zoology will include—the general principles of biology, and a comparison of animals with plants; the distinctive characters of the larger groups of animals—the protozoa, cœlenterata, vermes, arthropoda, mollusca, echinodermata, and vertebrata—as illustrated by common types; the elements of embryology; animal parasites. The examination in botany will comprise the general principles of the morphology and physiology of low forms of life—e.g., torula, bacteria, spirogyra, moss fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants. The examination in geology and physical geography will be limited to general principles, such as: the relations of the earth to the rest of the solar system; nature of the earth's crust and the chief kinds of rocks; general configuration of land and water, mountains, plains, islands, rivers, lakes, glaciers and icebergs, ocean currents, tides, winds, storms, dew, rain, climate, volcanoes, earthquakes, distribution of animal and vegetable life.

---

[1] If any doubt should arise on this question the burden of clear proof that he is qualified will rest upon the candidate himself.

The appointments announced for competition will be filled from the list of qualified candidates, arranged in order of merit; but should it at any time be considered expedient to grant Commissions beyond those periodically competed for, the Admiralty have power to admit annually (*a*) two candidates—proposed by the governing bodies of schools of medicine in the United Kingdom—who have satisfactorily filled the office of house surgeon in a large civil hospital for at least six months; and (*b*) not more than six candidates, according to requirements, specially recommended by the governing bodies of such colonial universities as may be selected and whose qualifications are recognised by the General Medical Council. Candidates so proposed are to be approved by the Director-General of the Medical Department of the Navy and are to be certified by the governing body proposing them as duly qualified according to the regulations in force for the entry of candidates. In cases of colonial nominations, registration of professional qualifications may be deferred until after the arrival in England of a candidate who has been passed on the station, but a Commission as Surgeon will not be granted until the certificate of the Registrar of the Medical Council has been produced at the Medical Department of the Navy. Candidates from schools at home will be required to pass a physical examination in London which will be arranged for by the Medical Director-General. Colonial candidates will have to pass a physical and test examination before a board of Naval Medical Officers on the station. Successful candidates immediately after passing the examination in London will receive commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, &c., at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency.

Surgeons on entry are only required to provide themselves with a pocket case of instruments, a stethoscope, and three clinical thermometers. All other instruments are provided at the public expense.

### *Promotion.*

An Inspector-General of Hospitals and Fleets will be selected from amongst Deputy Inspectors-General who have in that rank three years' full pay service and who have not at any time declined foreign service except for reasons which the Lords Commissioners of the Admiralty regard as good and sufficient.

A Deputy Inspector-General of Hospitals and Fleets will be selected for ability and merit from amongst Fleet Surgeons.

(*a*) Subject to the approval of the Lords Commissioners of the Admiralty rank as Fleet Surgeon will be granted to Staff Surgeons at the expiration of eight years from the date of promotion to Staff Surgeon, provided they are recommended by the Medical Director-General and have not declined service except for reasons which in the opinion of the Lords Commissioners of the Admiralty are satisfactory. (*b*) Special promotions from the rank of Staff Surgeon to that of Fleet Surgeon will be made at their Lordships' discretion in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and will not exceed the rate of one in two years; the total number at any one time of Fleet Surgeons holding that rank by such special promotions will not exceed six.

(*a*) Rank as Staff Surgeon will be granted, subject to their Lordships' approval, to surgeons at the expiration of eight years from the date of entry, provided they are recommended by the Medical Director-General, and have passed such examination as may be required after completion of five years from the date of entry in the rank of surgeon. (*b*) Special promotions will be made at their Lordships' discretion to the rank of Staff Surgeon in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and not exceed the rate of one a year. The total number at any one time of Staff Surgeons holding that rank by such special promotions will not exceed eight. No officer will be so promoted unless he passes the examination prescribed for other surgeons, but in such a case the requirement of five years' time in rank of surgeon will be dispensed with. (*c*) When a surgeon's promotion to the rank of Staff Surgeon has been retarded by failure to pass the qualifying examination he will, should he pass and be promoted, be dealt with as follows. He will be granted the seniority as Staff Surgeon he would have received had he passed in ordinary course. He will reckon service for increase of full and half pay only from the date of appointment to full pay as Staff Surgeon. If on half pay, or if placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination. Where delay in passing the qualifying examination may be due to unavoidable circumstances special consideration will be given. (*d*) The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of the Haslar course and their names will then be placed in the official navy list, except in the case of candidates who hold, or are about to hold, a post as resident medical officer or surgical officer to a recognised civil hospital. These candidates will retain the position in the list which they obtained on entry, and when their period of service as resident officer is over they will join the next Haslar course and will be required to obtain qualifying marks. Surgeons entered without competition will take seniority next after the last surgeon entered at the same time by competition. (*e*) The examination for promotion to the rank of staff surgeon will be held by the Examining Board, to which a naval medical officer will be attached to conduct the examination in naval hygiene. The subjects of examination will be in writing and will include medicine, surgery, pathology, general hygiene, naval hygiene. Earlier promotion to the rank of staff surgeon may be granted to those surgeons who, before entry, have held the post of legally qualified resident medical or surgical officer to a civil hospital of not less than 100 beds for a period of not less than six months, provided their conduct and professional abilities have been favourably reported on during the time they have served in the Navy. They may be granted from six months to one year's seniority, according to the time they have held their civil appointments, but in no case will more than one year's seniority be granted. This only applies to officers who enter by competition (Para. 4 (*f*)). A candidate who at the time of passing the examination for entry into the medical branch of the Royal Navy holds, or is about to hold, an appointment as resident medical or surgical officer in a recognised civil hospital, may be allowed to serve in such civil appointment provided that the period of such service after the date of entry into the Royal Navy does not exceed one year. Pay from naval funds will be withheld from officers while thus serving, but the time concerned will reckon for increase of full and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal, except that no officer will be allowed to retire on a gratuity until he has completed four years' service exclusive of the time spent as resident medical or surgical officer. The elegibility of this appointment will also be decided by the Medical Director-General.

*Full Pay and Allowances.*

| Rank. | Daily. | Yearly. |
|---|---|---|
| | £ *s.* *d.* | £ *s.* *d.* |
| Surgeon— | | |
| On entry ... ... ... ... ... ... ... ... | 0 14 0 | 255 10 0 |
| After 4 years' full-pay service ... ... ... | 0 17 0 | 310 5 0 |
| Staff Surgeon— | | |
| On promotion ... ... ... ... ... ... ... | 1 0 0 | 365 0 0 |
| After 4 years' full-pay service in rank ... | 1 4 0 | 438 0 0 |
| Fleet Surgeon— | | |
| On promotion ... ... ... ... ... ... ... | 1 7 0 | 492 15 0 |
| After 4 years' service in rank ... ... ... | 1 10 0 | 547 10 0 |
| ,, 8 ,, ,, ... ... ... | 1 13 0 | 602 5 0 |
| ,, 12 ,, ,, ... ... ... | 1 16 0 | 657 0 0 |
| Deputy Inspector-General ... ... ... ... | 2 2 0 | 766 10 0 |
| Inspector-General ... ... ... ... ... ... | — | 1300 0 0<br>Consolidated. |

The medical officers in charge of the following hospitals and sick quarters will be granted charge pay: Haslar, Plymouth, Chatham, Malta, Hong-Kong, Bermuda, Portland, Yarmouth, Haulbowline, Cape, Gibraltar, and Yokohama. The rate of charge pay will be as follows:—

| | *s.* | *d.* | |
|---|---|---|---|
| Inspectors-General... ... ... ... ... ... ... ... | 10 | 0 | a day. |
| Deputy Inspectors-General ... ... ... ... ... | 7 | 6 | ,, |
| Fleet Surgeons of over 4 years' seniority ... ... | 5 | 0 | ,, |
| Fleet Surgeons of under 4 years' seniority and Staff Surgeons ... ... ... ... ... ... ... ... | 2 | 6 | ,, |

The hospital allowances for naval medical officers at home and abroad, in lieu of provisions, for themselves and servants, and for fuel and lights, are as follows:—

| — | At home. | Abroad. |
|---|---|---|
| | £ | £ |
| Deputy Inspectors-General ... ... ... ... ... | 67 | 112 |
| Fleet Surgeons and Staff Surgeons of over 4 years' seniority ... ... ... ... ... ... ... ... ... | 53 | 112 |
| Staff Surgeons of under 4 years' seniority and Surgeons... ... ... ... ... ... ... ... ... ... | 39 | 108* |

* Except at Malta, where the allowance will be £70, but servants will be provided at the public expense. These allowances are also granted to medical officers of marine divisions and dockyards.

An allowance of 5*s.* a day, in addition to full pay, is granted to the senior medical officer, being a Fleet or Staff Surgeon, of a flag-ship bearing the flag of a Commander-in-Chief. An allowance of 2*s.* 6*d.* a day is granted to the senior medical officer, being a Fleet or Staff Surgeon, of the ship bearing other flags or broad pendants. The following charge allowances may be granted to medical officers in charge of hospital ships: if above the rank of fleet surgeon, 5*s.* a day; and if of the rank of fleet surgeon or junior, 3*s.* 6*d.* a day. The Fleet and Staff Surgeons serving in the Admiralty and the Marine Rendezvous will be granted the Hospital allowance of £53 a year in addition to the usual lodging money. Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances: two senior officers employed upon this duty, £150 a year each; the junior officer assisting, £50 a year; and the junior officer instructing the Sick Berth Staff, £50 a year. The junior officer instructing the Sick Berth Staff at Plymouth, £50 a year. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights. The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the service.

*Half Pay.*

| Rank. | Daily. | Yearly. |
|---|---|---|
| | £ s. d. | £ s. d. |
| Surgeon— | | |
| Under 2 years' full-pay service ... ... ... ... | 0 6 0 | 109 10 0 |
| After 2 years' full-pay service ... ... ... ... | 0 7 0 | 127 15 0 |
| ,, 4 ,, ,, ... ... ... ... | 0 8 0 | 146 0 0 |
| ,, 6 ,, ,, ... ... ... ... | 0 9 0 | 164 5 0 |
| Staff Surgeon (or Surgeon over eight years)— | | |
| On promotion ... ... ... ... ... ... ... ... ... | 0 10 0 | 182 10 0 |
| After 2 years' service in rank ... ... ... ... | 0 11 0 | 200 15 0 |
| ,, 4 ,, ,, ... ... ... ... | 0 12 0 | 219 0 0 |
| ,, 6 ,, ,, ... ... ... ... | 0 13 0 | 237 5 0 |
| Fleet Surgeon— | | |
| On promotion ... ... ... ... ... ... ... ... ... | 0 14 0 | 255 10 0 |
| After 2 years' service in rank ... ... ... ... | 0 15 0 | 273 15 0 |
| ,, 4 ,, ,, ... ... ... ... | 0 17 0 | 310 5 0 |
| ,, 6 ,, ,, ... ... ... ... | 0 18 0 | 328 10 0 |
| ,, 8 ,, ,, ... ... ... ... | 0 19 0 | 346 15 0 |
| ,, 10 ,, ,, (maximum) ... | 1 0 0 | 365 0 0 |
| Deputy Inspector-General— | | |
| On promotion ... ... ... ... ... ... ... ... | 1 5 0 | 456 5 0 |
| After 2 years' full-pay service in rank ... ... | 1 7 0 | 492 15 0 |
| ,, 4 ,, ,, ... ... ... ... | 1 9 0 | 529 5 0 |
| Inspector-General ... ... ... ... ... ... ... ... | 1 18 0 | 693 10 0 |

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo.

*Retirement.*

Compulsory retirement will be as follows :—

| | | |
|---|---|---|
| Inspector and Deputy Inspector-General of Hospitals and Fleets. | At the age of 60, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined. Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an Inspector-General of Hospitals and Fleets on the active list, the age for the retirement of such Inspector-General may be extended to 62. | To be retired irrespective of age if found physically unfit for service. |
| Fleet Surgeon, Staff Surgeon, and Surgeon. | At the age of 55. or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined. | |

The special attention of candidates is directed to the following rules under which officers are allowed to withdraw from the service after four years' full pay service in the Royal Navy, with the advantage of joining the Reserve of Naval Medical Officers :—

After four years' service in the Royal Navy, an officer, if he wishes, may pass from active service to the Reserve of Naval Medical Officers, when he will reap the following advantages :—

(1) He will be granted a gratuity of £500 on passing into the Reserve.

(2) His name will be retained in the Navy List; he will retain his naval rank and be entitled to wear his naval uniform under the regulations applying to officers on the retired and reserved lists of His Majesty's Navy.

(3) If he agree to remain in the Reserve for four years he will receive a retaining fee of £25 per annum. If at the expiration of this period he agree to remain in the Reserve for a further period of four years he will continue to receive the same retaining fee.

Should an officer prefer it, however, he may simply enter the Reserve for a period not exceeding eight years, with power to give six months' notice of his intention to resign his position at any time (in which case he will receive no retaining fee). He may also adopt this method of Reserve service after the expiration of four years served under the conditions referred to in (3), by renouncing his retaining fee for his last four years' service in the Reserve.

No officer will be allowed to remain in the Reserve for a longer period than eight years.

Officers of the Reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service they will receive the rate of pay—viz., 17*s.* a day and allowances—to which they would have been entitled after four years' service on the active list.

Voluntary retirement and withdrawal will be allowed as follows. (*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after 20 years' full-pay service on the scale of retired pay provided in Paragraph 16, or with a gratuity on the scale provided in that paragraph if not eligible for retired pay. (*b*) At the expiration of four, eight, 12, or 16 years' full-pay service every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval Service, receiving a gratuity on the scale laid down in Paragraph 16. The name of an officer so withdrawing will be removed from the lists of the Navy, with which all connexion will then be severed, except in the case of officers who withdraw after four years who are liable to serve in the Reserve. (*c*) Voluntary retirement and withdrawal at the discretion of their Lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under very special circumstances, however, it may be permitted in the case of an officer serving abroad, provided he pays his passage home, and, if necessary, that of his successor. (*d*) Applications from officers to retire or withdraw or resign their commissions will receive every consideration, but no officer will, as a rule, be permitted to resign under three years from the date of entry.* In order that arrangements may, as far as possible, be made for the relief of officers who may wish to withdraw on a gratuity it is desirable that six months' notice of their wish should be forwarded for the consideration of their lordships.

* The Admiralty reserve to themselves power to remove any officer from the list for misconduct.

Gratuities and retired pay will be awarded on retirement and withdrawal on the under-mentioned scale (Paragraph 16) :—

| Rank. | Gratuities. | Daily. | Yearly. |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| Surgeon, Staff Surgeon, and Fleet Surgeon— | | | |
| After 4 years' full-pay service ... ... ... ... ... ... | 500 0 0 | — | — |
| After 8 years' full-pay service (including service allowed by Para. 4 (*f*) ) ... | 1000 0 0 | — | — |
| After 12 years' full-pay service (including service allowed by Para. 4 (*f*) ) ... | 1500 0 0 | — | — |
| After 16 years' full-pay service (including service allowed by Para. 4 (*f*) ) ... | 2250 0 0 | — | — |
| Fleet Surgeon— | | | |
| After 20 years' service (including proportion of half-pay time) ... ... ... ... | — | *1 0 0 | 365 0 0 |
| After 24 years' service (including proportion of half-pay time) ... ... ... ... | — | *1 2 | 410 12 6 |
| After 27 years' service (including proportion of half-pay time) ... ... ... ... | — | *1 5 0 | 456 5 0 |
| After 30 years' service (including proportion of half-pay time) ... ... ... ... | — | *1 10 0 | 547 10 0 |
| Deputy Inspector-General ... | — | 1 15 0 | 638 15 0 |
| Inspector-General ... ... ... | — | 2 0 0 | 730 0 0 |

* To obtain this rate an officer must hold the commission of Fleet Surgeon.

An officer retired with less than 20 years' service on account of disability, contracted in and attributable to the Service, will receive the half pay of his rank, or, with the consent of their Lordships, a gratuity on the scales given in Paragraphs 16 and 18 (*b*), but such officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above (Paragraph 17).[2]

An officer retired with less than 20 years' service on account of disability, contracted in but not attributable to the Service, will receive—(*a*) if he has over eight years' full-pay service, either a gratuity on the scale given in Paragraph 16 or half-pay according as their Lordships think fit; (*b*) if he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service (Paragraph 18). In circumstances other than those specified in Paragraphs 17 and 18, and other than misconduct, neglect of duty, &c., an officer retired with less than 20 years' service will not be allowed half pay or retired pay, but will receive a gratuity on the scale laid down in Paragraph 16 if he has eight years' full-pay service, and on that provided in Paragraph 18 (*b*) should his full-pay service not amount to eight years. The power vested in their Lordships of granting reduced rates of half pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit. An officer retiring after 20 years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their Lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension. All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement. This liability does not exist in cases of officers who withdraw from the Naval Service receiving a gratuity after 8, 12, or 16 years' full pay service. Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty now filled by civilians.

*Widow's Pension.*

When an officer retires or withdraws *on a gratuity* his widow and children will have no claim to pension or compassionate allowance. Officers serving in the reserve who during re-employment are injured on duty, or lose their lives from causes attributable to the service, come under the same regulations as regards compensation for themselves, or pensions and compassionate allowances for their widows and children, as officers of the same rank on the permanent Active List.

*Miscellaneous.*

A special cabin will be appropriated to the Fleet or Staff Surgeon or the Surgeon in charge of the medical duties in each ship. Special regulations have been made as regards the mess expenses of medical officers appointed to the several divisions of Royal Marines for limited periods. Every medical officer will be required to undergo a post-graduate course of three months' duration at a Metropolitan Hospital once in every eight years (should the exigencies of the Service permit), and this as far as possible during his Surgeon's, Staff Surgeon's, and Fleet Surgeon's period of service. While carrying out this course the medical officer will be borne on a ship's books for full pay and will be granted lodging and provision allowances and travelling expenses as for service under the Regulations to and from his home or port; the fees for each course (not exceeding £25) will be paid by the Admiralty on the production of vouchers at the end of the course. The medical officer will be required to produce separate certificates of efficient attendance in the following: (1) the medical and surgical practice of the hospital, including instruction in anæsthetics; (2) a course of operative surgery on the dead body; (3) a course of bacteriology; (4) a course of ophthalmic surgery, particular attention being paid to the diagnosis of errors of refraction; and (5) a practical course of skiagraphy. Relative rank is accorded to medical officers as laid down in the King's Regulations and Admiralty Instructions.

---

[2] If the health of a surgeon breaks down before he completes 20 years' service, even if his disability be contracted in the Service or be due to climatic causes, he is liable at once to be placed on the retired list, receiving only a gratuity. This point should be well noted, as it is a most unjust one.

The Admiralty has made a considerable effort to make the Medical Service attractive to men of a good professional stamp. The new regulations promulgated on Oct. 31st, 1903, are of course included in the above account of the Naval Medical Service. By these regulations promotion was accelerated, special promotion in the lower grades was made possible in cases of distinguished service or conspicuous professional merit, and encouragement to enter the service, in the shape of earlier promotion, was given to men who have held resident posts in recognised hospitals. A feature of the latest regulations is the permission to withdraw at the end of four years with a gratuity of £500. The pay has been increased but, in respect of allowances, the medical officers of the navy, up to the senior ranks, are not as well off as those of the Royal Army Medical Corps. In spite of the steps taken by the Admiralty there is still much discontent among naval medical officers, and such discontent will exist until the medical officers are unhampered in the performance of their important work by the executive officers. The medical officers should have control over the sick bay staff in ships, and over nurses and other attendants in hospitals, and executive officers should no longer figure as presidents of "medical surveys." The authority of the Director-General must be made adequate. More care must also be taken that medical officers are assigned fitting cabin accommodation. To make the service thoroughly efficient the medical officers must be given authority and position commensurate with their responsibilities.

## THE ARMY.

Consequent upon the issue of the Royal Warrant published in Army Orders dated July 1st, 1898, the Army Medical Staff and the Medical Staff Corps were formed into the Royal Army Medical Corps. Medical officers also have been placed, as regards sick leave of absence on full pay, on the same footing as that laid down for regimental officers. By a Royal Warrant dated Nov. 10th, 1891, Art. 1208*b* of the Pay Warrant was revised by inserting the words "an officer of our Royal Army Medical Corps" after the words "combatant officer," thus giving medical officers an equal title with combatant officers to reckon time on half-pay towards retirement when the half-pay has been due to ill health contracted in the performance of military duty. Under the Royal Warrant of July, 1895, time on half-pay not exceeding a year may in similar circumstances also reckon towards promotion. In the New Royal Warrant it was announced that the late Queen had been pleased to approve of the following ranks for the officers of the Royal Army Medical Corps: Colonel, Lieutenant-Colonel, Major, Captain, and Lieutenant. The Warrant also states that the Medical Staff of the Army shall in future consist of Surgeon-Generals (ranking as Major-Generals). Officers of the Royal Army Medical Corps holding appointments in the Household Troops are to be borne as seconded officers on the establishment of the Royal Army Medical Corps.

### REGULATIONS FOR ADMISSION TO THE ROYAL ARMY MEDICAL CORPS (PROMULGATED BY ARMY ORDERS DATED MAY 1ST, 1902).

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination. He must, at the time of his appointment, be registered under the Medical Acts in force in the United Kingdom. A candidate must complete the subjoined form of application and declaration and submit it to the Director-General, A.M.S., in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

*Application of a Candidate for a Commission in the Royal Army Medical Corps.**

1. Name in full... ... ... ... ... ..........................................
. Address ... ... ... ... ... ... ..........................................
3. Date of birth † ... ... ... ... ..........................................
4. Qualifications ... ... ... ... ..........................................
5. Academic and other distinctions ... ... ... ... ... ... ... ..........................................
6. Name of the Dean or other responsible authority of the school in which the candidate completed his course as a medical student ... ... ... ... ..........................................
7. Particulars of any commission or appointment held in the public services ... ... ... ... ..........................................
8. Date of examination at which the candidate proposes to present himself ... ... ... ... ... ..........................................

*Declaration.*

(N.B.—A mis-statement by the candidate will invalidate an subsequent appointment and cause forfeiture of all privileges for services rendered.)

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief and further:—

1. That I am a British subject of unmixed European blood.

2. That I am not, as far as I know, at present suffering from any mental or bodily infirmity, or physical imperfection or disability that is likely to preclude me from efficiently discharging the duties of an officer in any climate.

3. That I will fully reveal to the Medical Board, when physically exsmined, all circumstances within my knowledge that concern my health.

I also declare that my vision is good with either eye (with or withou the aid of glasses as the case may be).

Signature ..........................................
Date..........................................

---

* All communications to be addressed to the Secretary, War Office, Whitehall, S.W.

† A certificate of registration of birth or other satisfactory evidence of age, such as a declaration made before a magistrate by one of his parents or guardians, giving the date of his birth, to be furnished.

---

The dean of the candidate's school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the corps and to this report special importance will be attached. A candidate whose application is regarded as satisfactory will be directed to appear before the Director-General, Army Medical Service, a few days (usually on the fourth Thursday of the month) preceding the examination. The Director-General will decide if the candidate may be allowed to compete for a commission. If approved, he will then be examined as to his physical fitness by a board of medical officers. The following is the order of the examinations:—

1. A candidate for a commission in the Royal Army Medical Corps must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of military duty.

2. The attention of the board will be directed to the following points: (*a*) That the correlation of age, height, weight, and chest girth is equal or superior to that which is given in the following table:—

*Physical Equivalents.*

| Age. | Height without shoes. | Chest. | |
|---|---|---|---|
| | | Girth when expanded. | Range of expansion. |
| | Inches. | | |
| | 62½ and under 65 | 35 inches. | 2 inches. |
| 21 and upwards. | 65 ,, 68 | 35½ ,, | 2 ,, |
| | 68 ,, 70 | 36 ,, | 2 ,, |
| | 70 ,, 72 | 36½ ,, | 2½ ,, |
| | 72 and upwards. | 37 ,, | 2½ ,, |

(*b*) Measurement of height. The candidate will be placed against the standard with his feet together and the weight thrown on the heels and not on the toes or outside of the feet. He will stand erect without rigidity and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar and the height will be noted in parts of an inch to eighths.

(*c*) Measurement of chest. The candidate will be made to stand erect with his feet together and to raise his hands above his head. The tape will be carefully adjusted round the chest with its posterior upper edge touching the inferior angles of the shoulder blades and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape.

(*d*) Weight. The candidate will also be weighed and his weight recorded in the proceedings of the Board.

The regulations regarding the examination of eyesight are as follows:—

1. If a candidate can read D.=6 at 6 metres (20 English feet) and D.=0·6 at any distance selected by himself, with each eye without glasses, he will be considered *fit*.

2. If a candidate can only read D.=24 at 6 metres (20 English feet) with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D.=6 at 6 metres (20 English feet) with one eye, and D.=12, at the same distance with the other eye, and can also read D.=0·8 with each eye without glasses, at any distance selected by himself, he will be considered *fit*.

3. If a candidate can read D.=6 at 6 metres (20 English feet) with one eye, a higher defect than D.=24 will be accepted in the other; and if he can read D=36 with the defective eye at the required distance, the defect being due to error in refraction which can be remedied by glasses so that he can read, at least, D.=12, he will be considered *fit*.

4. If a candidate cannot read D.=24 at 6 metres (20 English feet) with each eye without glasses, notwithstanding he can read D.=0·6, he will be considered *unfit*. The candidate must be able to read the

tests without hesitation in ordinary daylight. (N.B.—Snellen's test types will be used for determining the acuteness of vision.) Squint, or any morbid conditions, subject to the risk of aggravation or recurrence in either eye, will cause the rejection of a candidate. (1) Inability to distinguish the principal colours will not be regarded as a cause for rejection, but the fact will be noted in the report, and the candidate will be informed. (2) The degree of acuteness of vision of all candidates for commissions (including preliminary examinations) will be entered in their reports in the following manner:—

Sufficient ... ... { Right eye ... V =
{ Left eye ... V =
Defective ... ... { Right eye ... V =
{ Left eye ... V =

No relaxation of the standard of vision will ever be allowed.

The following additional points will then be observed. (*b*) That his hearing is good. (*c*) That his speech is without impediment. (*d*) That his teeth are in good order. Loss or decay of the teeth will be considered a disqualification Decayed teeth if well filled will be considered as sound. (*e*) That his chest is well formed and that his heart and lungs are sound. (*f*) That he is not ruptured. (*g*) That he does not suffer from varicocele or varicose veins in a severe degree, or other disease likely to cause inefficiency. A slight defect if successfully cured by operation is not a disqualification. A definition of severe varicocele may be obtained from the Director-General Army Medical Service, War Office, Whitehall, S.W. (*h*) That his limbs are well formed and developed. (*i*) That there is free and perfect motion of all the joints. (*j*) That his feet and toes are well formed. (*k*) That he does not suffer from any inveterate skin disease. (*l*) That he has no congenital malformation or defect. (*m*) That he does not bear traces of previous acute or chronic disease pointing to an impaired constitution. In any doubtful case the Board should further state: (*n*) Whether he is in their opinion of pure European descent. If a candidate be pronounced physically fit for service at home and abroad he will be eligible to present himself at the next entrance examination which will be held twice in the year, usually in January and July.

The Army Council reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required from each candidate admitted to the examination and is payable at the conclusion of his physical examination, if pronounced fit.

Candidates who have been specially employed in consequence o a national emergency, either as an officer or in a position usually filled by an officer, will be allowed to reckon such service towards retired pay and gratuity, and if over the regulated limit of age at the date of commencement of the competitive examination shall be permitted to deduct from their actual age any period of that service, if such reduction will bring them within the age limit. The duration of service is to be reckoned from the date on which the candidate commenced such service, except in the case of candidates who have served for two or more periods at short intervals. In such cases the total period of service to be considered in granting marks at the entrance examination shall be specially determined.

A candidate successful at the entrance examination will be appointed a Lieutenant on probation and will be required to pass through such courses of instruction as the Army Council shall decide and, after passing the examinations in the subjects taught and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as Lieutenant will be confirmed. The commission shall bear the date of passing the entrance examination.

Before the commission of a Lieutenant on probation is confirmed he must be registered under the Medical Acts in force in the United Kingdom at the time of his appointment.

The precedence of Lieutenants among each other shall be in order of merit as determined by the combined results of the entrance examination and the examinations undergone while on probation, except that the position on the list of a lieutenant on probation, seconded to hold a resident appointment in a recognised civil hospital shall be determined by the place he has gained at the entrance examination. A lieutenant so seconded will be required, at the conclusion of his hospital appointment, to attend the course of instruction at the Royal Army Medical College; but the subsequent examinations will be of a qualifying character and will not influence his position on the seniority list of the Corps.

Lieutenants when appointed on probation will receive instructions as to the provision of uniform.

## EXAMINATIONS.

### *Subjects for the Entrance Examination.*

Candidates will be examined by the examining board in medicine and surgery. The examination will be of a clinical and practical character, partly written and partly oral, marks being allotted under the following scheme.

| *Medicine (written).* | Maximum marks. |
|---|---|
| A. Examination and report upon a medical case ... ... | 125 |
| B. Commentary upon a case in medicine ... ... ... | 100 |

(Two periods of 45 minutes – total, one a half hours —for A and one and a half hours for B.)

| *Medicine (oral).* | |
|---|---|
| A. Clinical cases ... ... ... ... ... ... ... | 100 |
| B. Medical pathology ... ... ... ... ... ... | 75 |

(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A; 30 minutes to examine specimens and ten minutes *viva voce* —total, 40 minutes—for B.)

| *Surgery (written).* | |
|---|---|
| A. Examination and report upon a surgical case ... ... | 100 |
| B. Commentary upon a case in surgery ... ... ... | 125 |

(Two periods of 45 minutes—total, one and a half hours—for A and one and a half hours for B.)

| *Surgery (oral).* | |
|---|---|
| A. Clinical surgery and pathology (including diseases of the eye) ... ... ... ... ... ... ... | 75 |
| B. Operative surgery and bandaging (including surgical instruments and appliances) ... ... ... ... | 100 |

(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A, and about 30 minutes for B.)

| | |
|---|---|
| Total marks ... ... ... | 800 |

The following headings are published as a guide to candidates in drawing up their reports on cases:—(*a*) A brief history of the case as given by the patient, including such points only (if any) in the family or personal history as have a distinct bearing upon the present illness or incapacity. (*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case. (*c*) Where there is any reasonable doubt in the mind of the candidate as to an exact diagnosis he is to give the alternatives, with his reasons for making the selection. (*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

Similarly the commentary on the report of a case submitted to the candidate should discuss: (*a*) The family and personal history and other conditions preceding the development of the condition described. (*b*) The relative significance of the physical signs, symptoms, other indications of disease noted, and the general clinical aspects of the case. (*c*) The diagnosis, with reasons for selection of the most probable, when a positive diagnosis cannot be attained. (*d*) The treatment, dietetic, medicinal, operative, &c., including a criticism of the plan adopted, and alternative schemes of treatment in case of disagreement. (*e*) The morbid appearances and an account of the post-mortem examination (if any).

The examination will be held in London and will occupy about four days.

The appointments announced for the competition will be filled up from the list of qualified candidates arranged in the order of merit, as determined by the total number of marks each has obtained. Having gained a place in this entrance examination the successful candidates will be ordered to proceed to the Royal Army Medical College for instruction in recruiting duties, at the termination of which they will join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps and at the end of the course will be examined in the subjects taught. The maximum number of marks obtainable at this examination will be 100. On completion of the above course lieutenants on probation will rejoin the Royal Army Medical College to undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical Administration, after which they will be examined in these subjects. The maximum number of marks obtainable at this examination will be 700. At the present time the professors at the Royal Army Medical College are Major C. G. Spencer, M.B., F.R.C.S., in the department of military surgery; Lieutenant-Colonel Robert J. S. Simpson, M.B., C.M.G., in the department of military medicine; Major W. B. Leishman, M.B., in the department of pathology; and Lieutenant-Colonel A. M. Davies in that of hygiene, Major W. S. Harrison, M.B., and Major C. E. P. Fowler, F.R.C.S., both of the Royal Army Medical Corps, being the respective assistant professors. Colonel H. R. James, F.R.C.S., the commandant of the Royal Army Medical College, instructs in hospital and corps administration, in the duties of officers on transports, and in the examination of recruits, and Brevet-Colonel F. J. Lambkin lectures on Syphilology. The course of hygiene has hitherto comprised the examinations of water and air, the general principles of diet with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease and instruction in the mode of preparing the various statistical and other returns required of the medical officer. The pathological course has up to the present time included bacteriology and demonstrations in physiological chemistry. The surgical course consists of lectures and demonstrations in military surgery and lectures on errors of refraction from a military point of view. On completion of the above course Lieutenants on probation will be ordered to proceed to the depôt of the Royal Army Medical Corps at Aldershot for a three months' course of instruction in the technical duties of the corps, and at the end of the course will be examined in the subjects taught. A Lieutenant on probation who fails to qualify in either of these examinations will be allowed a second trial, and, should he qualify, will be placed at the bottom of the list. Should he again fail in either examination his commission will not be confirmed. Illiteracy on the part of a candidate as evinced by inaccurate spelling, poor composition, or grammatical errors in the oral examination, at the entrance examination, or at the examinations undergone while on probation will be regarded as disqualifying for appointment.

### EXAMINATIONS FOR PROMOTION IN THE ROYAL ARMY MEDICAL CORPS.

These examinations are intended to test the progress and proficiency of officers in those branches of knowledge which are essential to their continued efficiency.

*Lieutenant before Promotion to Captain.*—(For Lieutenants appointed after March 31st, 1901.) This examination may be taken at any time after completing 18 months' service and will be held in the military district in which the officer is serving. The subjects of this examination, which are detailed in the King's Regulations, are as follows: (1) squad, company, and corps drills and exercises; (2) the duties of wardmasters and stewards in military hospitals, and the preparation of returns, accounts, and requisitions connected therewith; (3) duties of executive medical officers; and (4) military law.

*Captains before Promotion to Major.*—(For Captains promoted to that rank after July 27th, 1895.) Captains will be examined under the rules laid down in Paragraph 23 and will be eligible for acceleration in their promotion to the rank of Major under Article 352 of the Pay Warrant.

A Captain promoted to that rank in January, 1898, can gain the full acceleration. In all cases an officer who gains accelerated promotion will be placed for precedence after the last officer (whether subject to acceleration or not) promoted approximately 3, 6, 12, or 18 months before him.

This examination, which may be taken at any time after completing five years' service, will be held on the termination of a period of special study at such times and under such arrangements as the Director-General A.M.S. may determine. The examination will consist of written papers, essays, oral and practical examinations in the following subjects, which are detailed in the King's Regulations: (1) medicine; (2) surgery; (3) hygiene; (4) bacteriology and tropical disease; and (5) one special subject from the subjoined list to which additions may from time to time be made: (*a*) bacteriology and tropical diseases; (*b*) dental surgery; (*c*) dermatology, including venereal diseases; (*d*) midwifery and gynæcology; (*e*) operative surgery, advanced; (*f*) ophthalmology; (*g*) otology, including laryngology and rhinology; (*h*) psychological medicine; and (*i*) State medicine. Captains serving in that rank before July 27th, 1895, will be promoted under the old regulations contained in Appendix I., Regulations for Army Medical Services, and will not be eligible for acceleration.

*Majors before Promotion to Lieutenant-Colonel* (for Majors promoted to the rank after March 31st, 1895).—This examination, which may be taken at any time after three years in the rank of Major, will be held in the military district in which the officer is serving at times which will be duly notified. The subjects of this examination, which are detailed in the King's Regulations, are as follows: 1. Military law. 2. Army medical organisation in peace and war 3. Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace and war; epidemiology, and the management of epidemics. 4. (*a*) Medical history of the more important campaigns and the lessons to be learnt therefrom; (*b*) a knowledge of the Army Medical Services of the more important Powers; and (*c*) the laws and customs of war, so far as they relate to the sick and wounded.

### PAY.

The following shall be the rates of pay, additional pay, and charge pay of the Army Medical Staff and Royal Army Medical Corps:—

| Army Medical Service. | Inclusive of all allowances except field and travelling allowances (yearly). | | |
|---|---|---|---|
| *At Headquarters.* | £ | | |
| Director-General ... ... ... ... ... ... ... ... ... | 2000 | | |
| Deputy Director-General ... ... ... ... ... ... ... | 1500 | | |
| Assistant Director-General... ... ... ... ... ... ... | 850 | | |
| Deputy Assistant Director-General ... ... ... ... | 750 | | |
| | Exclusive of allowances (daily). | | |
| *At Other Stations.* | £ | s. | d. |
| Surgeon-General ... ... ... ... ... ... ... ... ... | 3 | 0 | 0 |
| Colonel ... ... ... ... ... ... ... ... ... ... ... | 2 | 5 | 0 |
| Lieutenant-Colonel ... ... ... ... ... ... ... ... | 1 | 10 | 0 |
| Lieutenant-Colonel promoted to the rank on or after Jan. 9th, 1907, after three years as such ... ... | 1 | 15 | 0 |
| Major ... ... ... ... ... ... ... ... ... ... ... ... | 1 | 3 | 6 |
| After three years as such... ... ... ... ... ... ... | 1 | 6 | 0 |
| Captain ... ... ... ... ... ... ... ... ... ... ... | 0 | 15 | 6 |
| After seven years' total full-pay service ... ... ... | 0 | 17 | 0 |
| After ten years' total full pay service ... ... ... | 1 | 1 | 0 |
| Lieutenant on probation and Lieutenant ... ... ... | 0 | 14 | 0 |
| Adjutant of the Royal Army Medical Corps (Volunteers) ... ... ... ... ... ... ... ... ... ... | The pay of his rank. | | |

A Captain of the Royal Army Medical Corps, holding the brevet rank of Major, shall receive pay at 2*s*. a day, in addition to the rates laid down.

*Additional Pay.*

An officer not serving on the Headquarters Staff appointed a member of the Advisory Board, £150 a year. An officer serving as secretary of the Advisory Board and Nursing Board, £100 a year. An officer under the rank of Lieutenant-Colonel holding an appointment as specialist, 2*s*. 6*d*. daily.

*Charge Pay.*

(*a*) An officer in charge of a general or other hospital, or of a division of a general hospital—

| | Daily. | |
|---|---|---|
| | s. | d. |
| If in charge of at least 50 beds ... ... ... ... ... | 2 | 6 |
| ,, ,, 100 ,, ... ... ... ... ... | 5 | 0 |
| ,, ,, 200 ,, ... ... ... ... ... | 7 | 6 |
| ,, ,, 300 ,, ... ... ... ... ... | 10 | 0 |
| (*b*) Senior medical officer, Royal Arsenal, not exceeding | 10 | 0 |
| (*c*) Officer in command of the Depôt, Royal Army Medical Corps ... ... ... ... ... ... | 5 | 0 |
| (*d*) The Senior officer of the Army Medical Service with an army in the field— A rate to be fixed by the Secretary of State, according to the magnitude of the charge. | | |
| (*e*) In a command abroad— The senior medical officer, if under the substantive rank of colonel, if the number of soldiers is 1500 or upwards ... ... ... ... | 5 | 0 |

*Extra-duty Pay.*

An officer of the Royal Army Medical Corps, appointed to act as adjutant or quartermaster of the Royal Army Medical Corps (Militia) during preliminary drill or training shall receive extra-duty pay at the following rates:—

| | Daily. | |
|---|---|---|
| | s. | d. |
| Acting Adjutant ... ... ... ... ... ... ... ... | 2 | 6 |
| Acting Quartermaster ... ... ... ... ... ... ... | 2 | 0 |

*Reserve of Officers.*

An officer of our Royal Army Medical Corps with at least three, but not more than six, years' service may be permitted by our Army Council to become an Army Reserve Officer for a period of seven years, and while so serving he shall receive pay at the rate of £25 a year. With the sanction of our Army Council such officer may be allowed to return to the active list, and if the period he has been in our Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

*Seconded Officers.*

A Lieutenant on probation who at the time of passing the examination for admission to the Royal Army Medical Corps holds, or is about to hold, a resident appointment in a recognised civil hospital may be seconded for a period not exceeding one year during which he holds the appointment. While seconded he shall not receive pay from army funds, but his service shall reckon towards promotion, increase of pay, gratuity, and pension.

### PROMOTION.

Every promotion of a medical or departmental officer shall be made with the approval of our Secretary of State. Promotion by selection shall be given on the ground of ability and merit, due consideration being given, however, to length of efficient service.

An officer shall be eligible for promotion to the rank of Captain on the completion of three and a half years' service, and to the rank of Major on the completion of 12 years' service, provided that in each case he has previously qualified in such manner as may be prescribed by the Army Council.

Promotion to the rank of Lieutenant-Colonel to complete an establishment shall be made by selection from Majors who have qualified in such manner as may be prescribed by the Army Council.

If an officer has passed with distinction the examination qualifying for promotion to the rank of Major, the period of service required to render him eligible for the rank of Major or Lieutenant-Colonel may be reduced as follows:—

| | Months. |
|---|---|
| If he obtained a "special certificate" ... ... ... | 18 |
| ,, passed in the 1st Class ... ... ... ... ... | 12 |
| ,, ,, ,, 2nd ,, ... ... ... ... ... | 6 |
| ,, ,, ,, 3rd ,, ... ... ... ... ... | 3 |

Promotion to the rank of Colonel to complete an establishment shall be made by selection from Lieutenant-Colonels and from Lieutenant-Colonels or Surgeon-Lieutenant-Colonels of the Household Troops specially recommended to the Army Council for distinguished service in the field. Promotion to the rank of Surgeon-General shall be made by selection from Colonels. A Colonel may also be promoted to the rank of Surgeon-General for distinguished service in the field. In cases of distinguished service in the field a departmental officer may, with the concurrence of the Lords Commissioners of the Treasury, be promoted from any rank or class to the next above it and shall, if promoted to a rank or class having a fixed establishment, remain supernumerary in such rank or class until the occurrence of the vacancy to which in the ordinary course he would have been promoted. An officer of the Royal Army Medical Corps is eligible for promotion to brevet rank. A Captain after at least 6 years' service, a Major or Lieutenant-Colonel, may be promoted to the next higher rank by brevet for distinguished service in the field or for distinguished service of an exceptional nature other than in the field. If the officer dies before the date on which the notification of his promotion for distinguished service in the field appears in the *London Gazette* the promotion shall bear the date which it would have borne had the officer not died. Distinction in original investigation or research may, in the case of officers of the Royal Army Medical Corps, be regarded as "distinguished service of an exceptional nature other than in the field." An officer who does not qualify for promotion to the rank of Captain or Major within the periods specified shall be placed on a special list with pay equal to half-pay until the date of the next succeeding examination, provided a period of eight months is not thereby exceeded. An officer who may in the opinion of the Army Council have been prevented, in very special circumstances, from qualifying for promotion, or who, having failed to qualify, may have been debarred from further opportunity of qualifying, may be provisionally promoted. If, however, he fails to qualify on the first available opportunity his promotion shall be cancelled and he shall be retired from the service. An officer shall reckon towards his promotion any time, not exceeding one year, during which he may have been on half-pay on account of ill-health caused by military service; and also any time not exceeding two years during which he may have been on half-pay on reduction. An officer while seconded shall continue to be eligible for selection for promotion as if he had remained on the establishment, and his service while seconded shall reckon towards such promotion.

### RANK.

The Director-General of the Army Medical Service shall hold the substantive rank of Surgeon-General and shall rank in relation to combatant officers as a Lieutenant-General if recommended by the Army Council. All other Surgeon-Generals shall rank as Major-Generals in relation to combatant officers.

### RETIREMENT.

An officer of the Army Medical Service will be permitted to retire in cases in which such retirement may be deemed expedient by the Secretary of State.

*Scale of Retired Pay.*

| | | | |
|---|---|---|---|
| | Yearly. £ | | |
| Director-General after 3 years' service in the appointment (with 30 years' service) ... ... ... ... | 1125 | | |
| Under 3 years' service as Director-General and after not less than 30 years' service ... ... ... ... | 875 | | |
| | Daily. £ | s. | d. |
| Surgeon-General ... ... ... ... ... ... | 2 | 0 | 0 |
| Colonel promoted on, or after, the 9th January, 1907— | | | |
| Under 4 years' service as such, but with 30 years' total service ... ... ... ... ... ... | 1 | 10 | 0 |
| After 4 years' service as such ... ... ... ... | 1 | 15 | 0 |
| If not qualified as above ... ... ... ... ... | the rate for a lieutenant-colonel. | | |
| Surgeon-Lieutenant-Colonel of the Household Troops— | £ | s. | d. |
| After 20 years' service ... ... ... ... ... | 1 | 0 | 0 |
| ,, 25 ,, ... ... ... ... ... | 1 | 2 | 6 |
| ,, 30 ,, ... ... ... ... ... | 1 | 5 | 0 |
| Lieutenant-Colonel, promoted on, or after, the 9th January, 1907— | | | |
| After 20 years' service ... ... ... ... ... | 1 | 0 | 0 |
| ,, 25 ,, ... ... ... ... ... | 1 | 2 | 6 |
| ,, 28 ,, ... ... ... ... ... | 1 | 7 | 6 |
| Major, or Surgeon-Major of the Household Troops— | | | |
| After 20 years' service ... ... ... ... ... | 1 | 0 | 0 |
| | Gratuity. £ | | |
| Major, or Captain, or Surgeon-Captain of Household Cavalry— | | | |
| After 5 years' service in the rank of captain ... ... | 1000 | | |
| ,, 3 ,, ,, major ... ... | 1800 | | |
| ,, 6 ,, ,, ,, ... ... | 2500 | | |
| Surgeon-Lieutenant Colonel or Surgeon-Major of the Household Troops— | | | |
| After 15 years' service... ... ... ... ... ... | 1800 | | |
| ,, 18 ,, ... ... ... ... ... ... | 2500 | | |

Except in the case of a Colonel promoted after the 9th January, 1907, or a Lieutenant-Colonel, an officer of our Army Medical Service, who, on voluntary retirement, has served for less than three years in the rank from which he retires, shall be entitled only to the gratuity or retired pay assigned to the next lower rank.

#### *Retirement on Account of Age or Limitation of Period of Service.*

The Director-General of the Army Medical Service shall retire on completion of the term of his appointment, and the retirement of other officers of the Army Medical Service except Quartermasters) shall be compulsory at the following ages: Surgeon-General, 60; Colonel, 57; and other officers, 55. A Major shall retire on completion of 25 years' service; or, if he fails to qualify for promotion, on completion of 20 years' service. A Lieutenant placed on the special list shall be retired if he fails to qualify at the next succeeding examination. A Captain placed on the special list shall, if he fails to qualify at the next succeeding examination, be retired at once on any gratuity for which he may be eligible, and if not so eligible shall be retired as soon as he completes five years' service in the rank of Captain. It shall be competent to the Secretary of State to place a medical officer on the retired list after 30 years' service.

#### *Retirement on Account of Medical Unfitness.*

An officer of the Army Medical Service or a medical officer of the Royal Malta Artillery placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

An officer, whether on full pay or half pay, who, to the satisfaction of the regulated medical authority has been pronounced insane, shall be retired from the Army with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If his disability was not caused by military service and he is not entitled to permanent retired pay by length of service he shall receive temporary retired pay equivalent to the half pay and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

#### *Rates for Officers not qualified for Retired Pay on Voluntary Retirement.*

If the unfitness was caused by military service retired pay equal to the half pay of his rank. If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half pay of his rank for such period only, not exceeding five years from the date of the officer's retirement from the Army. after five years on half pay under Article 306, as the Secretary of State shall determine according to the merits of the case.

### KING'S HONORARY PHYSICIANS AND HONORARY SURGEONS.

Six of the most meritorious officers of the Army Medical Service on the active list shall be named Honorary Physicians and six Honorary Surgeons. On appointment as Honorary Physician or Honorary Surgeon an officer under the rank of Colonel in the Army Medical Service may be promoted to the brevet rank of Colonel. A Lieutenant-Colonel appointed Honorary Physician or Honorary Surgeon shall receive pay at the rate laid down for a Colonel of the Royal Army Medical Corps when qualified for promotion to that rank. An officer shall relinquish the appointment of Honorary Physician or Honorary Surgeon on retirement.

### MEDICAL OFFICERS OF THE REGIMENTS OF HOUSEHOLD TROOPS.

#### *Household Cavalry.*

Commissions as surgeon-lieutenants in our Household Cavalry shall be given, on the nomination of the titular colonels of the regiments, to persons approved by our Army Council.

### PROMOTION.

#### *Household Cavalry.*

A Surgeon-Lieutenant shall be eligible for promotion to the rank of Surgeon-Captain on completing three and a half years' service, and a Surgeon-Major for promotion to the rank of Surgeon-Lieutenant-Colonel on completing 20 years' service. Promotion from Surgeon-Captain to Surgeon-Major shall be by seniority on the medical establishment of the brigade, but only on a vacancy occurring for such promotion.

A Surgeon-Lieutenant, Surgeon-Captain, or Surgeon-Major of our Household Cavalry may be promoted for distinguished service in the field under the conditions laid down in Article 327.

### PAY.

| | Daily. £ | s. | d. |
|---|---|---|---|
| Surgeon-Lieutenant-Colonel ... ... ... ... ... | 1 | 10 | 0 |
| Surgeon-Major ... ... ... ... ... ... ... | 1 | 3 | 6 |
| After three years' service as such ... ... ... | 1 | 6 | 0 |
| Surgeon-Captain... ... ... ... ... ... | 0 | 15 | 6 |
| After seven years' service ... ... ... ... | 0 | 17 | 0 |
| After ten years' service ... ... ... ... ... | 1 | 1 | 0 |
| Surgeon-Lieutenant ... ... ... ... ... ... | 0 | 14 | 0 |

### PROMOTION.

A medical officer of our Household Troops shall be eligible for extra pay under the provisions of Articles 367 and 368.

### GENERAL REGULATIONS.

In all matters not provided for by Articles 382 to 387 and 555 to 562 the medical officers of our Household Troops shall be governed by the general regulations for regimental officers of our army.

### EXCHANGES AND TRANSFERS.

An officer of the Royal Army Medical Corps shall be permitted to exchange with another officer of such corps, or with a medical officer of the Household Troops, under such conditions and regulations as may from time to time be made.

A medical officer of the Household Troops may be permitted to exchange with an officer of the Royal Army Medical Corps, provided that an officer exchanging into the Royal Army Medical Corps has fulfilled any conditions as to service abroad required of officers of such corps.

Exchanges between officers of the Royal Army Medical Corps under the rank of Major and medical officers of the Indian Army, and transfers of such officers from either of the above services to the other, shall only be permitted subject to the approval of the Secretary of State for India in Council and on the following conditions: (1) That the officers have less than seven years' service; (2) that the senior officer exchanging takes the place of the junior on the list and shall not be promoted until the officer next above him has been so promoted; (3) that the junior officer exchanging is placed for seniority next below all medical officers whose commissions have the same date as his own; and (4) that the officer transferred is placed for seniority below all medical officers holding the same rank at the time of his transfer and shall not be promoted until the officer next above him has been promoted.

An officer of the Royal Army Medical Corps who has exchanged or been transferred from the Indian Army shall reckon, subject to the conditions of Article 364, his previous service with the said forces towards promotion, increase of pay, gratuity, and pension.

### LEAVE OF ABSENCE.

Full pay during ordinary leave of absence for the period admissible in the case of a staff officer may be granted to a medical officer provided that no additional expense is incurred thereby.

When the periods of leave referred to in Article 457 have been exhausted or exceeded in consequence of sickness no further pay during ordinary leave shall remain due.

### SICK LEAVE.

An officer of the Army Medical Service may be allowed full pay during sick leave of absence on the same conditions as those laid down for regimental officers.

A regimental officer may draw full pay for the undermentioned periods during sick leave granted on the recommendation of the regulated medical authority, provided there is reasonable probability that he will ultimately be fit to return to duty:—

1. In ordinary cases for a period not exceeding 12 months.
2. In very special cases, such as loss of health due to tropical service or to active operations, the period may be extended, but it shall not exceed 18 months in all. (Article 298.)

When a medical officer is sick at his station, whether in hospital, quarters, or lodgings, his absence from duty on account of sickness, if not exceeding 30 days in duration, and if duly certified by a medical officer, shall not be included in the period of absence on leave to which the issue of pay is limited by Article 457, provided the general officer commanding at the station considers that the circumstances of the case warrant such a concession. Any excess of such leave of absence on account of sickness at an officer's station beyond the period of 30 days shall come under the provisions of Article 458.

### SERVICE ON THE WEST COAST OF AFRICA.

An officer volunteering for, or ordered to, the West Coast of Africa shall receive double pay while actually serving on the coast, and for any time spent at Madeira or the Canary Islands on sick leave, or on ordinary leave not exceeding 61 days in a year.

For each year's service on the coast a medical officer shall be entitled to full pay during 183 days' leave at home, and for every additional period beyond a year he shall have a proportionate extension of full pay during leave.

Each year or portion of a year served on the West Coast of Africa by an officer of the Royal Army Medical Corps shall reckon double towards voluntary retirement or retired pay, provided that he has served 12 months on the coast. In ordinary cases the 12 months may be made up of two separate periods of not less than six months each; and if an officer leaves the coast on account of sickness he may reckon any period of service on the coast, however short, in order to make up the 12 months' coast service which is required to entitle him to count his service double. Except when the officer has been invalided, any broken period, if amounting to less than six months' of service on the coast, and leave on full pay, shall not reckon double under this article.

### WIDOWS' PENSIONS.

Widows' pensions and compassionate allowances for children and other relatives of deceased officers are given under certain conditions specified in the Royal Warrant for Pay and Promotion. There is also an Army Medical Officers' Widows' Annuity Fund on mutual assurance principles.

### ROYAL ARMY MEDICAL CORPS IN INDIA.

Under the Indian commands reorganisation scheme it is ordered that: (*a*) The appointments of principal medical officer, personal assistant to the principal medical officer, sanitary officer, and staff officer, Army Bearer Corps, in each command, and of sanitary officer and staff officer, Army Bearer Corps, in the Secunderabad Division and Burma, will be abolished. (*b*) The principal medical officers of the three divisions will be surgeon-generals, their pay being fixed at 2200 rupees per mensem, consolidated. (*c*) Two temporary administrative posts will be created, each to be held by a colonel—viz.: one for the Allahabad and the second for the Secunderabad brigades, infantry and cavalry. (*d*) A colonel will be appointed deputy to the principal medical officer of His Majesty's forces in India, his pay being fixed at 1800 rupees a month, consolidated. (*e*) A sanitary officer will be appointed in each office of the nine divisions and in Burma, the staff pay being fixed at 300 rupees per mensem. (*f*) A staff officer for medical mobilisation stores will be appointed in each of the nine divisions (excluding Burma), the staff pay being fixed at 300 rupees per mensem. (*g*) Owing to the above changes the establishments of medical services in India will be reduced by a number of officers corresponding to the number of cadre appointments abolished. (*h*) Existing lady superintendents will, under the orders of the principal medical officer of His Majesty's forces in India, be distributed to the charge of four circles, as follows: First Circle, comprising Peshawur, Rawul Pindi, and Lahore Divisions; Second Circle, comprising Meerut and Lucknow Divisions; Third Circle, comprising Quetta, Mhow, and Poona Divisions; Fourth Circle, comprising Secunderabad Division and Burma. (*i*) Orders regarding the disposal of clerks and establishments of the medical division officers at command headquarters will be issued by the principal medical officer, His Majesty's forces in India.

### REGULATIONS FOR ADMISSION TO THE ARMY MEDICAL RESERVE.

#### CANDIDATES FOR COMMISSIONS.

*Qualifications.*

1. A candidate for a commission in the Army Medical Reserve must not be over 30 years of age at the date of his appointment.

2. He must be registered under the Medical Acts in force in the United Kingdom at the time of his appointment.

3. He must complete the form of application and declaration shown hereafter.

*Appointment and Promotion.*

4. If his application is approved the candidate will be directed to present himself at a military station convenient to his place of residence, in order that he may be examined by an officer of the Royal Army Medical Corps as to his physical fitness for a commission.

5. The standard of physique required will be that laid down for candidates for the Royal Army Medical Corps.

6. If selected, he will be appointed a Lieutenant on probation, and will be required to undergo a course of instruction at the Depôt, Royal Army Medical Corps, at Aldershot, for two months. Classes will begin about 1st February, 1st July, and 1st September in each year, and a candidate will, as far as possible, be permitted to select the class most convenient to him. At the conclusion of this course he will be examined as to his fitness to have his commission confirmed.

7. Commissions will date from time of joining the class of instruction at the Depôt.

8. Lieutenants when appointed will be required to provide the following articles of uniform, towards the expense of which an allowance of £5 will be issued:—

Cap, field service, khaki.
Frock, khaki.
Pants, khaki, 1 pair.
Puttees, khaki, 1 pair.
Boots, regulation, brown, 1 pair.
Sam Browne belt and sword.

9. Before becoming eligible for promotion to Captain, a Lieutenant will be required to undergo a second course of instruction for one month, at the conclusion of which he will be examined as to his fitness for such promotion.

*Conditions of Service.*

10. Officers of the Army Medical Reserve will be liable to be called to army service at home or abroad at a time of emergency.

11. Officers of the Army Medical Reserve who are willing to offer their services in times of peace will be considered for employment with troops in the locality in which they reside.

12. *Extracts from the Royal Warrant for Pay and Promotion.* The following extracts are given for the information of candidates:—

Commissions as Lieutenants in Our Army Medical Reserve may be given to persons, not over 30 years of age, who may be duly qualified under regulations approved by Our Army Council. (Art. 654.)

The ranks of officers of Our Army Medical Reserve shall be those of Captain and Lieutenant, and the total period of service in the Reserve shall be limited to seven years. On the completion of three and a half years' service a Lieutenant shall be eligible for promotion to the rank of Captain, if recommended for that rank. (Art. 655.)

Appointments to commissions will be made on probation, and persons so appointed will undergo an initial training of two months, on the expiration of which, should their work and conduct be considered satisfactory, their commissions will be confirmed. Officers of the Reserve before promotion to the rank of Captain shall fulfil such conditions as Our Army Council may determine, and shall undergo one month's further training. (Art. 656.)

When called to army service, or while undergoing training, officers of the Reserve shall receive the pay and allowances of officers of similar rank in the Royal Army Medical Corps. After the first year's service an officer shall, in addition to any such pay and allowances for days of actual service, receive pay at the rate of £20 a year. This rate shall be increased to £25 a year if the Officer is promoted to the rank of Captain. (Art. 657.)

Officers of the Army Medical Reserve will be subject to the general regulations applicable to Army Reserve Officers as laid down in the following extracts from the Pay Warrant, so far as such regulations do not conflict with those laid down in the foregoing Articles.

Officers who volunteer for service in the Reserve of Officers, and whose services are accepted, shall receive commissions from Us as officers in Our Land Forces. (Art. 660.)

An Army Reserve Officer shall report himself at the commencement of each year, in writing, to Our Army Council. Should he fail to do so he shall (unless he is an officer retired from Our Regular Forces, with liability for further service in case of emergency) be removed from Our Reserve of Officers at the end of the year in which he fails to report himself. (Art. 662.)

An Army Reserve Officer shall, if his services have been of a special character and if recommended to Us by Our Army Council, be eligible on retirement for a step of substantive or honorary rank, or of brevet rank for distinguished service. (Art. 664.)

An Army Reserve Officer may, with his own consent and the sanction of Our Army Council, be employed on Army Service at any time. (Art. 667.)

*Application of a Candidate for a Commission in the Army Medical Reserve.*

1. Name in full ... ... ... ... ... ..........................................
2. Address ... ... ... ... ... ... ..........................................
3. Date of birth* ... ... ... ... ... ..........................................
4. Qualifications ... ... ... ... ... ..........................................
5. Academic and other distinctions ..........................................
6. Medical school in which the candidate completed his course as a medical student ... ... ... ... ..........................................
7. Name of a person of position and responsibility who can be referred to as to candidate's character, conduct, and fitness to hold His Majesty's Commission ... ... ... ..........................................
8. Particulars of any commission or any appointment held since qualifying ... ... ... ... ... ... ..........................................

*Declaration.*

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief, and further—

1. That I am a British subject of unmixed European blood.

2. That I am not, as far as I know, at present suffering from any mental or bodily infirmity, or physical imperfection or disability that is likely to preclude me from efficiently discharging the duties of an officer in any climate.

3. That I will fully reveal when physically examined all circumstances within my knowledge that concern my health.

I also declare that my vision is good with either eye (with or without the aid of glasses as the case may be).

Signature..........................................

Date..........................................

(N.B.—A misstatement by the candidate will invalidate any subsequent appointment and cause forfeiture of all privileges for services rendered.)

All communications to be addressed to the Secretary, London, S.W.

* A certificate of registration of birth or other satisfactory evidence of age, such as a declaration made before a magistrate by one of his parents or guardians, giving the date of his birth, to be furnished.

### INDIAN MEDICAL SERVICE.

The grades of officers in the Indian Medical Service are the same as those of the Army Medical Service and Royal Army Medical Corps. The Director-General will rank either as Major-General or Lieutenant-General as may be decided in each case by the Secretary of State for India in Council.

### Regulations for the Examination of Candidates for Admission to the Indian Medical Service.

Candidates must be natural born subjects of His Majesty, of European or East Indian descent, between 21 and 28 years of age at the date of the examination, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess a diploma or diplomas entitling them under the Medical Acts to practise both medicine and surgery in Great Britain and Ireland. Examinations for admission to the service usually take place twice in the year—in January and July.

They must subscribe and send in to the Military Secretary, India Office, Westminster, *so as to reach that address by the date fixed in the advertisement of the examination*, a declaration according to the annexed form.

*Declaration and Schedule of Qualifications to be Filled up by Candidates.*

1. Name in full... ... ... ... ... .........................................
2. Address. (*Any alteration to be notified to the Military Secretary, India Office, London, S.W.*)... ... .........................................
3. Date of birth. (*This must be supported by a certificate or statutory declaration.* See *Paragraph 4 of the Regulations*) ... ... ... ... .........................................
4. Profession or occupation of father, and whether, at the time of candidate's birth, his father was a British subject of European or East Indian descent... ... ... ... .........................................
5. Statement as to whether the candidate is married or single ... .........................................
6. Colleges and Medical Schools at which the candidate has received his medical education ... ... ... .........................................
7. Medical School in which the candidate completed his course as a medical student, and name of the Dean or other responsible authority ... ... ... ... ... ... .........................................
8. Degrees of B.A. or M.A.; details as to any prizes, university honours, &c. ... ... ... ... ... .........................................
9. Registrable qualification ... ... .........................................
10. Date of examination at which the candidate proposes to present himself ... ... ... ... ... ... ... ... .........................................
11. Date of any previous occasions on which the candidate may have presented himself for examination for admission to the Indian Medical Service, or other examination for the Public Services... ... ... ... ... ... ... ... .........................................
12. Particulars of any commission or appointment held in the Public Services... ... ... ... ... ... ... .........................................

I, ............................................................, a candidate for employment in His Majesty's Indian Medical Service, do hereby attest my readiness to engage for that service, and to proceed on duty immediately on being gazetted.

I declare that I labour under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer.

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief.

I inclose, in accordance with Paragraph 4 of the Regulations, (*a*) proof of age; (*b*) two certificates of character; (*c*) certificate of having attended a course of ophthalmic instruction; (*d*) evidence of a registrable qualification; (*e*) *in case of natives of India or others educated in that country only*, a certificate from the Director-General, Indian Medical Service.

Signature ..........................................................

Date .................................., 19 .

This declaration must be accompanied by the following documents:—*a. Proof of age* either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form of which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless. *b.* A recommendation and certificate of moral character from two responsible persons—not a member of his own family—to the effect that he is of regular and steady habits and likely in every respect to prove creditable to the service if admitted. *c.* A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction. *d.* Some evidence of having obtained a registrable qualification. *e.* In the case of natives of India or others educated in that country the candidate will be required to produce a certificate signed by the Director-General, Indian Medical Service, that he is a suitable person to hold a commission in the Indian Medical Service.

The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service.

The physical fitness of each candidate will be determined by a Board of Medical Officers who are required to certify that his vision is sufficiently good to enable him to pass the tests laid down by the regulations. Every candidate must also be free from all other organic disease and from constitutional weakness or other disability likely to unfit him for military service in India. The standard of eyesight is the same as for the Royal Army Medical Corps and the physical examination is in all respects the same (see under Royal Army Medical Corps). Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete. No candidate will be permitted to compete more than three times.

On proving possession of the foregoing qualifications the candidate will be examined by the Examining Board in the following subjects and the highest number of marks attainable will be distributed as follows:—

| | Marks. |
|---|---|
| 1. Medicine, including therapeutics... ... ... ... ... ... | 1200 |
| 2. Surgery, including diseases of the eye ... ... ... ... | 1200 |
| 3. Applied anatomy and physiology... ... ... ... ... ... | 600 |
| 4. Pathology and bacteriology ... ... ... ... ... ... ... ... | 900 |
| 5. Midwifery and diseases of women and children ... ... | 600 |
| 6. Materia medica, pharmacology, and toxicology ... ... | 600 |

N.B.—The examination in medicine and surgery will be in part practical and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. No syllabus is issued in the subjects of pharmacology and toxicology, but the examination will be conducted so as to test the general knowledge of the candidate. No candidate shall be considered eligible who shall not have obtained at least *one third* of the marks obtainable in each of the above subjects and *one half* of the aggregate marks for all the subjects.

For the clinical examinations each candidate should provide himself with notebook, pencil, stethoscope, and ophthalmoscope. In drawing up reports on cases the following points should be observed, viz.: (*a*) A brief history of the case as given by patient, including such points in the family or personal history as have a distinct bearing on patient's case. (*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case. (*c*) Where there is any reasonable doubt in the mind of the candidate as to the exact diagnosis he is to give the alternatives, with his reasons for making the selection. (*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

After passing this examination the successful candidates will be granted about a month's leave and will then be required to attend two successive courses of two months each at Aldershot and at the Royal Army Medical College, Millbank.

The course at Aldershot will include instruction in (1) internal economy, (2) Indian military law, (3) hospital administration, (4) stretcher and ambulance drill, (5) equitation, and (6) map reading.

The course at the Royal Army Medical College will be in (1) hygiene, (2) military and tropical medicine,[3] (3) military surgery, and (4) pathology of diseases and injuries incidental to military and tropical service.

From the day on which the result of the examination is announced lieutenants on probation will receive an allowance of 14*s.* per diem, with quarters (where quarters are not provided, with the usual allowances of a subaltern in lieu thereof), to cover all costs of maintenance, and he will be required to provide himself with uniform (viz., the regulation undress uniform and mess dress of a Lieutenant of the Indian Medical Service, as described in Indian Army Regulations, Vol. VII., with Sam Browne belt, but without the sword).

A lieutenant-on-probation who is granted sick leave before the completion of his course of instruction and final admission to the service will receive furlough pay at the rate of 10*s.* 6*d.* a day for the period of his sick leave.

Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

At the conclusion of the course candidates will be required to pass an examination on the subjects taught during the course of instruction.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations. They will be liable for military employment in any part of India, but in view to future transfers to civil employment, they will stand posted to one of the following civil areas:—(1) Madras and Burma; (2) Bombay with Aden; (3) Upper Provinces—i.e., United Provinces, Punjab, and Central Provinces; and (4) Lower Provinces—i.e., Bengal, and Eastern Bengal and Assam. The allocation of officers to these areas of employment will be determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes. Officers transferred to civil employment, though ordinarily employed within the area to which they may have been assigned, will remain liable to employment elsewhere according to the exigencies of the service.

---

[3] In our opinion as long as the lieutenants-on-probation of the Indian Medical Service receive their instruction at the College, the post of Professor of Medicine in the College should be held by a distinguished officer of the Indian Medical Service and not as at present by an officer of the Royal Army Medical Corps who has had no training as a teacher and does not possess any special knowledge of tropical diseases. The lectures on Military Medicine treat of tropical and other diseases to which soldiers are exposed in the course of their service, the mortality and invaliding by disease, in peace and war, at home and abroad, the management of lunatics under the conditions of military service, &c. The lieutenants-on-probation of both services will attend the New Millbank Hospital where they will be taught practically the details of the management of patients in a military hospital, and the registration of their diseases, the duties of invaliding, the modes of filling up the regulation statistical returns, and other service documents. No provision for instruction in lunacy has as yet been made in London. While in London the lieutenants-on-probation for both services now reside at the St. Ermin's Hotel, Westminster. The candidate's commission as lieutenant will bear the date on which the result of the examination is announced, but his rank will not be gazetted until he has passed the final examination.

The prizes formerly open to competition in the old Army Medical School at Netley have been transferred to the Medical Staff College in London and at present they are re-distributed as follows (but the arrangements as regards all the prizes are to be re-made now that all the course is to be attended in London): The Herbert Prize, the Parkes Memorial Bronze Medal, and the de Chaumont prize are now set aside to be competed for by the lieutenants-on-probation of the Royal Army Medical Corps, while the Webb prize and the Pathology prize are competed for by the young officers of both services. The two Montefiore prizes are open to the competition of the lieutenants-on-probation of the Indian Medical Service, and the Martin Memorial Gold Medal is competed for by the lieutenants-on-probation for the same service after the course in Military Medicine. The Maclean prize was withdrawn on the abolition of the Army Medical School and foundation of the Medical Staff College. The Herbert Prize of £20 is awarded to the lieutenant-on-probation who has obtained the highest number of marks at the Staff College examination in London; the Parkes Memorial Bronze Medal to the one who gains the highest number of marks in the examination in hygiene; the de Chaumont prize of books to the one who takes second place in Hygiene; the Montefiore Medal and £21 are awarded for Military Surgery; the Montefiore Second Prize, a cheque to the lieutenant-on-probation who obtains the second highest number of marks in this branch; a prize of books is given for the highest number of marks gained in Pathology; and the Marshall Webb prize of £5 and a bronze medal is awarded for Hospital Administration.

At the close of the session those lieutenants-on-probation who have obtained one-third of the possible total of marks and have satisfied the authorities that they possess the necessary skill, knowledge, and character for permanent appointment are recommended for commissions as Lieutenants in the Indian Medical Service.[4]

Officers on appointment are, when possible, provided with passage to India by troop transport; when such accommodation is not available passage at the public expense is provided by steamer, or a passage allowance granted if preferred. A charge for messing during the voyage is made at the rate of 2*s.* a day. This payment does not include the cost of liquors, which are charged for as extras. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of terminating his course of instruction, or within 14 days of the termination of his hospital appointment if the Secretary of State has permitted him to hold one will be considered as having forfeited his commission unless special circumstances shall justify a departure from this regulation.

## APPENDIX I.

### CERTIFICATES OF AGE AND NATIONALITY REQUIRED BY NATIVES OF INDIA.

### MEDICAL DEPARTMENT.

The Governor-General in Council is pleased to publish the following rules under which certificates of age and nationality will be issued to natives of India who are candidates for the examinations for the Indian Medical Service held in England:—

### *General Rules applicable to all Candidates.*

A candidate for admission to compete in England for the Indian Medical Service is required before leaving India to obtain a certificate of age and nationality, signed, should he be a resident in British India, by the Secretary to the Government of the Province or the Commissioner of the Division within which his family resides, or, should he reside in a native State, by the highest Political Officer accredited to the State in which his family resides.

*Note.*—In the case of a candidate who has proceeded to England without obtaining a certificate the certificate may be granted to his father or guardian, provided that the latter produces the requisite evidence, and, when making the application, states when the candidate went to England and where he has been residing during his stay in that country.

In order to obtain a certificate, a candidate is required, if resident in British India, to prove the date and place of his birth before the magistrate of the district in which his family resides, or, if resident in a native State, before the Political Officer of the State in which his family resides.

A candidate must, if resident in British India, signify to the Secretary to the Government of the Province or the Commissioner of the Division in which his family resides his desire to compete not less than three months before the date on which he proposes to go to England. If resident within a Native State, he must signify his desire in like manner to the highest Political Officer accredited to the State within which his family resides.

The officer to whom the application is made shall forward it for the purpose of inquiry to the Magistrate of the district or Political Officer of the State in which the applicant's family resides.

The Magistrate or Political Officer to whom such application has been forwarded shall call upon the candidate to appear and give evidence of the date and place of his birth and of his nationality within one month. He will carefully examine into the value of the evidence given and forward a summary of it, with certified copies of all documents tendered, and his comments and opinion, to the officer who forwarded the application to him for inquiry.

The documentary evidence which a candidate may be expected to produce comprises—(*a*) the horoscope; (*b*) family books; (*c*) tradesmen's account books showing entries relating to the birth; (*d*) the record of admission in the registers of the school in which the candidate was educated and the record of the candidate's age at various periodical school examinations; and (*e*) if the candidate is matriculated a certified copy of his application to the Registrar.

Oral testimony of persons acquainted with the candidate's family or otherwise able to give relevant evidence, will also be taken; and the candidate is required to comply to the best of his power with any requisition the Magistrate or Political Officer, as the case may be, may make in order to clear up any doubt as to the purport of the documentary proof.

Any declaration of age made after the application of these rules on the occasion of seeking admission to any university examination, educational institution, or Government office, or otherwise recorded in a formal and deliberate manner, will be taken as conclusive evidence in disproof of the subsequent assertion by the same person that he is of different age to that so declared or recorded.

### *Rules to apply to Candidates Born in His Majesty's Dominions.*

If the Secretary to Government, Commissioner of a Division, or the highest Political Officer accredited to the State, as the case may be, shall be satisfied by the papers submitted that the candidate has stated the date and place of his birth correctly, he will issue a certificate declaring that the candidate has submitted the proofs of his birth to the Magistrate of the district or the Political Officer of the State, as the case may be, and has satisfied him that he was actually born on or about the dates stated by him, viz., the day of , at , a place within His Majesty's Dominions. The nature of the evidence produced by the candidate must be stated in the certificate, which shall be given in the following form:—

> I hereby certify that , who is a candidate for the Indian Medical Service, has submitted the proofs of his birth detailed below, and has satisfactorily shown that he was actually born on or about the date stated, viz., the day of , at , a place within His Majesty's Dominions.
>
> (Here enter details.)

* * * * * * *

If the Secretary to Government, Commissioner of a Division, or the highest Political Officer accredited to the State, as the case may be, finds reason to disbelieve that the candidate was born on the day or at the place asserted by him, the certificate will be refused and the candidate will be unable to obtain admission to the competitive examination for the Indian Medical Service.

Where the date and place of the birth have been formally registered in a register kept by any public officer in British India, an extract from the register, duly certified by the proper official, shall be accepted as sufficient proof of the date and place of the birth.

### *Rules to apply to Candidates not Born within His Majesty's Dominions.*

In addition to the particulars required by Rule 2, a candidate not born in His Majesty's Dominions must also prove that he is the son or grandson of a person born in those dominions.

If the Secretary to Government, Commissioner of a Division, or the highest Political Officer accredited to the State, as the case may be, shall be satisfied by the papers submitted that the candidate has stated the date and place of his birth correctly, and has established the fact that, though born without the limits of His Majesty's dominions, he is the son or grandson of a person born in those dominions, he will issue a certificate in the following form, stating the nature of the evidence produced regarding the candidate's birth:—

> I hereby certify that , who is a candidate for the Indian Medical Service, has submitted the proofs of his birth detailed below and has satisfactorily shown that he was actually born on or about the date stated, viz., the day of , and that he was born at , a place without His Majesty's Dominions, but that he is the $\frac{\text{son}}{\text{grandson}}$ of a person born in those dominions.
>
> (Here enter details.)

* * * * * * *

If the Secretary to Government, Commissioner of a Division, or the highest Political Officer accredited to the State, as the case may be, finds reason to doubt that the candidate was born on the day asserted by him, or that he is the son or grandson of a person born in His Majesty's Dominions, the certificate will be refused and the candidate will be unable to obtain admission to the competitive examination for the Indian Medical Service.

---

[4] A lieutenant who, within a reasonable period before the date at which he would otherwise sail for India, furnishes proof of his election to a resident appointment at a recognised civil hospital, may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination and that he holds himself in readiness to sail for India within 14 days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission. In special cases permission may be granted to lieutenants to delay their departure for India, in order to sit for some further medical examination. Lieutenants remaining in England under such circumstances will receive no pay for any period beyond two months from the date of leaving the Royal Army Medical College, unless the period elapsing before the day on which the majority of the lieutenants of the same seniority sail to India exceeds two months, in which case lieutenants allowed to remain in England will receive pay up to that day. In such cases pay will re-commence on the day of embarkation for India. All the provisions of this clause are subject to the general exigencies of the service. Before the commission of a lieutenant-on-probation is confirmed he must be registered under the Medical Acts in force at the time of his appointment. Candidates who have been specially employed in consequence of a national emergency, either as an officer, or in a position usually filled by an officer, will be allowed, under certain circumstances, to reckon such service towards pension.

A course of instruction in sanitary methods, rules, and regulations as carried out in Indian cantonments was instituted last winter for young officers of the Indian Medical Service and the Royal Army Medical Corps on first arrival in the country. The nature of the diseases to be combated, the social and religious customs and prejudices of the various races, and the limited resources of money and material make large modifications from European methods necessary. Lieutenants of both services are now posted on arrival either to Rawal Pindi, Poona, Lucknow, or Bangalore for one month for this course, which is carried out under the supervision of the senior medical officer and sanitary officer. The instructors are medical officers nominated by the principal medical officer, India, and demonstrations on various subjects have been given by other officers, staff, engineer, and medical. The course consists of demonstrations and inspections in all parts of the lines of British and Indian troops, bazaars, Government dairies, bakeries, slaughter-houses, trade premises of dairymen, bakers, butchers, and aerated water manufacturers and hobies' houses, market and water-supplies, methods of washing clothes, surface drainage, removal and disposal of sewage and refuse, antimalarial measures, disinfection, cantonment hospitals, control of venereal diseases, plague prevention, methods of hospital administration, &c. The officers under instruction thus have an opportunity of learning something of native customs and are encouraged to learn the vernacular, so as to be less dependent upon their subordinates when first put in responsible positions.

A Lieutenant may be promoted to the rank of Captain on completing three years' full-pay service from the date of first commission, but after completing 18 months' service and before promotion to the rank of Captain he will be required to pass an examination in military law and military medical organisation, the result of which may affect his promotion. With reference to the extract from the *Gazette of India*, Medical Department, No. 1047, dated Oct. 24th, 1903, paragraph 4, it is notified that the Government of India has decided that the scope of the examination which lieutenants of the Indian Medical Service will be required to pass after completion of 18 months' service will be as follows: Subject (*h*) Text-books, the relevant portions of the Army Regulations of India, vols. ii. and vi., and the Field Service Departmental Code (Medical). Subhead (*a*) (2): The duties of the subordinate *personnel* of native military hospitals and the preparation of returns and requisitions connected therewith. Subhead (3): The duties of executive medical officers of the Indian Medical Service. Subject (*d*), subhead (2): Indian military law and Indian articles of war as laid down for officers of the Supply and Transport Corps in G.O.C.C. 897 of 1902. One paper will be set in each of subheads (2) and (3) of subject (*h*). The time allowed for each paper will be three hours. The examinations will take place at district headquarters twice annually, on March 1st and Oct. 1st, simultaneously with those for other officers, commencing on Oct. 1st, 1904. The standard required will be for a pass 5 in (*h*) and 5 in law: for special certificate 8 in (*h*) and 8 in law. An officer may present himself for examination in the above subjects either separately or conjointly. The above rules apply only to officers appointed to the Indian Medical Service on or after Jan. 31st, 1900. The names of candidates for examination will be submitted by general officers commanding districts to the Director of Military Education in India so as to reach that officer by Sept. 1st and Feb. 1st annually. Captains are promoted to the rank of Major after 12 years' full-pay service, but this promotion is accelerated by six months in the case of officers who fulfil certain specified conditions. A Major is promoted to Lieutenant-Colonel on completion of of eight years' full-pay service in the rank of Major. All promotions to higher grades are given by selection for ability and merit. In case of distinguished service in the field a medical officer may receive substantive or brevet rank. The ages for compulsory retirement are the same as those for the Royal Army Medical Corps. Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay for officers in military employment (officers in civil employment are entitled to higher rates):—After arrival in India, on first appointment, £250 a year; after the commencement of the tenth year's service for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £450 a year; after the commencement of the twentieth year's service for pension, £600 a year; and after the commencement of the twenty-fifth year's service for pension, £700 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff salary of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving. Officers of the Administrative grades may be granted one period of leave not exceeding eight months during their tenure of appointment. Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to 12 months in all. During such leave the ordinary furlough pay will be given with lodging allowances of 4*s*., 6*s*., and 8*s*. a day for Lieutenants, Captains, and field officers respectively. An officer on leave is required to join at once on being recalled to duty unless certified by a medical board as unfit to do so.

### PAY AND ALLOWANCES.

The rate of pay drawn by Lieutenants of the Indian Medical Service previous to arrival in India is 14*s*. a day, but a Lieutenant (1) who has been permitted by the Secretary of State to hold a hospital appointment will receive no pay while holding it; (2) who is detained by illness in this country will be paid at the rate of £250 a year from the date on which he would otherwise have embarked until the date of embarkation, and at the rate of 14*s*. a day during the voyage to India.

Pay at the above rate is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India.

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the date of their arrival in India:—

| Rank. | Unemployed pay. | Grade pay. | Staff pay. | In officiating medical charge of a regiment. | In permanent medical charge of a regiment. |
|---|---|---|---|---|---|
| | Rs. | Rs. | Rs. | Rs. | Rs. |
| Lieutenant ... ... ... ... ... | 420 | 350 | 150 | 425 | 500 |
| Captain ... ... ... ... ... ... | 475 | 400 | 150 | 475 | 550 |
| ,, after 5 years' service ... | 475 | 450 | 150 | 525 | 600 |
| ,, after 7 years' service ... | — | 500 | 150 | 575 | 650 |
| ,, after 10 years' service ... | — | 550 | 150 | 625 | 700 |
| Major ... ... ... ... ... ... ... | — | 650 | 150 | 725 | 800 |
| ,, after 15 years' service ... | — | 750 | 150 | 825 | 900 |
| Lieutenant-Colonel ... ... ... | — | 900 | 350 | 1075 | 1250 |
| ,, ,, after 25 years' service ... | — | 900 | 400 | 1100 | 1300 |
| ,, ,, specially selected for increased pay | — | 1000 | 400 | 1200 | 1400 |

NOTES.—(*a*) Unemployed pay is drawn by officers of less than seven years' service who are not holding officiating or substantive charge of native regiments. Officers of more than seven years' service draw grade pay alone when unemployed. Staff pay is the pay of a command and is drawn in addition to grade pay.

(*b*) Horse allowance is granted to officers in charge of cavalry regiments at the rate of Rs. 90 a month to Lieutenant-Colonels and Majors, and Rs. 60 a month Captains and Lieutenants.

Note to paras. 16 to 20.—Under present arrangements, officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1*s*. 6*d*. the rupee, and (2) the standard Government rate, which has been fixed at 1*s*. 4*d*. the rupee until further notice.

Officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive at present the following consolidated salaries:—

| | Rs. per mensem. |
|---|---|
| Colonel, 16 (some in civil employ) from ... ... ... | 1800 to 2500 |
| Surgeon-General, 1 @ ... ... ... ... ... ... ... | 2200 |
| ,, 2 @ ... ... ... ... ... ... ... | 2500 |
| ,, (the Director-General I.M.S.) 1 @ | 3000 |

Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of Lieutenant-Colonel who may be appointed to certain posts.

Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

Except in the administrative grades and in certain special appointments officers are not debarred from taking private practice as long as it does not interfere with their proper duties.

### POSTS IN CIVIL EMPLOY.

A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment. The principal appointments, together with the salaries attached to each, are stated in the following table:—

| Description of appointment. | Approximate number of appointments in each class. | Salary per mensem. | | | |
|---|---|---|---|---|---|
| | | When held by a Lieutenant-Colonel. | When held by a Major. | When held by a Captain. | When held by a Lieutenant. |
| | | Rs. | Rs. | Rs. | Rs. |
| Inspectors-General of Civil Hospitals ... ... ... ... | 6 | 2250–2500 | — | — | — |
| Sanitary Commissioner with Government of India ... ... ... ... ... | 1 | 2000–2500 | — | — | — |
| Inspectors-General of Prisons ... ... ... ... ... | 8 | 1500–2000 | — | — | — |
| Principals of Medical Colleges ... ... ... ... ... | 2 | 1650–1800 | 1200–1300 | — | — |
| Professorial Appointments | 23 | 1500–1650 | 1050–1150 | 800–950 | 750 |
| Sanitary Commissioners ... | 6 | 1500–1800 | — | — | — |
| Deputy Sanitary Commissioners... ... ... ... ... | 13 | 1350–1500 | 900–1000 | 650–800 | 600 |
| Bacteriological Appointments ... ... ... ... ... | 5 | 1500–1600 | 1050–1150 | 700–900 | 650 |
| Superintendents of Central Lunatic Asylums ... ... | 6 | 1400–1550 | 1050–1150 | 700–900 | 650 |
| Superintendents of First Class Central Jails ... ... | 5 | 1400–1550 | 950–1050 | 700–850 | 650 |
| Superintendents of Second Class Central Jails ... ... | 5 | 1300–1450 | 850–950 | 600–750 | 550 |
| Civil Surgeoncies (First Class) ... ... ... ... ... | 37 | 1300–1450 | 850–950 | 600–750 | 550 |
| Civil Surgeoncies (Second Class) ... ... ... ... ... | 171 | 1200–1350 | 750–850 | 500–650 | 450 |
| Probationary Chemical Examiner ... ... ... ... | 1 | — | — | 600–750 | 550 |

There are also six Chemical Examiners with Rs. 800–1650 per mensem and a number of Port Health Officers with Rs. 750–1950 per mensem. Other appointments of Resident Surgeons and Physicians at hospitals, &c., are on salaries ranging from Rs. 700 to 1650 per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from Rs. 450 to 1450 per mensem, exclusive of local allowances.

23. Qualified officers of the Medical Service are also eligible for appointments in the Assay and Mint Departments. The salaries of these appointments are from Rs. 600–2250 per mensem.

### TENURE OF OFFICE IN ADMINISTRATIVE GRADES.

The tenure of office of Surgeon-Generals and Colonels is limited to five years.

Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade or for employment in the higher grade of Surgeon-General by promotion thereto.

Absence on leave in excess of eight months during a five years' tour of duty involves forfeiture of appointment.

Surgeon-Generals and Colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw *in India* an unemployed salary of Rs. 1350 per mensem in the former, and Rs. 1000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:—

| — | Surgeon-General. Per diem. | Colonel. Per diem. |
|---|---|---|
| | £ s. d. | £ s. d. |
| After 30 years' service on full pay ... ... | 2 5 0 | 1 14 0 |
| ,, 25 ,, ,, ,, ... | 2 5 0 | 1 10 0 |
| ,, 20 ,, ,, ,, or on promotion, should this period of service not be completed... ... ... ... | 2 0 0 | 1 8 0 |

A Surgeon-General or Colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

### RETIRING PENSIONS AND HALF-PAY.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension on completion of the required periods of service:—

| | |
|---|---|
| After 30 years' service for pension... | £700 per annum + £350 after three years' active employment in India as a Surgeon-General, or + £250 per annum after five years' active employment as a Colonel or £125 after three years as a Colonel. Eight months' absence on leave is allowed to count towards actual service in those grades. |
| ,, 25 ,, ,, ,, | £500 per annum. |
| ,, 20 ,, ,, ,, | £400 ,, |
| ,, 17 ,, ,, ,, | £300 ,, |

Service for pension reckons from date of first commission and includes all leave taken under the leave rules.

Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of ill-health contracted in the performance of military duty.

Officers of the Indian Medical Service are liable after retirement on pension before completing 30 years' service to recall to military duty in case of any great emergency arising up to 55 years of age.

All officers of the rank of Lieutenant-Colonel and Major are placed on the retired list at the age of 55, and all Surgeons-General and Colonels at the age of 60, but the Director-General is allowed to serve until he has attained the age of 62 years. If a Lieutenant-Colonel has been especially selected for increased pay and he attains the age of 55 years before he becomes entitled to the pension of 30 years' service he may be retained until the completion of such service, and in any special case, where it would appear to be for the good of the Service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on temporary or permanent half-pay are granted half-pay at the following rates.

| — | Rates of Half-pay.* | |
|---|---|---|
| | Per diem. | Per annum. |
| | £ s. d. | £ s. d. |
| Under 5 years' service ... ... ... | 0 6 0 | 109 10 0 |
| After 5 ,, ... ... ... | 0 8 0 | 146 0 0 |
| ,, 10 ,, ... ... ... | 0 10 0 | 182 10 0 |
| ,, 15 ,, ... ... ... | 0 13 6 | 246 7 6 |
| Lieutenant-Colonel, under 3 years' service as such ... ... ... ... ... ... | 1 0 0 | 365 0 0 |
| Lieutenant-Colonel, over 3 years' service as such ... ... ... ... ... ... ... ... | 1 7 6 | 501 17 6 |

* Officers cannot retire *in India* on half-pay (No. 45, Feb. 28th, 1865).

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by service.

### INVALID PENSIONS

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half-pay, be granted an Invalid Pension on the following scale:—

| | Per annum. |
|---|---|
| After 16 years' pension service ... ... ... ... | £272 |
| ,, 15 ,, ,, ,, ... ... ... ... | 252 |
| ,, 14 ,, ,, ,, ... ... ... ... | 232 |
| ,, 13 ,, ,, ,, ... ... ... ... | 212 |
| ,, 12 ,, ,, ,, ... ... ... ... | 192 |

### WOUND PENSIONS.

Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

### FAMILY PENSIONS.

The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

### HONOURS AND REWARDS.

Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious officers are named Honorary Physicians and six are named Honorary Surgeons to His Majesty. On appointment as Honorary Physician or Surgeon an officer below the rank of Colonel is promoted to that rank, remaining supernumerary until absorbed. A retired officer appointed Honorary Physician or Surgeon to the King is granted the honorary rank of Colonel, if on retirement he had not attained to that rank.

NOTE.—The following is a list of recognised Civil Hospitals.—England and Wales.—London: St. Bartholomew's Hospital, Charing Cross Hospital, Guy's Hospital, King's College Hospital, London Hospital, Middlesex Hospital, St. George's Hospital, St. Mary's Hospital, St. Thomas's Hospital, University College Hospital, and Westminster Hospital. Birmingham: General Hospital and Queen's Hospital. Bristol: Royal Infirmary and General Hospital. Cambridge: Addenbrooke's Hospital. Cardiff: Cardiff Infirmary. Leeds: General Infirmary. Liverpool: Royal Infirmary and Southern Infirmary. Manchester: Royal Infirmary. Newcastle-on-Tyne: Royal Infirmary.

Oxford: Radcliffe Infirmary. Sheffield: Royal Infirmary and Royal Hospital. Scotland.—Aberdeen: Royal Infirmary. Dundee: Royal Infirmary. Edinburgh: Royal Infirmary. Glasgow: Royal Infirmary and Western Infirmary. Ireland.—Belfast: Royal Victoria Hospital. Cork: North Infirmary and South Infirmary. Dublin: the Adelaide Hospital, the City of Dublin Hospital, the Jervis Street Hospital, the Mater Misericordiæ Hospital, the Meath Hospital, Mercer's Hospital, the Richmond, Whitworth, and Hardwicke Hospital, St. Vincent's Hospital, Sir Patrick Dun's Hospital, and Dr. Steeven's Hospital. Galway: The County Hospital and the Union Hospital.

The Royal Army Medical Corps is at the present time, we believe, a contented service, though the Director-General A.M.S. is excluded from the Army Council, before which he will, however, be summoned whenever his advice and specialist knowledge are required. The relationship of the Director-General to the War Council should be direct and personal. The limitation of the number of lieutenant-colonels has, of course, affected adversely some officers who are well worthy of promotion to the highest ranks, and we look to the Director-General to arrange that really deserving officers may not suffer through the introduction of a regulation which would rob the service of officers who have done some of the best work for the Royal Army Medical Corps.

The blots on the present regulations for the Indian Medical Service are as follows:—

1. That no officer, however employed, can receive any staff allowance unless he has passed the lower standard examination in Hindustani.

2. That an officer who enters the service after his 25th birthday forfeits almost to a certainty his chance of ever reaching a higher pension than £500 per annum.

3. The order of the present Government of India that an officer of the Indian Medical Service must refer the question of the amount of his fees when above a certain low limit to the civil authority. The recent orders might necessitate the violation of professional secrecy.

4. The neglect of the rule that the office of principal medical officer to His Majesty's forces may be held by an officer of the Indian Medical Service.

### SPECIALIST PAY FOR OFFICERS OF THE ROYAL ARMY MEDICAL CORPS AND INDIAN MEDICAL SERVICE IN INDIA.

The Government of India has just approved of revised rules in connexion with specialist appointments in India. 55 of the appointments will be allotted to the Royal Army Medical Corps and 50 to the Indian Medical Service in military employment. The Specialist pay (Rs. 60 a month) is an allowance to officers below the rank of Lieutenant-Colonel for special sanitary, surgical, or medical work done for the State. The following is a list of appointments:—

| | Rs. |
|---|---|
| (*a*) Prevention of disease (including parasitology, bacteriology, and preventive inoculation ... ... ... | 40 |
| (*b*) Dermatology (including the prophylaxis, treatment of, and instructional measures in connexion with, venereal diseases) ... ... ... ... ... ... | 10 |
| (*c*) Advanced operative surgery ... ... ... ... ... | 20 |
| (*d*) Ophthalmology ... ... ... ... ... ... ... | 10 |
| (*e*) Electrical science (including skiagraphy) ... ... | 10 |
| (*f*) Mental science ... ... ... ... ... ... ... | 2 |
| (*g*) Otology, laryngology, and rhinology ... ... ... | 3 |
| (*h*) Midwifery and diseases of women and children ... | 10 |

Selections for appointments and the distribution throughout the several divisions and brigades will be made under the orders of His Excellency the Commander-in-Chief, the guiding principle, however, being that officers will be located in those stations where their services are likely to be of the greatest utility to the army.

It does not appear probable to us that the above rules will attract many men to the rank of the so-called specialist or that the Government can regard with much esteem a status for which it can frame such regulations.

## PUBLIC HEALTH.

### INSTRUCTION FOR DIPLOMAS IN STATE MEDICINE.

THE following resolutions, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," were adopted by the General Medical Council from 1902 to 1905. The regulations require that—"(1) A period of not less than twelve months shall elapse between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery and the examination for a diploma in Sanitary Science, Public Health or State Medicine; (2) every candidate shall produce evidence of having attended, after obtaining a registrable qualification, during a period of six months, practical instruction in a laboratory, British or foreign, approved of by the body granting the diploma and in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught; (3) every candidate shall produce evidence that, after having obtained a registrable qualification, he has for six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) practically studied the duties, routine and special, of Public Health administration either under a whole-time medical officer of health or a medical officer of health who is also a teacher in public health in a recognised school, or in England and Wales under the medical officer of health of a county or of a single sanitary district of 50,000, or in one or more districts of 30,000 in Scotland or Ireland, or under a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command recognised by the General Medical Council, provided that the six months may be reduced to three if a candidate produces evidence that after obtaining a registrable qualification he has for three months attended a course of recognised instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health administration; (4) every candidate shall produce evidence that after having obtained a registrable qualification he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (5) the examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination; (6) the rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890." It was enacted by Section 18 (2) of the Local Government Act [England and Wales], 1888, that after Jan. 1st, 1892, no such appointment (that of medical officer of health) may be made in any county, or in any district or combination of districts with a population of 50,000 or upwards, unless the officer—having, of course, qualifications in Medicine, Surgery, and Midwifery—is registered as the holder of a diploma in Sanitary Science, Public Health, or State Medicine under Section 21 of the Medical Act, 1886, or has during any three consecutive years preceding 1892 been medical officer of a district or combination of districts with a population of 20,000 at least, or has for three years previously to August 13th, 1888, been a medical officer or inspector of the Local Government Board. With the sanction of the Local Government Board the same person may be appointed medical officer for two or more districts.

The regulations in question as to study may be procured at the office of the General Medical Council in London.

*University of London.*—Sanitary Science is included under the head of State Medicine in the M.D. degree, and a certificate has to be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' instruction in public health administration under the supervision of a medical officer of health, and three months' attendance on the practice of a hospital for infectious diseases.

*University of Oxford.*—An examination, open to all registered medical practitioners, conducted partly in writing, partly *vivâ voce*, and in each subject partly practical, is held in Michaelmas Term in the following subjects:—General Hygiene, General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The examination is in two parts, which may be taken together or separately; but Part I. must be passed either before or at the same examination as Part II. The fee for admission to the examination is £5 for each part. The names of candidates must be sent to the Secretary to the Boards of Faculties, to whom applications for any further information should be made.

*University of Cambridge.*—Two examinations in so much of State Medicine as is comprised in the functions of medical officers of health will be held during the year 1907–8 in Cambridge. Each examination will consist of two parts. Part I. will begin on the first Wednesday in April and October respectively; Part II. will begin on the Monday following in April and October respectively; and each part will end on the following Thursday. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of registrable qualification and the time when he presents himself for either part of the examination; (2) he produce evidence of having, after obtaining a registrable qualification, attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; and (4) he produce evidence of having, after obtaining a registrable qualification, for six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) been associated day by day in the duty, routine and special, of public health administration under the supervision of: (*a*) in England and Wales either the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland or Ireland the medical officer of health of a county or of one or more sanitary districts having a population of not less than 30,000; or (*c*) a medical officer of health who is a teacher in the department of public health of a recognised medical school; or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps or district; or (*e*) in the British dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000 who himself holds a registrable diploma in public health. A certificate of an assistant officer of health of a county or a large sanitary district may be accepted, provided the medical officer of health of a county or district consents to the assistant officer giving such instruction. Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation. A candidate who produces evidence that he has himself held, for a period of not less than three years, an appointment as medical officer of health of a sanitary district within the British dominions and having a population of not less than 15,000 shall be exempt from the provisions of paragraph (4). The provisions as to previous study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890.

The first part of the examination will comprise the following subjects. The elements of chemistry and physics: methods of chemical analysis and in particular the analysis of air and water. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics in their application to warming, ventilation, water-supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water-supply. The elements of meteorology in relation to health. Principles of building construction in their application to dwellings, hospitals, and schools. The disposal of sewage and refuse and the general principles of sanitary engineering. Disinfectants, their chemistry and use. The chemical and microscopical examination of foods and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection and of the diseases of animals that are transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects. Laws and Statutes relating to Public Health.[1] The model by-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cowsheds, &c. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations and the diseases to which they give rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of vital statistics in relation to public health. (N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of sanitary science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of medical officers of health.) The examinations in both parts will be oral and practical, as well as in writing. One day at least will be devoted to practical laboratory work and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work. Candidates may present themselves for either part separately or for both together at their option; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts. Every candidate will be required to pay a fee of £6 6*s*. before admission or re-admission to *either part* of the examination, but candidates who have presented themselves before the year 1896 will be re-admitted to either part on payment of a fee of £5 5*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health. All applications for information respecting this examination and the courses of study in the University should be addressed to Dr. Anningson, Walt-ham-sal, Barton-road, Cambridge, Secretary to the Syndicate. Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose and transmit them with the fees to Mr. J. W. Clark, Registrary, University of Cambridge, for the April examination on or before March 17th and for the October examination on or before Sept. 15th. The prescribed certificate must be sent to the Registrary so as to reach him not later than 10 A.M. on March 30th and Sept. 28th respectively. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled, without an additional fee, to be a candidate on one subsequent occasion. Candidates must before admission to either part of the examination produce evidence of having satisfied provisions (1), (2), and (3), and before admission to Part II. having satisfied provision (4), above mentioned. The following is a list of colleges and schools of medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the State Medicine Syndicate: The University Laboratories, Cambridge; London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London; University College, London; the Royal Army Medical College, London; the Victoria University of Manchester; the University of Durham Medical School, Newcastle-on-Tyne; University of Birmingham; University of Liverpool; St. Mary's Hospital Medical College; Charing Cross Hospital College; Westminster Hospital Medical School; University College, Bristol; the University of Leeds; Guy's Hospital Medical School; St. Mungo's College, Glasgow; Edinburgh University; Middlesex Hospital Medical School; Royal Southern Hospital, Liverpool; Royal Colleges, Edinburgh; Surgeons' Hall, Edinburgh; Trinity College, Dublin; Queen's College, Belfast; St. Thomas's Hospital Medical School; University College, Cardiff; University College, Sheffield; Medical School, Catholic University, Dublin; St. George's Hospital Medical School; University of Glasgow; University of Aberdeen; Anderson's College, Glasgow; and the Royal Institute of Public Health.

*University of Durham.*—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor in Hygiene (B.Hy.) must be at least twenty-two years of age, registered, and a graduate in Medicine of a recognised university, and at least twelve months shall have elapsed after the date when the candidates obtained their first registrable qualification in Medicine, Surgery, and Midwifery before presenting themselves for examination. They shall spend six months at Newcastle-upon-Tyne studying Comparative Pathology, Practical Bacteriology, Outdoor Sanitary Work, Infectious Diseases, Sanitary

---

[1] All candidates will be examined in the provisions of the English Statutes relating to public health, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, *when applying for admission to the examination, he give notice* of his desire and indicate the special law he proposes to offer.

Chemistry, and Physics. They have to pass an examination in Sanitary Chemistry, Physics, Comparative Pathology, Sanitary Legislation, Vital Statistics, Nosology, Climatology, Meteorology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B Hy. is 10 guineas and for the degree £6 6*s*. The examination is divided into two parts and candidates may present themselves for either part or both together at their option. Candidates for the degree of Doctor of Hygiene (D.Hy.) must have acquired the degree of Bachelor in Hygiene, must for two years subsequently have been engaged in practice as a medical officer of health, and must write an essay upon some practical hygienic subject. The fee for the examination for the degree of D.Hy. is £5 and for the degree £6 6*s*. The regulation for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor of Hygiene, except that the candidate is not required to be a graduate in Medicine of a recognised University and the course of study need not be passed at Newcastle-upon-Tyne. The fee for the examination and Diploma in Public Health is 10 guineas.

*Victoria University of Manchester.*—An examination in Public Health is held twice yearly under the following regulations: The examination is in two parts and is written, oral, and practical. Candidates before entering for either part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates of having attended courses of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; of having attended, after obtaining a registrable qualification, during at least six months, practical instruction in a laboratory approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; of having, after obtaining a registrable qualification, attended for three months the clinical practice of a hospital for infectious diseases; of having, after obtaining a registrable qualification, practically studied the duties of outdoor sanitary work for not less than six months under the medical officer of health of a county or of a large urban district. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be admitted to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. The fee for each part is £5 5*s*. and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health. The examinations will begin about the middle of January and the middle of July in each year.

*University of Birmingham.*—The University grants a degree of B.Sc. in Public Health and also a Diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University and they must, in addition, have attended a three months' course of Geology in the University. The following are the regulations for Diploma in Public Health (general conditions):—1. All candidates must be registered under the Medical Act. 2. The examinations will be held in the months of January and June and will consist of two parts. No candidate will be allowed to pass Part II. until he has passed Part I. 3. Candidates may enter for Parts I. and II. separately or at the same time. 4. The examination in each part will be written, oral, and practical. 5. Candidates intending to present themselves for either part of the examination must give notice in writing to the registrar of the University on the date prescribed in the calendar. 6. The fee for each part of the examination is £2. Admission fee to degree or diploma, £6. The conditions of admission to the examinations are identical with those recently approved by the General Medical Council.

Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the staff College and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the Examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

*University of Liverpool.*—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The curriculum for the various D.P.H. Examinations demands (1) a six months' course of practical instruction in Sanitary Science; (2) a six months' course of laboratory instruction in Chemistry and Bacteriology; and (3) practical instruction in Infectious Diseases. Fees.—Chemistry, £5 5*s*.; Bacteriology, £5 5*s*.; Practical Sanitation, £25; Tutorial Classes, £7 7*s*.; Infectious Diseases, £3 3*s*. The courses may be taken out at any time and students are allowed to work daily in the laboratories.

*University of Leeds.*—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The examination, which is held twice in each year—namely, in July and December—is in two parts, and is written, oral, and practical. Candidates, before entering for the first part of the examination, must have held for not less than 12 months a registrable qualification in Medicine, Surgery, and Midwifery and must present satisfactory certificates (1) of having attended an approved course of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; (2) of having attended, after obtaining a registrable qualification, during at least six months practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man. Candidates before entering the second part of the examination must present certficates (3) of having, after obtaining a registrable qualification, attended during not less than three months the clinical and administrative practice of a hospital for infectious diseases approved by the University; (4) of having, after obtaining a registrable qualification, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under 2), been diligently engaged in acquiring a knowledge of the duties, routine and special, of Public Health administration under the supervision of (*a*) the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or (*b*) a medical officer of health devoting his whole time to Public Health work, or (*c*) a medical officer of health who is also a teacher in the Department of Public Health of a recognised medical school, or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, district, or command recognised for the purpose by the General Medical Council, or of having attended during three months as required above, and during three months after obtaining a registrable qualification, having attended a course or courses of instruction, approved by the University, in subjects bearing on Public Health Administration. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be allowed to pass in Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. Fees—The fee for each part is £5 5*s*., and must be paid at least 14 days before the commencement of the examination. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination and who is legally registered will receive a Diploma in Public Health. Medical practitioners registered or entitled to be registered on or before Jan. 1st, 1890, may be exempted from producing the above required certificates of study.

*University of Sheffield.*—At this University courses of instruction have been arranged for the Diploma in Public Health which qualify for the Cambridge University Diploma, for that given by the Conjoint Board of England, and for the degree of M.D. in State Medicine of the University of London.

*University of Edinburgh.*—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh, viz., Bachelor of Science in Public Health and Doctor of Science in Public Health. Candidates for the degree of B.Sc. in Public Health must be graduates in

Medicine of a University of the United Kingdom, or of some other University recognised for the purpose, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least 20 hours per week during a period of not less than eight months, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University; they must also have attended courses of instruction in Physics and Geology in some Scottish University. Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than 18 months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health in some University of the United Kingdom or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of 40 lectures at least; one of which courses shall deal with medicine and the other with engineering, each in its relation to public health. They must also give evidence that, subsequent to graduation in medicine, (1) they have during three months, which must be separate and distinct from the period of laboratory instruction, been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the supervision of (*a*) a medical officer of health recognised for this purpose by the General Medical Council; (*b*) a sanitary staff officer of the Royal Army Medical Corps, having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council; (2) that they have attended during three months the practice of a hospital for infectious disease, at which opportunities are afforded for the study of methods of administration; and (3) that they have had three months' instruction in mensuration and drawing. The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics. Graduates who have held the degree of B.Sc. in Public Health from the University of Edinburgh for a term of five years may offer themselves for the degree of D.Sc. in Public Health in that University. They must then present a Thesis and pass an examination in Public Health. The fees are £3 3*s*. for the First and £3 3*s*. for the Second B.Sc. Examinations, and £10 10*s*. for the degree of D.Sc.

*University of Aberdeen.*—The Diploma in Public Health (D.P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than 12 months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having during six months (whereof three months must be distinct from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the medical officer of health of a county or large urban district. He must have regularly attended for three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. He must also have obtained practical instruction in the drawing and interpretation of plans. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s*. The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

*Royal University of Ireland.*—This University grants a Diploma in Public Health. It is conferred only on graduates in Medicine of the University. Candidates are not admitted to this examination until the lapse of 12 months from the time of obtaining the M.B., B.Ch., B.A.O. degrees; they must give notice in writing to the Secretaries of their intention to present themselves and must pay the fee, £2, at least one month previously to the examination. Candidates are required to produce a certificate of having, after obtaining the degrees of M.B., B.Ch., B.A.O., attended six months' practical instruction in a laboratory approved by the University, and also of having for six months practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district. Candidates at this examination must answer in the following subjects: (1) Physics, (2) Chemistry, (3) Meteorology, (4) Sanitary Engineering and Architecture, (5) Bacteriology, and (6) Hygiene, Sanitary Law, and Vital Statistics.

*University of Dublin.*—The Diploma in Public Health is conferred, after examination, on the following conditions. The candidate must be a Doctor in Medicine or a graduate in Medicine, Surgery, and Midwifery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the Medical Register at least 12 months before the examination. The candidate must have completed (unless registered as a practitioner on or before Jan. 1st, 1890), subsequently to registration, six months' practical instruction in a chemical and bacteriological laboratory or laboratories approved by the University, must have studied practically outdoor sanitary work for six months under an approved officer of health (at least three months of this period being distinct from the time spent in laboratory work), and must have spent three months in a fever hospital where opportunities are afforded for the study of methods of administration. The subjects of examination will be:—Part I.: Chemistry, Bacteriology, Hygiene, Pathology (including methods of post-mortem examinations), Physics, and Meteorology. Part II.: Hygiene and Epidemiology, Vital Statistics, Public Health Acts, and Sanitary Engineering and Reports.

*Royal College of Physicians of London and the Royal College of Surgeons of England.*—The following are the regulations for obtaining the Diploma in Public Health: Section 1: Candidates must be registered under the Medical Act. The examination consists of two parts. The fee for each part is £6 6*s*. A candidate intending to present himself must give 14 days' written notice to the Secretary, at the Examination Hall, Victoria Embankment, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I. of the examination on producing evidence of being at least 23 years of age, and to Part II. on producing evidence of being at least 24 years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England during a period of six months; and (3) of being at least 23 years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having been associated day by day in the duty, routine and special, of Public Health administration during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Par. 2 for Part I.) under the supervision of a medical officer of health who fulfils certain conditions which can be ascertained on application to the secretary[2]; (2) of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, after obtaining his registrable qualification in Medicine, Surgery, and Midwifery; and (3) of being at least 24 years of age.

*The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow.*—All candidates for the Diploma in Public Health must have been qualified for at least one year. Those qualified before

---

[2] Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Regulation 2) in the case of any candidate who produces evidence that after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration given by a teacher or teachers in the department of public health of a recognised medical school.

1890 do not require to produce evidence of attendance on any special courses. All other candidates must have attended, after qualifying, six months' practical instruction in a recognised laboratory or laboratories, and must have studied for six months the duties of outdoor sanitary work under the medical officer of health of a county or large urban district or a medical officer of health who is also a teacher of Sanitary Science in a Medical School, or a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps District or command. There are two examinations, and candidates may enter for both at one period or for either separately. The First Examination includes (*a*) Laboratory Work (Chemistry and Bacteriology), (*b*) Physics, and (*c*) Meteorology; and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Written and Oral Examinations on Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of 3 guineas is payable by rejected candidates for either examination. The examination is held twice yearly, in May and October. The published regulations provide detailed synopses of the subjects of examination. The Registrar for Edinburgh is Mr. James Robertson, solicitor, 54, George-square, and for Glasgow Mr. Alexander Duncan, LL.D., 242, St. Vincent-street.

*Royal College of Physicians and Royal College of Surgeons in Ireland.*—Stated examinations for the Diploma in Public Health are held in the months of February, May, July, and November. A special examination for the diploma may, at the discretion of the Committee of Management (except during the months of August and September), be obtained on payment of £15 15*s*., in addition to the ordinary fees mentioned below, and on giving notice at least one fortnight before the date of the proposed examination. Every candidate for the Diploma in Public Health must be a registered medical practitioner. (Candidates registered or entitled to be registered prior to January, 1890, are exempt from the rules as to study.) He must subsequently to qualification (1) receive six months' laboratory instruction in Chemistry, Bacteriology, and the Diseases of Animals transmissible to man; and (2) during six months practically study outdoor sanitary work under a medical officer of health and shall as an additional requirement attend a hospital for infectious diseases. Candidates are examined on four days, commencing on the first Monday of February, May, and November. Each candidate must return his name to the secretary of the Committee of Management under the Conjoint Scheme two weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. The fee for the examination is £10 10*s*. The examination for the Diploma in State Medicine comprises the following subjects :—Hygiene, Chemistry, Meteorology and Climatology, Engineering, Vital Statistics, Sanitary Law, and Bacteriology. For further particulars apply to the Secretary, Committee of Management; Office, Royal College of Physicians, Dublin.

## DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without the special licence; but it is of eminent advantage to take the L.D.S., otherwise few dental appointments at general or special hospitals or dispensaries are available, and, what is still more important, the manual dexterity and knowledge of mechanics requisite for the successful practice of dentistry can only be gained by long and careful training at the dental operating chair and in the dental laboratory; and, this having been attained, it is but little trouble to pass the special examinations. The subjects beyond those included in the general qualification are—Dental Anatomy and Physiology (Human and Comparative), one course; a separate course of Dental Histology, including the preparation of microscopical sections; Dental Surgery, one course; a separate course of Practical Dental Surgery; a course of not less than five lectures on the Surgery of the Mouth; Dental Mechanics, one course; a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns; Dental Metallurgy, one course; a course of Practical Dental Metallurgy; Practice of Dental Surgery at a recognised school, two years, and a certificate of having been engaged during a period of not less than two years in acquiring a knowledge of Dental Mechanics (this may be obtained by apprenticeship to a duly qualified dental practitioner or in the mechanicalldepartment of a recognised dental hospital). The Denta Schools in London are the Royal Dental Hospital of London, the National Dental Hospital and College, and Guy's Hospital Dental School. Most of the large provincial towns have now dental hospitals. A convenient arrangement by which the M.R.C.S., L.R.C.P., and L.D.S. can be taken is as follows:—The Preliminary Examination in General Education having been passed the student should commence his mechanical training at a dental school or with a qualified dentist and register as a dental and medical student. (This instruction, however, may be taken prior to the date of registration as a dental student.) During his mechanical training the student should receive instruction in Chemistry and Physics, Pharmacy and Elementary Biology, and pass in these subjects before entering the hospital. (The foregoing constitute the First Examination.) Having entered the hospital the student should attend the dental and general courses contemporaneously, and pass at the end of the second winter the Second Examination—namely, Anatomy and Physiology. At the completion of his second year of study the Dental Examination should be passed. The student should then devote his time to general studies and pass the Third Examination. When time permits it is advisable to attend the general hospital only until after the First and Second Examinations have been passed. At this point a break may be made to admit of the completion of the dental curriculum and the passing of the examinations for the L.D.S. diploma. The best course, however, is entirely to finish the curriculum for the M.R.C.S. and L.R.C.P. and then take the special Dental work. The regulations for the Dental Licence of the Royal Colleges of Ireland and Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow are very similar to those of the English College. The L.D.S. can also be obtained alone.

*The Registration of Dental Students* is carried on at the Medical Council Office in London in the same manner as the existing registration of medical students, and subject to the same regulations as regards Preliminary Examinations. Candidates for a diploma in Dental Surgery must produce certificates of having been engaged during four years in professional studies and of having received two years' instruction in mechanical dentistry. The two years of instruction in mechanical dentistry, or any part of them, may be taken by the dental student either before or after his registration as a student, but no portion of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

It is now necessary for anyone practising Dental Surgery in this country to be on the Register and no foreign qualifications are admitted.

*The Royal College of Surgeons of England* grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have registered as dental students after Jan. 1st, 1897. Candidates are required to pass three examinations: the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination. I. Preliminary Science Examination.—Before admission to this examination the candidate must produce a certificate of having received instruction (which may be taken prior to the date of registration as a dental student) at a recognised institution in Chemistry, Physics, and Practical Chemistry. The examination consists of these subjects and is identical with Part I. of the First Examination of the Examining Board in England. II. The First Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of mechanical dentistry, under the instruction (which may be taken prior to registration as a dental student) of a competent practitioner or under the direction of the superintendent of the mechanical department of a recognised dental hospital. 2. Of registration as a dental student by the General Medical Council. 3. Of having attended at a recognised Dental Hospital and School (*a*) a course of lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of Lectures on Dental Mechanics; and (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns. Candidates may present themselves for the First Professional Examination on production of the required certificates. The Examination consists of Mechanical Dentistry and Dental Metallurgy, the examination in Dental Metallurgy being by written paper. III. The Second Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; (*e*) a course of not less than five lectures on the Surgery of the Mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery; (*f*) a course of Dental Materia Medica; and (*g*) a course of Dental Bacteriology. 3. Of having attended at a recognised dental hospital or in the dental department of a recognised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. 5. Of having performed Dissections at a recognised medical school during not less than 12 months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery during two winter sessions. 7. Of being 21 years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of: Part I., General Anatomy and Physiology, General Surgery and Pathology; Part II., Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination in Part I. comprises General Anatomy and Physiology, General Pathology and Surgery, and in Part II., Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries and may be required to prepare and fill cavities or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Candidates may take the two parts of the examination together or separately. Candidates must pass Part I. before proceeding to Part II. If they fail in Part I. they are not allowed to proceed with Part II. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination for any degree or qualification in medicine or surgery registrable under the Medical Act of 1886. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and Universities above mentioned. The fee for the diploma is 20 guineas and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional Examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March, or April, July, and October in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give 21 clear days' notice of their intention to present themselves for examination.

*Royal College of Surgeons, Edinburgh.*—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. James Robertson, Clerk to the Royal College of Surgeons, at 54, George-square, Edinburgh. Students who commenced their professional education by apprenticeship or attendance on lectures before July 22nd, 1878, are exempt from the Preliminary Examinations. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates who have commenced their studies after Oct. 31st, 1898, must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, with Laboratory Instruction, one course of six months; Physics, with Laboratory Instruction, three months; Physiology, with Laboratory Instruction, one course of six months; Surgery, including Surgical Pathology, one course of six months; Medicine, including Medical Pathology, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction on Surgery and Medicine, twelve months. These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), with Practical Dental Histology, three months; Dental Surgery and Pathology (not less than 20 lectures), with the Materia Medica and Therapeutics applicable to Dental Surgery, three months; Dental Mechanics (not less than 12 lectures), Theoretical and Practical, with Dental Metallurgy, three months—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Practical instruction in Mechanical Dentistry from a registered Dentist, or in the Mechanical Department of a recognised dental hospital and school, as apprentices or otherwise, either before or after registration, for three years. Certificates of attendance on such of these courses as may be respectively required will entitle candidates to appear either for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the courses on Anatomy, Chemistry, and Physiology. The examination embraces Anatomy, Physiology, Chemistry, and Physics. The fee for those candidates who began study after Oct. 1st, 1896, is £5 5*s*. Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is 21 years of age, and must pay a fee of £10 10*s*. The examination embraces Surgery, Medicine, Therapeutics, and the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, and Dental Mechanics with Dental Metallurgy. Candidates who claim exemption from the First Dental

Examination on the ground of having passed the First and Second Triple Qualification Examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £15 15*s.* payable for the dental diploma. The fee payable by candidates who began study before Oct. 1st, 1896, shall be £10 10*s.*, £4 4*s.* of which are payable on entering for the First Examination and £6 6*s.* on entering for the Second Examination.

*Faculty of Physicians and Surgeons of Glasgow.*—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh. Special provision is made for candidates who intend to qualify both in Medicine and in Dentistry. Candidates can enter for the First Examination in three divisions, the first embracing Physics and Chemistry, the second Dental Metallurgy and Dental Mechanics and the third Anatomy and Physiology. There is also an examination in Practical Dentistry conducted in a dental hospital.

*Royal College of Surgeons in Ireland.*—All information concerning the licence in Dental Surgery may be obtained from the Registrar of the College, who will receive the applications of candidates for permission to be examined. The bank receipt for fees, together with all certificates, &c., are to be lodged with him at least seven days prior to the day fixed for the commencement of the examination. The Primary Dental Examinations commence on the second Monday in the months of February, May, and November. The Final Dental Examinations commence on the Thursdays immediately following the Primary Dental Examinations. Candidates are required to pass three examinations—viz., Preliminary (in General Education), Primary Dental, and Final Dental. Preliminary Examination.—All examinations in general education recognised by the General Medical Council are accepted by the College. Preliminary Examinations are held conjointly by the Royal Colleges of Physicians and Surgeons on the third Wednesdays in March and September. Primary Dental Examination.—Fee £10 10*s.*; for re-examination, if rejected, £5 5*s.* Every candidate[1] is required, before admission to the Primary Dental Examination, to produce evidence—(1) of having passed a recognised preliminary examination and of having been registered as a medical or dental student by the General Medical Council; (2) of having, subsequently to registration as a dental or medical student, attended at a recognised medical school the following courses: Lectures on Practical Anatomy, including Dental Anatomy, six months; Demonstrations and Dissections, two courses of six months each; Lectures on Chemistry, six months; Lectures on Physiology, including Dental Physiology, six months; Practical Histology and Practical Chemistry, including Metallurgy, three months; (3) of having attended Clinical Instruction at a recognised general hospital for one year. The subjects of this examination are: (1) Physics;[2] (2) Chemistry, including Metallurgy; (3) Anatomy; (4) Physiology and Histology; and (5) Surgery. Final Examination.—Candidates holding L.R.C.S.I. or students who have passed Primary Dental or Third Professional Examination of the College, £10 10*s.*; re-examination, £5 5*s.* Fees for Final Examination of all other candidates, £26 5*s.*; re-examination, £10 10*s.* Extra fee for Special Examination, £5 5*s.* Candidates must produce evidence of having passed the Primary Dental Examination of this College, or the Third Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, and are required to produce certificates of having attended: (1) the following courses of lectures recognised by the College: Dental Surgery and Pathology (two courses), Dental Mechanics (two courses); (2) for two years the practice of a dental hospital recognised by the College or of the dental department of a general hospital so recognised; (3) of having been engaged during four years in professional studies; and (4) of having received three years' instruction in Mechanical Dentistry from a registered dentist. Candidates holding a diploma in Surgery shall be admissible to the Final Dental Examination on producing certificates of having attended: (1) one course of Lectures on Dental Surgery and Pathology; (2) one course of Lectures on Dental Mechanics; (3) for one year the practice of a dental hospital recognised by the College, or of the dental department of a general hospital so recognised, where such attendance has been subsequent to the date of diploma (this remission (3) has been made on the understanding that the surgeon devotes his whole time to dental work); and (4) of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist. The following are the subjects of examination: Dental Surgery, Theoretical (including Dental Pathology), Clinical, and Operative; Dental Mechanics, Theoretical, Clinical, and Practical (including the Metallurgy of the Workshop). Examinations for the Licence in Dentistry *sine curriculo*: The Council has power to admit to examination, *sine curriculo*, candidates whose names are on the Dental Register published under the direction of the General Medical Council, and who are unable to furnish the certificates required by the foregoing regulations, on presentation of a special schedule of application.

*University of Birmingham.*—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that the students may fully qualify themselves for the Dental diploma of this and other universities and licensing bodies. There is a special and well-equipped Dental Museum and Laboratory. An Entrance Exhibition, value £37 10*s.*, is awarded annually at the commencement of the winter session. The following are the regulations for Degrees in Dentistry:—1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees. 3. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. 4. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Elementary Biology, (*d*) Anatomy and Practical Anatomy, and (*e*) Physiology and Practical Physiology. *B.* That he has attended the following courses and passed the class examinations in each of these subjects: (*f*) One Special Course of Lectures on Medicine, (*g*) One Special Course of Lectures on Surgery, and (*h*) Pathology and Bacteriology. *C.* That he has attended courses and passed the class examinations in: (*k*) Dental Histology and Patho-Histology, (*l*) Comparative Dental Anatomy, and (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. 5. The Final Examination will deal with the subjects in Classes *C* and *D*. 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Dental Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

The University also grants a diploma in Dental Surgery (L.D.S.) to candidates who have followed the prescribed regulations for the same.

*University of Leeds.*—The degrees in Dental Surgery are Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D.). All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation examination, to have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I. and II. of the first examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the University. No candidate will be admitted to the degree who has not attained the age of 21 years on the day of graduation. All candidates are required to have passed the following examinations: the first examination, the second examination, and the final examination. Each examination will include practical work in the subjects offered. All candidates shall be required, before presenting themselves for examination, to furnish to the registrar certificates testifying that they have attended the prescribed courses of instruction in accordance with the regulations of the University in each of the subjects which they offer, and that they have fulfilled the other requirements of the ordinance and regulations in respect of such examination. Candidates for the diploma in Dental Surgery (L.D.S.) are required to present certificates showing that they have attained the age of 21 years, that they have attended courses of instruction approved by the University, extending over not less than four years, and that they have completed a pupilage of three years, two of such years at least having been taken before the First Professional examination. Candidates are required to satisfy the examiners in the several subjects of the following examinations: A preliminary examination in Arts; a preliminary examination in Science; the First Professional examination; and the Final examination. The classes in the Department of Dentistry will begin on Oct. 1st. The instruction in the Preliminary subjects of Chemistry, Physics, and Biology will be given at the University in College-road. The classes in the other subjects and the systematic courses in Dental subjects will be held in the School of Medicine of the University in Thoresby-place. The systematic instruction in the School of Dentistry will be given by the following:—Anatomy: Professor T. W. Griffith. Physiology: Professor de B. Birch. Pathology: Professor A. S. Grünbaum. Medicine: Professor A. G. Barrs. Surgery: Professor H. Littlewood. Dental Surgery: Mr. A. G. G. Plumley. Operative Dental Surgery: Mr. T. S. Carter. Dental Anatomy and Physiology: Mr. A. Alan Forty. Dental Mechanics: Mr. C. Rippon. Dental Metallnrgy: Mr. W. Lowson. Dental Materia Medica: Mr. J. H. Gough. The clinical instruction will be given in the Dental Department of the Leeds Public Dispensary, which is recognised by the University and by the Royal College of Surgeons. Applications for the prospectus should be made to the Dean of the Faculty of Medicine.

---

[1] Candidates educated in England or Scotland are admitted to the Primary Dental Examination on the production of the certificates that would be necessary for both Primary and Final Examinations in their own countries.

[2] Candidates who have passed in Chemistry and Physics at a First Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, are exempted from examination in these subjects at the Primary Dental Examination.

*University of Liverpool* (*Liverpool Dental Hospital and School of Dental Surgery*).—The University grants a diploma in Dental Surgery (L.D.S.) and degrees in Dental Surgery (B.D.S. and M.D.S.). The courses of systematic instruction are given in the University buildings, five minutes' walk from the Dental Hospital. The two institutions are now closely associated and the management of the curriculum is in the hands of the Board of Dental Studies. At the Dental Hospital recent alterations have been made, and as it now stands this school offers advantages to students which are not excelled anywhere. The ground floor of the building contains the following: Extraction room, with all needful appliances; anæsthetic room, specially reserved, with every convenience; and large waiting-room for patients. The first floor has a large board-room and a very comfortable students' room set apart exclusively for the use of students. The whole top floor of the building has been thrown into one fine, airy, and well-ventilated operating room. This room will accommodate upwards of 30 operating chairs, which are of the "Morrison pattern," and each of which has a special electric light suspended before it. In the basement a very convenient workroom has been fitted up containing the necessary requirements, and there are commodious lavatories for students. A new Laboratory for practical mechanical work has also been constructed so as to meet the requirements of the curriculum. It is adequately furnished with all the modern appliances of a dental workshop. A skilled dental mechanic has been engaged and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lecture at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes 12 honorary Dental Surgeons, a Demonstrator, two Anæsthetists, two House Surgeons, and a Curator. Fees for two years' hospital practice, £21. Apprenticeship.—A limited number of apprentices are admitted annually. Fees for three years, £105. Further information may be had from the Warden, Mr. W. H. Gilmour. The various medical and dental lectures are given at the University of Liverpool. The Anatomical Department has been removed to a new building, comprising a spacious dissecting room and a museum which contains an excellent collection of skulls illustrative of human and comparative dental anatomy. Fees: The composition fees are as follows: Diploma course (L.D.S.): Chemistry and Physics, £11 11*s.*; all other lectures, £50 in two instalments. Degree course (B.D.S.): £67 10*s.* for all lectures (including Chemistry, Physics, and Zoology) in three instalments. Two years' dental hospital, £21; general hospital practice, £10 10*s.*; three years' mechanical instruction (pupilage), £105.

*University of Manchester.*—In the University of Manchester the Dental Department forms an integral part of the Faculty of Medicine. This contains a series of laboratories, lecture rooms, and museums which will bear comparison with those of any other school in the kingdom, and the fullest opportunities for study are offered to students preparing for any of the professional examinations. Instruction adapted to the requirements of students preparing for the B.D.S. Degree and the Dental Diplomas of the University, the Royal College of Surgeons of England, and of other licensing bodies is given during the Winter and Summer sessions both at the University and at the Victoria Dental Hospital in Devonshire-street. The required general hospital practice is taken at the Manchester Royal Infirmary. Women students are admitted to the classes in the Dental Department and for them a separate laboratory for Practical Anatomy and common rooms are provided. The composition fee for candidates for the University degree of Bachelor of Dental Surgery is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the University Diploma in Dentistry is 55 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the L.D.S. of England is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. Students who have already served their apprenticeship with a private practitioner, and who propose to complete the final portion of their attendance at the University and at an approved dental hospital, will be required to pay the composition fee in two equal instalments at the commencement of the first and second years of studentship. The payment of any of the above composition fees will entitle the student to attend all the classes in the following list which are required for their respective examinations. The composition fee does not include the hospital fees, the examination fees, the fee for the conferment of the degree or the diploma, the registration fee, nor the fees for chemicals and chemical apparatus (£1 15s.).

---

## TEACHING INSTITUTIONS IN DENTISTRY.

See also under Universities of Birmingham, Leeds, Liverpool, and Manchester above.

### LONDON.

*Royal Dental Hospital of London and School of Dental Surgery, Leicester-square.*—The school provides the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 4 P.M., there being one staff for the morning and another for the afternoon of each day. Pupils are received for the mechanical training recognised by the curriculum. The demonstrators at the commencement of each session give a course of lectures on Operative Dental Surgery. The five house surgeoncies are held for six months each and are open to all qualified students. The lecturers, in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the mechanical laboratory. One Entrance Scholarship of the value of £20. The Saunders Scholarship awarded to second year students. The Storer Bennett Research Scholarship for Scientific Research in any branch of Dental Surgery, value £50, is awarded triennially. The Alfred Woodhouse Scholarship of £35 and the Robert Woodhouse Prize of £10 for Practical Dental Surgery. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses, at the end of the summer and winter sessions. A prize of the value of 5 guineas is given by Messrs. Ash and Sons for the best essay on some surgical subject connected with Dental Surgery. Consulting Physician: Sir Richard Douglas Powell, Bart. Consulting Dental Surgeons: Mr. T. Arnold Rogers, Mr. Morton Smale, and Mr. C. S. Tomes, F.R.S. Dental Surgeons: Mr. J. F. Colyer, Mr. C. F. Rilot, Mr. H. Lloyd Williams, Mr. W. H. Dolamore, Mr. G. Hern, and Mr. J. G. Turner. Assistant Dental Surgeons: Mr. N. G. Bennett, Mr. D. P. Gabell, Mr. A. Hopewell Smith, Mr. H. Austen, and Mr. R. McKay. Anæsthetists: Dr. Dudley Buxton, Dr. R. J. Probyn-Williams, and Mr. H. Hilliard. Demonstrators: Mr. A. L. Whitehouse, Mr. L C. Ball, Mr. J. G. Atkinson Fairbank, Mr. F. Butler, and Mr. G. H. Curtis. Lecturers:—Dental Anatomy and Physiology (Human and Comparative): Mr. A. Hopewell Smith. Dental Surgery and Pathology: Mr. J. G. Turner. Mechanical Dentistry: Mr. W. J. May. Metallurgy in its application to Dental Purposes: Mr. P. Ellis Richards. Dental Bacteriology: Mr. Howard Mummery. Dental Materia Medica: Mr. H. A. Austen. During the sessions the surgeons of the day will give demonstrations at stated hours. The house surgeons attend daily while the hospital is open. Fee for two years' hospital practice required by the curriculum, including lectures, £53 3*s.* in one payment, or £55 13*s.* in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £60. Both hospitals can be attended simultaneously. The fee for the instruction in Mechanical Dentistry and the two years' hospital practice required by the curriculum is £150 if paid in one instalment, or 150 guineas if paid in three equal instalments. The fee for tuition in Mechanical Dentistry is 50 guineas per annum; for one year's hospital practice £21. The Dean attends at the hospital every Wednesday morning from 9 to 10.30, or he can be seen at other times by appointment. Letters to be addressed—The Dean, 32, Leicester-square, "to be forwarded."

*National Dental Hospital and College.*—Corner of Great Portland and Devonshire-streets, W.—Consulting Physician: Sir Victor Horsley. Consulting Dental Surgeon: Mr. Sidney Spokes. Visiting Physician: Dr. James Maughan. Visiting Surgeon: Mr. E. W. Roughton. Dental Surgeons: Mr. F. H. Weiss, Mr. K. W. Goadby, Mr. W. Weiss, Mr. Rushton, Mr. S. F. Rose, and Mr. A. E. Relph. Assistant Dental Surgeons: Mr. H. R. Pring, Mr. H. Creemer Cooper, Mr. H. W. Turner, and Dr. J. W. Pare. Anæsthetists: Mr. H. P. Noble, Mr. C. J. Ogle, Mr. Vivian B. Orr, Dr. J. Maughan, Dr. Cecil Hughes, and Mr. R. E. Delbruck. Lecturers (winter), Dental Anatomy and Physiology: Dr. J. W. Pare, Tuesdays and Thursdays, 5 P.M., in October, November, and December. Dental Metallurgy: Mr. Hugh Candy, Tuesdays, 5 P.M., in January, February, and March. Dental Mechanics: Mr. H. Rose, Wednesdays, 5.30 P.M., in May, June, and July. Dental Materia Medica: Mr. Charles W. Glassington, Tuesdays, 6 P.M., October, November, and December. Summer—Dental Surgery and Pathology, Mr. H. J. Relph, Thursdays, 5 P.M., during January, February, and March. Bacteriology of the Mouth: Mr. K. W. Goadby, Tuesdays, 4 P.M., during May, June, and July. Practical courses to comply with the R.C.S. curriculum are also held. The hospital is lighted throughout by electricity and warmed and ventilated by approved methods. Clinical Lectures and Demonstrations are given from time to time, and each student on entering passes through a preliminary course under a demonstrator. The stopping rooms have accommodation for 50 chairs. Dresserships in the extraction and stopping rooms are re-arranged every three months. Two Entrance Exhibitions, of the value of £40 and £20, are open for competition. Prizes are open for competition at the end of each course of lectures. Certificates of honour are also open in each class. The Rymer Medal for General Proficiency, value £5, is awarded annually to the mostr meritorious student; and the Ash Prize, value £3 3*s.*, foe a Thesis on a subject in Dental Surgery. Total fee for th. Special Lectures and Hospital Practice required, 40 guineasl A composition fee covering the two years' mechanica pupilage and the two years' hospital practice required by the Royal College of Surgeons, £120. Single Courses: Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Mechanics, Dental Metallurgy, Bacteriology of the Mouth, Dental Materia Medica, Demonstration of Dental Mechanics, £5 5*s.* each. Hospital Practice to registered practitioners by special permission of Committee, 12 months, £15 15*s.* The Committee also consider applications from medical men who may desire to attend the Anæsthetic Room for a course of instruction in Nitrous Oxide administration. Information respecting the Hospital Practice and the College may be obtained from the Dean, Mr. Sidney Spokes, who attends at the Hospital, Great Portland-street, on Tuesday mornings.

*Guy's Hospital.*—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. *The Extraction Rooms:* Patients are admitted between 8.45 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such cases as are suitable for conservative treatment are transferred to the conservation room, taking with them a dental chart to indicate the treatment required. *The Conservation Room:* This room is open from 9 A.M. till 5 P.M. There are 55 Morrison chairs, each fitted with a saliva ejector, for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon in the week to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. Dental students have the opportunity of attending concurrently at this hospital the two courses of instruction required by the examining board for the L.D.S. Eng., viz., the special lectures and practice of the Dental Department and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. Two Entrance Scholarships in Dental Mechanics of the value of £20 each are offered for competition annually, one in September and one in April, and prizes of the aggregate value of £35 are awarded for general proficiency and skill in Practical Dentistry. Dental students are eligible for admission to the Residential College and enjoy the other social privileges of students in the Medical School.

*Staff.* — Dental Surgeons: Mr. W. A. Maggs, Mr. Wynne Rouw, Mr. H. L Pillin, and Mr. M. F. Hopson. Assistant Dental Surgeons: Mr. J. B. Parfitt and Mr. J. L. Payne. Demonstrators of Practical Dentistry: Mr. E. B. Dowsett, Mr. J. Pearce, Mr. J. E. Spiller, Mr. H. P. Aubrey, and Mr. H. Chapman. Anæsthetists: Dr. H. F. Lancaster, Mr. C. J. Ogle, Mr. P. Turner, Mr. A. R. Thompson, Mr. W. M. Mollison, and Mr. R. Davies-Colley. Lecturers.—Dental Surgery and Pathology: Mr. Wynne Rouw. Dental Anatomy and Physiology: Mr. Maggs. Operative Dental Surgery: Mr. Parfitt. Dental Mechanics: Mr. Payne. Practical Dental Mechanics: Mr. Pillin. Dental Materia Medica: Dr. A. P. Beddard. Dental Bacteriology: Dr. Eyre. Dental Microscopy: Mr. Ryffel and Mr. Laidlaw. Metallurgy: Dr. J. Wade. Practical Dental Metallurgy: Mr. Hopson. Curator of Dental Museum: Mr. Dowsett. Dean: Dr. Eason.

*London Hospital.*—Mr. Dolamore and Mr. Farmer give practical instruction during the winter and summer sessions on Tuesdays and Thursdays at 11 A.M. In selecting from candidates for the office of Dental Assistant priority will be given to those who have attended the greatest number of lectures on Dental Pathology and Surgery, and have also been the most punctual in attendance in the dental department. A class for special instruction in filling teeth will be formed each term. Dental patients in 1906, 9298.

## PROVINCIAL.

*University College, Bristol.*—Laboratories for instruction in Mechanical Dentistry and in Dental Metallurgy have been established in the College and dental students can enter for the full curriculum at Bristol. The Lectures are delivered at the College. Practical instruction is given at the *Royal Infirmary* by Mr. Ackland and at the *General Hospital* by Mr. Genge, both institutions being recognised by the Dental Board of the Royal College of Surgeons of England. Full information may be obtained of the Dean of the Medical

Faculty, Professor Edward Fawcett, University College, Bristol.

*Devon and Exeter Dental Hospital, 24, Southernhay, West, Exeter.*—Established 1880.—The hospital is open daily (Sundays excepted) and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M Ackland; hon. secretary, Mr. Henry Yeo.

## SCOTLAND.

*The Incorporated Edinburgh Dental Hospital and School.*—The Edinburgh Dental Hospital and School is located in a spacious and well-equipped building at 31, Chambers-street and offers special advantages to dental students. The General Courses required for the Dental Diploma may be taken in the Medical School of the Royal Colleges of Physicians and Surgeons or in the University schools. The hospital attendance and clinical instruction are taken at the Royal Infirmary. The University, Medical Schools, and Royal Infirmary are within three minutes' walk of the Dental Hospital. The special courses are taken in the hospital. The Dental Hospital practice, extending over two years, affords a student ample opportunity for a full acquaintance with every branch of dentistry. The hospital admits a limited number of indentured pupils. They receive their instruction in Mechanical Dentistry concurrently with the general and special courses. A premium of 60 guineas is payable with each such pupil. The practice and lectures of the hospital are recognised by, and qualify for, all the Licensing Boards. For the special classes, both theoretical and practical, required by dental students the directors have secured the services of an efficient staff of dental officers and lecturers. There will also be a course of demonstrations in Mechanical Dentistry. Students will receive instruction in Practical Dental Mechanics under the mechanician. The cost of the hospital outfit of instruments is included in the Dental Hospital fee of £31 10*s*. The minimum cost of classes and Diploma for the whole course of dental instruction amounts to £90 7*s*. Those students who desire to take a Medical and Surgical Diploma in addition to the L.D.S. have in this school admirable facilities for so doing. The triple qualification of the Royal College of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow is recommended. The minimum cost of the Professional Education Triple Qualification and Licence in Dental Surgery amounts to £169 7*s*. The mechanical department is large and airy and furnished with all modern tools and appliances. The winter session commences Oct. 1st. The Museum is open to students for study. Further particulars can be obtained from the Dean, Mr. W. Guy.

*Incorporated Glasgow Dental Hospital and School, 15, Dalhousie-street, Garnethill, Glasgow.*—The winter session will begin in October and the lectures will be delivered as follows. In Dental Mechanics on Monday and Wednesday at 7 P.M., by Mr. Hugh McKay, and in Dental Metallurgy on Tuesday and Thursday at 7, by Mr. W. Bruce Hepburn, L.D.S. Fee for each of the above courses of lectures, £3 3*s*. The lectures and instruction at the Glasgow Dental Hospital and School are recognised by all the licensing bodies in the United Kingdom. The fees for two years' hospital practice are £15 15*s*. Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. The hospital is opened daily from 5 to 7 P.M. (Saturdays excepted). Students may only enrol during the months of April or October. Summer session begins in April.

*Glasgow Royal Infirmary* (Dental Department).—Mr. Wm. Taylor attends at the Royal Infirmary at 3 P.M. on Mondays, Wednesdays, and Saturdays, and gives a course of instruction in Dental Surgery on these days in summer. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry with Metallurgy, three months; Surgery, six months; Medicine, six months; Materia Medica, three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital. The winter session opens Thursday, Oct. 17th.

## ANCILLARY SCIENTIFIC INSTITUTIONS.

ROYAL COLLEGE OF SCIENCE, London (with which is incorporated the ROYAL SCHOOL OF MINES).—Mechanics and Mathematics: Professor J. Perry, F.R.S., and Dr. A. R. Willis. Biology: Vacant (Zoology), and Professor J. B. Farmer, M.A., F.R.S. (Botany). Chemistry: Professor W. A. Tilden, F.R.S., and Dr. M. O. Forster, F.R.S. Physics: Professor H. L. Callendar, F.R.S., Dr. W. Watson, F.R.S., and Mr. A. Fowler. Geology: Professor W. W. Watts, F.R.S., and Dr. Cullis. Metallurgy: Professor W. Gowland. Mining: Professor S. H. Cox (temporary). The College reopens on Wednesday, Oct. 2nd, 1907. Communications should be addressed to the Registrar, Royal College of Science, South Kensington, S.W.

ELECTRICAL STANDARDIZING, TESTING, AND TRAINING INSTITUTION, Faraday House, 62–70, Southampton-row, W.C. —Principal, Hugh Erat Harrison, B.Sc. Lond. Instructor in Mathematics: Alexander Russell, M.A. Glasgow and Cambridge. Instructor in Chemistry: Mr. J. Thomas, B.Sc. Lond. Instructor in Mechanical Engineering: Mr. Walter H. Bell, A.M.Inst.C.E. This institution, in addition to its ordinary course of training in electrical engineering, which occupies four years, also arranges for special instruction in all branches of electricity either by private tuition or by a specially arranged course at the College or at the works of the companies with which it is associated. There are Entrance Scholarships of the value of 150 and 100 guineas. Particulars may be obtained on application to the Secretary, Mr. Howard Foulds, Faraday House, Southampton-row, W.C. Session begins Sept. 23rd.

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—Chemistry and Physics: Professor Arthur W. Crossley (Dean of the school). Botany: (Vacant). Pharmaceutics: Professor Greenish. The session commences on Monday, Sept. 30th. Medical students, or pupils intending to enter the medical profession, are admitted to the lectures and laboratory work in any or all the courses. Certificates of instruction in this school are received by the Conjoint Board of the Royal Colleges. Application for admission to the school, or for further information, may be made to the Registrar, 17, Bloomsbury-square, London, W.C.

ROYAL SANITARY INSTITUTE (WITH WHICH IS INCORPORATED THE PARKES MUSEUM), PARKES MUSEUM, MARGARET-STREET, REGENT-STREET, W.—The objects of the Royal Sanitary Institute are to promote the advancement of sanitary science in all or any of its branches and to diffuse knowledge relating thereto. It was founded in 1876 and incorporated in 1888. Sessional meetings are held in London and in various provincial centres from time to time for the reading of papers and for discussions upon subjects connected with sanitary science, and lectures and demonstrations are arranged for sanitary officers in sanitary science as applied to buildings and public works. The lectures and demonstrations are suitable for foremen of works, builders, and those engaged in the allied trades; for army officers and professional men on food and meat inspection; for meat inspectors; and for school teachers. Examinations are held in London, provincial, and colonial centres and certificates of competency in sanitary knowledge are granted. The Parkes Museum, which is maintained by the institute, contains a great variety of the most approved forms of apparatus and appliances relating to health and domestic comfort. Professors and teaching of hygiene are allowed the use of the museum for demonstrations to their students on application to the committee. The museum is open daily from 9.30 A.M. to 5 30 P.M. and on Mondays to 8 P.M. and is free of charge except when lectures or meetings are being held. There are also a large library of sanitary literature which contains, in addition to standard works on sanitary science, a collection of reports of medical officers of health over the whole country, and a reading room supplied with the principal sanitary periodicals, both home and foreign. The institute is under the patronage of the King and the officers are: President, the Duke of Northumberland; chairman of council, H. D. Searles Wood, F.R.I.B.A.; treasurer, Mr. Thomas W. Cutler, F.R.I.B.A.; registrar, Mr. A. Wynter Blyth, M.R.C.S.; and secretary, Mr. E. White Wallis. The lecturers are Dr. J. Priestley, Dr. G.

Newman, Dr. A. Wellesley Harris, Dr. E. J. Steegmann, Dr. E. Petronell Manby, Professor H. R. Kenwood, Dr. P. Boobbyer, Dr. James Kerr, Colonel J. Lane Notter, R.A.M.C., Mr. J. Osborne Smith, Mr. W. C. Tyndale, M.Inst.C.E., Mr. A. Saxon Snell, F.R.I.B.A., Mr. J. E. Worth, M.Inst.C.E., Mr. J. Wright Clarke, Mr. W. Hunting, F.R.C.V.S., Mr. James King, M.R.C.V.S. For members the annual subscription is £2 2*s.* and for associates £1 1*s.*, but members and associates holding certain qualifications only pay half the ordinary rate of subscription.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.—The Royal Institute of Public Health, 37, Russell-square, W.C., was founded in the year 1886 with the object of obtaining the registration of public health diplomas and the further statutory requirement that all medical officers of health should possess such a qualification. In 1905 the Fellows and members of the Institute, now numbering nearly 2000, decided to create a central public health institution in London and have erected bacteriological, parasitological, and chemical laboratories in which researches of a public-health character are undertaken for municipal and other authorities and for private medical practitioners and the necessary training for obtaining public health diplomas is provided, together with a library, lecture room, and common room. The Royal Institute of Public Health is recognised by the University of London as a public educational institution, and its course of instruction for the diploma by the universities and other examining bodies of the United Kingdom. The Institute is under the patronage of His Majesty the King, and the Right Hon. Lord Strathcona and Mount Royal is President. The teaching staff consists of—the Principal, Professor William R. Smith, M.D., F.R.S.E.; lecturer on parasitology, Dr. Louis W. Sambon; demonstrator of chemistry, Mr. C. E. Harris, Ph.D.; demonstrator of bacteriology, Dr. Carl Prausnitz. Occasional lectures are given by eminent sanitarians. The Harben lecturer for 1907 was Paul Ehrlich of the Königliches Institut für Experimentelle Therapie, Frankfort, whose lectures were published in THE LANCET of June 15th, July 6th, and August 10th, and the Harben lecturer for 1908 is Professor G. H. F. Nuttall, M.D., F.R.S., University of Cambridge.

---

# OPENING OF THE LONDON MEDICAL SCHOOLS.

## WINTER SESSION 1907–08.

*St. Bartholomew's Hospital.*—The session will commence on Oct. 1st next. The old students' dinner will be held in the Great Hall in the evening of the same day at 6 30 for 7 P.M., when Mr. Harrison Cripps will preside. The new buildings, comprising the casualty, out-patient, and special departments, will be opened for inspection before and after the dinner.

*Charing Cross.*—The winter session will be opened on Oct. 1st by the annual distribution of prizes and an address to the students in the out-patients' hall at the hospital at 4 P.M. by the Right Hon. the Earl of Kilmorey, K P The dinner of the past and present students will take place on the evening of the same day.

*St. George's Hospital.*—The session will open on Oct. 1st, when Dr. W. Ewart, senior physician to the hospital, will deliver the inaugural address on "*Res Medica, Res Publica*": the Profession of Medicine, its Future Work and Wages, in the large theatre of the Medical School at 4 P.M. The annual dinner will take place in the evening of the same day, at 7 P.M., at the Hotel Metropole, when Sir Herbert M. Ellis, K.C.B., Director-General of the Medical Department of the Royal Navy, will preside.

*Guy's Hospital.*—The session will begin on Oct. 1st. The first meeting of the Guy's Hospital Physical Society will be held on Friday, Oct. 4th, when Dr. G. A. Gibson will read a paper entitled "Past and Present." Sir Samuel Wilks will occupy the chair.

*King's College.*—The opening of the winter session will take place on Oct. 1st, when the introductory address on Some Observations on the Present State of Medical Education in London will be delivered by Dr. W. H. Allchin, consulting physician to the Westminster Hospital. On the evening of the same day the annual old students' dinner will be held, at 7 P.M., at the Hotel Cecil, Strand, Dr. J. B. Bradbury, Downing professor of medicine, Cambridge, presiding. Tickets, one guinea, may be obtained from Sir Hugh R. Beevor, Bart., 17, Wimpole-street, London, W.

*London Hospital.*—The old students' dinner will be held on Tuesday, Oct. 1st, at 7.30 P.M., at the Savoy Hotel, Victoria Embankment, when Mr. Frederic S. Eve will preside. The price of the tickets will be half a guinea each, exclusive of wine (honorary secretaries, Dr. Henry Russell Andrews, 7, Wimpole-street. London, W., Mr. Hunter Tod, 111, Harley-street, London, W.). The afternoon reception by the staff will take place in the library of the medical college from 3 to 5 o'clock.

*Middlesex Hospital.*—The session will begin on Oct. 1st at 3 P.M., when Mr. A. G. R. Foulerton will give an introductory address on the Development of Preventive Medicine in Relation to the Welfare of the State, after which the prizes gained during the previous year will be distributed by Mr. Henry Morris. The annual dinner of the past and present students and their friends will take place at the Trocadéro the same evening at 7 o'clock precisely; Mr. Andrew Clark will preside.

*St. Thomas's Hospital.*—The session will open on Oct. 1st. The old students' dinner will take place at the Victoria Hall, Hotel Cecil, on Oct. 1st, at 7 o'clock for 7.30, when Dr. Theodore Dyke Acland will preside.

*University College Hospital Medical School.*—The session will commence on Oct. 2nd, at 3 P.M., when the Dean's report will be read. The introductory address will be delivered by Sir Richard Douglas Powell, who will afterwards distribute the prizes and unveil the memorials to the late Dr. G. V. Poore, physician to University College Hospital, and the late Mr. Christopher Heath, surgeon to University College Hospital and formerly President of the Royal College of Surgeons of England. The old students' dinner will be held in the library of the school during the evening of the same day at 6.30 for 7 P.M., Sir William R. Gowers presiding. Tickets may be obtained from the dinner secretaries, Mr. Raymond Johnson, 11, Wimpole-street, London, W., and Dr. C. Bolton, 16, Devonshire-street, London, W.

*Westminster Hospital.*—The winter session will begin on Oct. 1st. The annual dinner will take place on Oct. 3rd at the Trocadéro; Mr. Alfred H. Tubby will preside. The secretary of the dinner is Mr. E. Rock Carling, 14, Mandeville-place, London, W.

*London (Royal Free Hospital) School of Medicine for Women.*—The introductory address will be given by Miss Sarah Gray at the Medical School on Oct. 1st, at 4 P.M.

*Seamen's Hospital Society (Dreadnought Hospital and Clinical School).*—The session will begin on Oct. 21st, when the inaugural address will be delivered at the London School of Tropical Medicine by Sir Lauder Brunton, F.R.S., at 3.30 P.M. Sir Lauder Brunton will be the guest of the teachers and students of the School at the dinner which will be held on the same evening.

*Pharmaceutical Society of Great Britain.*—The session will open on Sept. 30th, when Professor R. Meldola will deliver the inaugural address on the Scientific Training of the Pharmacist, at 3 o'clock.

---

THE HEALTH OF GLASGOW.—According to a report recently issued the death-rate in Glasgow for 1906 increased 0·5 per 1000 over the rate for 1905. Whatever this increase be due to it is satisfactory to note that neither respiratory diseases nor the zymotic class of ailments are responsible. During 1906 there were 991 fewer infectious disease cases registered than in 1905, the principal diminution being in measles. Against that, however, several increases have to be recorded, the most important being 205 cases of cerebro-spinal fever, for which, if they did occur, there was no specific name in the previous year. The distribution of the cases of this disease has been extremely puzzling, some of the most congested wards in the city having escaped much more lightly than others. It is satisfactory to note that there were only ten known cases of typhus fever in 1906. This is remarkable when one considers that in the city there are 20,792 houses, from 6 to 8 per cent. of which are constantly overcrowded; in fact, under such conditions as are known to exist at night in some localities, it is well-nigh incredible that the disease should have been so conspicuous by its absence. Throughout the city there were 65 more deaths from phthisis than in the previous year. Cases of small-pox have been almost entirely absent, three being notified during the year as against four in the preceding year.

# Annotations.

"Ne quid nimis."

## THE PRACTICE OF MEDICINE IN EGYPT.

Any person in possession of a diploma from a recognised school of medicine is allowed to practise his profession in Egypt after having presented his diploma at the Public Health Department for verification and paid a small fee of six piastres. From a recent report of the department it appears that the influx of medical men into Egypt of late years has been very great, so that it is difficult to understand how some are able to gain a livelihood from their profession. The effective control of diplomas which emanate from so many different foreign schools must be at times somewhat difficult, as the Public Health Department has no means of identifying the person who presents the diploma as the person who underwent the examinations which entitled him to it—e.g., there is nothing to prevent a person who has come into possession of a diploma by fraudulent means personifying the legitimate owner of the diploma and obtaining a licence to practise. It is true that in addition to the diploma a certificate of good conduct is necessary from the applicant's Consul before a licence to practise is granted, but in many cases the Consul finds himself in the same difficulty as the department with regard to ascertaining if the person in possession of the diploma is the rightful owner or not. We recommend any one of our readers who is attracted by the idea of medical practice in Egypt to obtain introductions to a resident in Eygpt so that he may ascertain the chances of finding a remunerative opening and be provided with a witness to his identity.

## SURGICAL TEACHING AT BUDAPEST.

Our Special Correspondent in Budapest recently stated in one of his communications that Budapest is being resorted to by foreigners for the study of surgery more and more every year. In these circumstances it is well to repeat a word of warning which he gives to intending students. If those who go to study surgery at Budapest would first take the trouble to find out the conditions which obtain at that centre much vexation could be avoided. When it is remembered that surgeons like Professor Dollinger, Professor Réczey, Professor Herozel, and Professor Navratil have as many as 10 or 12 assistants each, and that all these gentlemen stand round the operating table as a right, and because it is their business so to do, it will be easily understood that other spectators in the theatre may reap but little benefit from their view of what is going on. The reason for this great number of assistants is that in Budapest it is not considered unethical to state the fact of association with one of the great clinicians in a somewhat prominent way on the professional card and door-plate. As a matter of fact, the most advantageous way of studying surgery at Budapest is to take out, under one of the chief surgical assistants, a course of operations on the cadaver. This work is carried out with the personal assistance of the teacher, and in this manner a competent knowledge can be obtained. With regard to gynæcological operations, the best way to secure any return for the trouble and expense of studying at Budapest is to pay for a course of instruction under one of the chief assistants of the gynæcological surgeons, and this secures a welcome in the operating theatre. The amount of material in the hospitals of Budapest attracts a large number of students; but it is well for foreigners to remember that much time can be saved by careful selection of the methods of study.

The Notification of Births Bill passed its third reading in the House of Commons on Friday, August 23rd. The Bill, which deals with a subject of great importance, was debated at length.

Surgeon-General Sir Alfred Keogh, K.C.B., Director-General, Army Medical Service, has been appointed an honorary physician to the King, vice Surgeon-General A. F. Preston.

# THE DEVELOPMENTS OF PATHOLOGY IN RELATION TO THE PRACTICE OF MEDICINE.

While pathology as one of the branches of biological knowledge ancillary to medicine is of comparatively recent development the progress it has made and is still making renders it a study of the utmost practical value. In our Student's Number of last year we pointed out the important assistance afforded to the practitioner of medicine in his daily routine by the institution of laboratories for clinical and pathological research, and insisted on the importance of special scientific training for those in charge of them. It is an interesting and instructive exercise to endeavour to review in this connexion the influence of pathology on the science and art of medicine. At first pathology seems to have been largely speculative, and to have afforded modifications of the fantastic conceptions of the mediæval schools of medicine in the light of dawning physiological knowledge, and as it evolved to have substituted working hypotheses upon the increasing array of facts observed. In this stage pathology was, as it was once epigrammatically defined, "physiology in difficulties." The increasing attention paid to morbid anatomy during the nineteenth century, notably in its latter half and especially under the stimulus of Virchow's illuminating researches and his epoch-marking treatise on "Cellular Pathology," established the study of disease upon a truly objective basis, and the dead-house was for the time the home of pathology. By this means a vast amount of knowledge accrued—a knowledge of the topography of disease processes, of their effects, and of their terminations. Valuable as it was, and essential as it still is, to the education of the scientific practitioner of medicine, this information, while it rendered services to diagnosis which it is hard to over-estimate, yielded little, if any, advance in treatment; indeed in many philosophical minds it engendered a scepticism and a hopelessness as to the value of treatment which were a hindrance to progress in this respect. Moreover, it is now clear that the study of morbid anatomy, although it supplies information as to the results and the terminations of disease, yields little or none as to the processes underlying or causing the diseased condition of the organism.

The application of the microscope to the study of pathology opened the door to a much more true conception of morbid processes and helped to render pathology a vigorous and practical science. At first it served to vivify the dry bones and dead tissues of morbid anatomy and to bring the pathologist in closer touch with the actual processes of disease. A further advance was marked by the application of organic chemistry to the study of pathology, whereby the department of chemical pathology was founded, a branch of the science which has yielded great results although even yet in its infancy. At the same time the increasing application of the experimental method in physiology and its application to pathology served at last to bring the actual mechanism of disease within the scope of the investigator, and pathology found its present level. Thus far, however, it had practically been only of theoretical and academic interest and, apart from the examination of urine and other excreta and the microscopical examination of tumours, it played but little practical part in the routine of practice. With the increasing use of the microscope and its application to the study of the blood, elaborated by the researches of Ehrlich, Weigert, Kanthack, Hardy, and others, matters became altered and pathology became now of general diagnostic usefulness, at first in regard to the so-called blood diseases, and later as a valuable adjunct in the recognition of many infections; so that at the present time the scientific examination of the blood is a valuable aid to diagnosis and a scientific means of estimating the results of treatment. More recently the attention thus drawn to the cytology of the blood has been the means of starting the cytological investigation of other fluids which bids fair to afford a means of early diagnosis of some morbid conditions and a valuable means of confirmation in doubtful cases; in illustration of which we may refer to the value of a cytological examination of the cerebro spinal fluid in obscure cases of general paralysis of the insane.

But important as the advances yielded by hæmatological and cytological methods have been, it is especially the application of that special department of pathology dealing with bacteria and infective organisms in general—viz., general bacteriology—that has within recent years so profoundly altered the status of pathology, for it has yielded not only means of diagnosis almost mathematical in their accuracy in many instances, but also means of treatment so effective and so remarkable as to seem almost miraculous. The exigencies of space forbid us to do more than briefly refer to some of the most notable applications of bacteriology to the problems of disease as they come within the scope of the practitioner of medicine. One of the most striking instances, however, is afforded by the study of the protective mechanisms of the animal body against infective processes and the production of the various bacteriotropic substances, such as the agglutinins, opsonins, bacteriolysins, and bactericidal substances, and in other instances by the formation of antitoxins to counteract the toxins elaborated by the bacteria in their growth. While some of these might at first sight appear to be rather of technical than practical interest, more careful consideration shows that none of them can be ignored in the rational treatment of infective processes. The value of agglutinins as utilised in the Widal method is too widely known to require comment; the application of the opsonic index to the graduation of dosage in treatment by bacterial vaccines, as used by Sir A. E. Wright, is also a matter attracting great attention at the present time; while in the study of immunity and the application of treatment by serums to disease an examination of the character of the serum, as to whether it is bactericidal or antitoxic, demands a knowledge of the mode of action of all the bactericidal substances and antitoxins if it is to be applied rationally. Indeed, the whole subject of the production of antibodies, of hæmolysins, of precipitins is one the practical importance of which it is hard to overestimate. A closely cognate branch of pathological inquiry deals with the effects of animal parasites in the body. Of the brilliant results achieved in this department, both as regards diagnosis and treatment, the English school of pathologists may be justly proud, while the activity at present occurring in regard to the pathology and treatment of trypanosomiasis, sleeping sickness, and other diseases of tropical climates bears witness to the recognition by the public of the importance of this subject. Nor must we forget to mention the application of chemical pathology to diagnosis; while some of the simple processes connected therewith, such, for example, as the investigation of urine, require but little apparatus, and therefore come within the possibilities of the clinical ward or the consulting room, the majority demand complex apparatus and involve methods only practicable within a laboratory. That chemical methods, including quantitative investigation and micro-chemical processes, are destined to play an important part in exact diagnosis in the future few will doubt who consider the so-called nutritional and metabolic diseases, or who realise the important functions of the blood plasma in health and disease, with its internal secretions, its hormones, its waste products, and its nutritive materials.

The fact which stands out from all these considerations is that the application of pathology to medicine, both as regards diagnosis, treatment, and research, requires special men with special training and special laboratories. Bacteriology is a science, and like all sciences demands exact and accurate methods in all its details and all its applications; anything short of these would be worse than useless, indeed, positively dangerous, for in dealing with such materials as vaccines, the dosage is a matter of extreme importance and error or inaccuracy may be attended with serious consequences. Here there is scope for men with special training and with special experience, as we have before suggested, and the progress made in the last few months has served only to confirm the view. A much more difficult question, and one that must eventually come before the authorities responsible for the control of medical education, is the extent to which the student and the practitioner shall be educated in these matters, since the curriculum must sooner or later reach breaking strain. That a knowledge of the general principles of diagnosis and treatment by these methods is necessary is obvious; that the practical study and application of them is not possible for every student is equally obvious, not only from the point of view of the complexity of the methods, but because of the prolonged practice which is necessary for their acquisition and successful application. Moreover, it must not be forgotten that the successful diagnosis and treatment of disease demand a study of the patient at the bedside, as well as the investigation in the laboratory of material emanating from him; and that while work in the laboratory may be of the greatest value it can never replace the study of the actual patient, for when all is said it is the patient who has to be treated, and the choice of the treatment to be adopted cannot be made in the laboratory, but only at the bedside after most careful consideration of all the factors relating to the patient's condition. Thus it would appear that while the laboratory worker may assist in the making of the diagnosis and provide the means of treatment, suggesting and controlling its dosage and the method of its administration, the actual responsibilities of treatment must remain in the hands of the clinician. On the other hand, it should be remembered that in view of the nature of these forms of treatment they should be used scientifically and with due deliberation and not in the haphazard way in which some delight to try the newest synthetic products of the chemical laboratory under the easy delusion that they thus become scientific therapists. No doubt with increasing advances these matters will adjust themselves, but our main thesis at the present moment is that the laboratory worker has established his position in the practice of medicine and that his status is likely to advance in the future.

## THE BRITISH MEDICAL MAN ABROAD.

THE conditions of medical practice have much altered in this country of late. Professional incomes in many places have been lowered seriously by the unfair tactics of so-called medical aid societies, and the position of servant to which some of these associations would reduce their medical officer is one that liberally educated gentlemen do not welcome with enthusiasm. We have pointed this out with much detail in many issues of THE LANCET, and we have reason to think that improvement is at hand, but there is yet a time of severe struggle ahead. Again the expenses of living have gone up for medical men as they have for all the middle and upper middle classes of this country, while more money is required to secure the necessary medical degrees and diplomas owing to the lengthy curriculum and the more expensive equipment. These facts account, though only partially, for the increased number of medical men who having obtained British medical qualifications desire to settle abroad. Other factors at work are the spirit of adventure, the feeling that in a new country there is more elbow-room and more chances of getting out of the ruck, and the increased facilities of transport. Newspapers and books galore nowadays make us familiar with life in other lands, while trains and steamers will take us all over the world in a short time and at a comparatively small expense. For this reason or that, the number of medical men who make inquiry from us as to their legal and professional position in a foreign country grows yearly larger, and in the following columns we attempt to give the information.

Speaking generally, our colonies make it easy for medical men from home to practise there, but the same is not the case on the continent, where there is an obvious tendency towards protection. But in the colonies there are not many openings for practice except for those who are willing to "rough" it and work hard. In Canada there are outlying districts where a good start might, perhaps, be obtained; but it must be remembered that Canada possesses advanced medical schools and is a sparsely populated country as yet. In Australia and New Zealand the prospect for the British practitioner is not greater than that which faces him in Great Britain. The medical profession is, in fact, crowded in all places at home and abroad where the circumstances of practice are favourable, and many practitioners who have gone out from the mother country have had to leave the colonies unsuccessful, or have been very hard pushed to make both ends meet. The graduates of the colonial universities every year tend to more than meet the usual vacancies. It used to be generally believed that, even where there was a large supply of general practitioners in the big colonial towns, there would still be good openings for men who have specialised in such branches of practice as the treatment of eye and ear diseases. This is partially true. There are openings of which good men can take advantage. But as a rule the openings in the colonies for new comers are in country districts where the medical man, besides being proficient in every branch of the profession, must be ready to lead a hard life. It is desirable that every colonial practitioner, intending to start in a country district, should be of good physique and not only able to ride but able to take care of his horses.

There are, of course, certain colonial appointments made in this country particulars of which will be found in our columns. These appointments are sometimes made with permission to practise privately, and sometimes this is not permitted. Candidates for the posts should apply to the Colonial Office for information, and their chances of success will be much increased by having passed through one of the schools of tropical medicine. The duties of colonial medical officers involve medical charge of a district, including as a rule the charge of a hospital and a lunatic asylum. The medical officers also supervise the sanitation of their districts, and as a rule give gratuitous attendance to all Government officials.

The United States of America form a rich and well-populated country to which, as speaking our language, it is natural for the British medical man to desire to go. The regulations for practice in the various States differ much, but it will be found that wherever the social conditions are pleasant and the opportunities for emoluments good there will be plenty of competition. There is an enormous number of medical men in the United States, the proportion of population to medical men in some of the thickly populated centres being not more than 500 to 1. The British medical man contemplating starting in medical practice in the United States will be prudent to make full inquiry before deciding on the locality, and his chance of success will be increased by his having some good introductions.

### FRANCE.

The law that regulates the conditions of the practice of medicine in France is that of Nov. 30th, 1892, passed by the Senate and the Chamber of Deputies and signed by Carnot, President, and Poincaré, the Minister of Public Instruction, at that date:—

> No one may practise medicine in France unless he hold a diploma of the doctorate of medicine given by the French Government after examinations duly passed in a State institution of higher medical education.

The fifth article of this law specifically refers to foreigners:—

> Physicians who have taken their degree abroad, of whatever nationality, can only practise in France on condition of having obtained in France the degree of doctor of medicine.

This article was modified by a special decree, signed in July, 1893, referring to certain concessions to be made to such foreigners:—

> Physicians with a foreign degree who desire the French degree of doctor of medicine may obtain partial or complete dispensation of medical study and partial exemption from the examinations required. In no case will candidates be exempted from more than three examinations. Such exemption is accorded by the Minister of Public Instruction on the recommendation of the competent Faculty and the Committee of Public Education.

While this last quotation may be considered the actual state of the law in the formal sense of the word, further and much less liberal projects have since been considered by the legislative bodies and adopted in the form of *arrêt ministériel*, of *circulaire* issued by the Minister of Public Instruction, or of *décret* adopted by Parliament. Presumably too much advantage was taken of the generosity of the concessions of July, 1893, although it must be remembered that the exclusive policy since adopted is by no means aimed at English physicians, but rather against graduates of little-known universities the value of whose qualifications it is difficult to estimate. Be that as it may, in July, 1896, a certain number of exemptions were granted—among whom the writer was fortunate to find himself—and a circular was issued repealing —in substance—the concessions of 1893. No foreign qualifications were to be recognised as deserving of any dispensations and physicians holding foreign degrees and desirous of practising medicine in France were obliged not only to matriculate as medical students but also to produce evidence of having obtained the French diploma of Bachelor in Classical Education (Arts and Philosophy) and the certificate in physical, chemical, and natural science.

The refusal that for the last ten years has almost invariably met the request made by foreign physicians for the right to practise in France is based upon this *arrêt ministériel*. Such requests are answered in the formula—"Depuis 1896, époque à laquelle il y a en une décision du Parlement, il n'est accordé aucune dispense aux étrangers désireux d'obtenir le diplôme d'etat: ils doivent tous produire le baccalauréat." The simplicity and clearness of this statement make translation unnecessary. This exclusive attitude was not, however, wholly maintained. While withdrawing nothing of the exclusiveness of 1896, the Minister could grant leave to foreigners to possess themselves of a formal academic medical degree which, while it entitled the possessor to call himself docteur en médecine de la Faculté de Paris (de Montpelier, Nancy, Bordeaux, Lille, Lyon, or Toulouse), gave him no right whatever to practise on French territory. To obtain this degree the postulant must formulate his request to the Minister on *papier timbré*, inclosing a copy of his birth certificate, his diplomas, and class certificates, formally translated. This honorary degree is readily obtained and from English candidates it is probable that an appearance in so-called "final" subjects would alone be required.

Up to Dec. 29th, 1906, it was possible to transform the university or academic diploma into a Government degree by becoming a naturalised French subject. On account of the large number of young Russian girls who married in France and thereby became French and claimed the State diploma it has been decided to insist upon the possession by foreigners of the *licence-ès-sciences* before this transformation can be granted. The fees for this degree amount to between £60 and £70.

### ITALY.

Some years ago the British and American consuls at the great centres of Italian population and commerce combined to form an estimate of the money brought annually into the kingdom and spent within its borders by the English-speaking world. That estimate, an approximate one necessarily, which they carefully checked by every qualifying consideration conceivable, amounted to £20,000,000 sterling, about one-third of Italy's whole revenue at that time. Since then the yearly influx of English and especially of American visitors has greatly increased, so that were a similar calculation to be made now the estimate would doubtless be still larger. This is a fact of great importance from whatever side it is contemplated, and it implies a large and continuous demand for English-speaking practitioners. It is true that of late years an active agitation, having for its object the expulsion of all foreign practitioners from the country, has been carried on by a section of the medical profession in Italy, but the movement has proved only partly successful, the public at large being well aware of the injury which the adoption of such a measure would inflict upon its interests. The British medical men and their American *confrères* form a prominent reason for Italy continually to attract that portion of the travelling public from which she derives so much of her annual revenue. There are therefore excellent reasons why every facility should be offered to them for exercising their calling freely in her cities and health resorts, and we may state at once that the regulations which still exist in Italy with respect to the foreign practitioner are most liberal and fair, it being open to anyone possessing a medical qualification recognised as legal in the country of its origin to engage in practice amongst the foreign visitors and residents within her borders. The restrictions ruling in Switzerland, France, and, indeed, nearly every other European country, do not exist in the Italian kingdom. The medical man's qualification, certified by ability to produce his diploma, is quite sufficient. He has, therefore, (*a*) no examination to pass; (*b*) no fees to pay; (*c*) no Government forms to comply with; and (*d*) requires no previous residence in the country as a "condition precedent" to practise. All the same it will be to his advantage to graduate at an Italian school—Rome, Turin, Pavia, Padua, Bologna, Siena, Pisa, indeed all Italian Universities, grant degrees to duly qualified practitioners who can pass the examination these Universities require. On the other hand, in a country compelled by its financial requirements to impose taxes in every possible direction the English-speaking practitioner has to pay the heavy income-tax ("ricchezza mobile" it is called) of nearly 13½ per cent., besides being liable to the comparatively mild "tassa di famiglia" (tax on domestic servants, &c.), levied on foreign and native residents alike.

As to the career Italy offers it is in some respects better, in other respects worse, than it was some years ago. It is better inasmuch as Italian medicine and surgery have greatly improved of late years and the foreign practitioner, particularly in those cities which are the seat of medical schools, is not in danger, as he used to be, of getting out of touch with the advance of the profession. Indeed, the British medical man may keep himself *au courant* with the latest accession to medical doctrine as conveniently in the Italian as in any other kingdom. By graduating at one or other of the many Italian schools he can obtain the *entrée* to the medical societies, the congresses (provincial and national), the hospitals, the class-rooms open to the native practitioners, and also become entitled to the reduced railway and steamboat fares conceded on occasion to all duly qualified Italians. Indeed, he is generally welcome to them on the ground of professional *fratellanza* (brotherhood), but the graduation above indicated gives him a right to what he would otherwise owe merely to courtesy. On the other hand, the career is less favourable than formerly on account of the larger number of English-speaking competitors whom it now attracts and who comprise not only Englishmen and Americans, but Swiss, Germans, and other nationalities as well. Their harvest (generally limited to three or four months of the "season") entails immense, almost excessive, activity, compensating the comparative idleness of the months before and after it. Upon this short period of remunerative work the practitioner must therefore rely to carry him through the entire year, and with heavy expenses to meet for housekeeping, house rent, servants' wages, taxes, &c., it becomes a serious matter for him when the "season," as often happens, turns out a poor one. He may certainly be able to supplement his winter's income by taking up practice at one or other of the summer resorts, but such practices are difficult to find and with few exceptions are of little value. Failing this he will find nearly the whole summer on his hands, for it is useless to remain at his post during the hot season while his patients have all left to seek the cooler air of the Alps and the Tyrol or have returned to their own country. Nothing is then left for him but to follow their example and thus to incur the heavy expense of moving somewhere else with his whole family. Nevertheless, for a well-qualified man with sufficient private means to tide him over the first years, and who is possessed of good social introductions, there are always openings where he can still find a profitable *clientèle*, although his possible income at any of the smaller health or pleasure resorts will necessarily be limited.

One word of warning in conclusion. Let anyone who is tempted to buy a practice in Italy proceed with even more caution than he would in negotiating in his own country. In the first place, the foreign population of nearly all Italian towns is largely a floating one, composed chiefly of people who remain for but a few weeks, often for only a few days in one resort and many of whom never come back again. The vendor of a practice in a place of this sort will have many patients on his books whom he cannot possibly introduce in any way to his successor, and a good many others whom he may introduce but who will never return to the locality, or at best do so only at long intervals, and can therefore form no permanent or profitable part of his successor's *clientèle*. His hold upon the practice is, in fact, of a peculiarly personal kind and cannot, in the nature of things, be easily transferred to another. Secondly, the purchaser himself must be a man fitted for this particular class of work, or he may discover too late that he cannot make it pay and that the capital which he has expended has been spent to no purpose. A similar remark is doubtless true with regard to all such transactions, but it applies with special force in the circumstances now under consideration, where the physician has to deal with patients of such varying types and diverse characteristics as are to be met with amongst the travelling public in an Italian health or pleasure resort. To achieve a full measure of success the foreign practitioner in Italy must not only be a man of good all-round attainments, conversant with all branches of his profession, but should be possessed of an unusual share of sympathy and tact, for the exercise of which he will have daily scope amongst patients on whom illness falls with peculiar sadness, alone, as they so often are, and helpless in a foreign land.

### GERMANY.

Foreign diplomas are not legally recognised in Germany as entitling their holders to practise medicine, so that British medical men desiring to settle in that country have to attend all the classes and pass all the examinations. A young German before commencing the study of medicine must pass an *Abiturienten-Examen* requiring a knowledge of French, Latin, Greek, mathematics, history, and theology. Or the examination of a *Real-Gymnasium* or an *Oberrealschule* may be passed. In the latter event more stress is laid on modern languages, mathematics, and natural history, and English is required instead of Greek. Foreigners have, as a rule, to pass this examination, but if they have already passed a similar one in their own country they may be exempted from it by a special order to be obtained from the Minister of Public Instruction for each individual case. Medicine can only be studied at a university; the curriculum lasts five years, after the second of which the examination called the *Tentamen Physicum* must be passed; it includes anatomy, physiology, chemistry, physics, and natural history. After the end of the fifth year the student presents himself for the "State Examination," which is practical as well as theoretical, and includes medicine, surgery, obstetrics, gynæcology, pathology, materia medica, and hygiene. After passing the State examination the medical man, previously to obtaining his qualification, has to perform his practical year as clerk and dresser at a university clinic or a recognised hospital. If the medical man wishes to have the title of "doctor" he has to pass another examination, which is little more than a formality, but the degree of doctor without the State examination does not legally confer the right to practise. This title of doctor is granted by every German university to foreigners, but the conditions differ according to the university. Some universities demand a special course of study and others do not, and the intending candidate must in every case make inquiries of the authorities. The law does not allow qualified British practitioners any exceptional facilities in passing the examinations; the time of study may possibly be made a little less than five years for those who have already studied abroad, but a special order, very difficult to obtain, is always required for this purpose. A thorough knowledge of German is essential. The fees for lectures are at least £130 and the examination fees about £12. The fees for the degree of M.D. vary from £10 to £20, being highest at Berlin University, which is the degree that is most popular with alien medical men. There is sometimes no prohibition set against holders of British diplomas practising in Germany, provided they do not make use of any professional titles resembling those of qualified German medical men. Medical men practising in this way must, however, understand that the law regards them as unqualified, and that they have none of the rights or privileges of the medical profession.

### AUSTRIA-HUNGARY.

In order that foreigners may legally practise medicine in Austria it is necessary for them to become naturalised Austrian subjects which necessitates five years' residence in the country. In special cases the Minister of the Interior, conjointly with the Minister of Education, may grant exemptions from that rule and may permit foreign holders of diplomas to practise in Austria if they comply with the other requirements. These are: The production of a so-called Maturitätszeugnis or certificate of having passed the final examination of the gymnasium, at which the candidate must show a satisfactory knowledge of Latin and Greek, as well as of German or one of the other languages spoken in the Austrian Empire, such as Polish, Bohemian, Italian, also of mathematics, history, natural history, chemistry, and physics. If a British medical man or student has passed a similar examination in his own country he may apply for exemption, which is generally granted; he need only produce proof of his having passed such an examination, in the shape of a certificate, to be translated into German by a properly recognised translator. The medical curriculum lasts 11 semesters, or five and a half years. The holders of foreign diplomas may, however, obtain permission to pass their examinations at shorter intervals than are necessary for the students, so that from 18 months to two years may be reckoned as sufficient. After passing the first theoreticum, or first examination, which comprises biology, anatomy, physiology, and chemistry, and which, as a rule, is passed at the end of the fourth semester, the student is allowed to commence hospital work; at the end of the tenth semester he may present himself for the second theoreticum. This and all other examinations (altogether three in number) are both practical and theoretical, and must be completed within eight days. It comprises internal medicine, surgery, and pathology, whilst the third and last examination comprises gynæcology, obstetrics, hygiene, materia medica, and ophthalmology; pediatrics, otology, dermatology, and laryngology are examined in alternately. This last examination the student is expected to pass not later than five years after the first, otherwise he has to present himself again for certain subjects of the first examination, especially anatomy. The fees for the three examinations are £15, and then comes the fee of £6 5*s.* for the degree of M.D., without which degree nobody is allowed to practise. The fees for the lectures are about £35 for the five years, and about £15 for special classes may be added, so that the entire cost of obtaining the degree of M.D. would be from £70 to £75. All the universities confer the degree of M.D., and no distinction is made here as regards the place where the title has been gained, although the University of Vienna is most favoured because it offers the best opportunities for studying. In special cases the Minister of the Interior may allow a foreign qualification to be recognised as entitling its holder to practise, only a mere formal examination being required; such a special order is, however, very difficult to obtain. The examinations are entirely oral and are conducted in various languages according to the locality—namely, German in Vienna, Innsbruck, Graz, and Salzburg; German and Bohemian in Prague, and Polish in Cracow and Lemberg. These seven universities are the only ones in Austria, and only they may grant degrees, as the medical schools are invariably integral parts of the universities. If a British medical man wishes to practise in one of the frontier spas or in Karlsbad he will have little difficulty in obtaining permission to do so if he applies for it, especially if he gives an assurance that he will only attend his fellow-countrymen and only for the season. He need not then obtain official recognition of his diploma.

As regards Hungary, the medical curriculum is for practical purposes similar to that in Austria, and the foreigner, whether a holder of a diploma or a student who wishes to practise legally, must become a naturalised subject and must pass the three above-mentioned examinations in the Hungarian language. Applications for admission must be addressed to the Minister of Education, who decides upon the conditions of admission after consultation with the medical faculty of Budapest. Usually the applicant has to pass three medical examinations after having proved his qualification for admission by a Maturitätszeugnis, or testimonial of sufficient preliminary instruction in two classical languages, chemistry, arithmetic, geometry, and physics. The total fees amount to 295 kronen (about £12), and the fee for "promotion"—i.e., for the M.D. degree—is similar to that in Austria. Besides the university in Budapest there is another university in Klausenburg for which the same rules hold good. Only these two universities may confer medical degrees in Hungary.

### DENMARK.

In Denmark only those who have passed the Danish Medical Examination are entitled to practise and in Iceland it is necessary to have been examined at the Medical School in Reykjavik. The medical student before beginning his studies must present a diploma of *examen artium*—an examination very similar to the German *Abiturienten-examen.* At the close of the first year he must pass an *examen philosophicum.* The medical studies proper require from five to six years. The foreign student will find one agreeable difference from what is customary in other countries—namely, that all University lectures and clinical courses are free, payment of class fees being unknown, but a few pounds are required for the examination. On passing the examination the young man becomes entitled to practise, and not a few commence at once. The majority, however, prolong their practical training by accepting an appointment as (salaried) junior house physician or house surgeon in one of the numerous hospitals of the country. The most highly valued appointments—namely, those at the Kommunehospital or Royal Frederic Hospital of Copenhagen—are, however, in so great demand that not rarely four, five, or even more years elapse before an aspirant can secure the coveted position, when he serves for one or two years in the different departments of the hospital.

The only academical degree for medical men known in Denmark is the degree of M.D. It is granted exclusively by the University of Copenhagen, and only to those who have submitted to the faculty an original investigation of undoubted scientific value, the consequence being that only a comparatively small number of Danish practitioners possess the degree in contradistinction to what is customary, for example, in Germany. In fact, the Danish degree of M.D. must be considered as equal to the German title of *privatdozent* or the French title of *professeur agrégé*, as it authorises its possessor to teach publicly in the university.

The only portions of Danish territory where a foreign medical man is permitted to make use of his diploma are the Danish islands in the West Indies, the Governor being empowered to grant such permissions; but he is not likely to do so except during epidemics or when other abnormal conditions obtain.

### NETHERLANDS.

A medical practitioner holding British qualifications cannot practise in the Netherlands without being also qualified in the Netherlands. For this purpose it is necessary to pass the medical examinations of one of the universities.

### SWITZERLAND.

Foreign practitioners must pass the first, third, and fourth State Examinations. These examinations are held in either French (at Lausanne and Geneva) or German (at Bern, Basel, and Zürich). In addition to the British five years' curriculum practitioners would require one or two years' additional study. The examination fees amount to about £9.

### SPAIN.

To practise in Spain or her colonies it is necessary for the holder of British qualifications to send his diplomas to the University of Madrid. After inquiries as to identity a diploma will be sent to the applicant who can then legally practise on the same conditions as a Spaniard—namely, the payment of certain duties.

### PORTUGAL.

Holders of foreign diplomas must apply for examination at the schools of Lisbon or Oporto or the Faculty of Coimbra. The cost of the examination, including the diploma, is about £50. For the last examination the presentation of a *printed* dissertation is required.

### TURKEY.

Every foreign medical practitioner desirous of settling in Turkey for the purpose of practising his profession must undergo the ordeal of the so-called "colloquium." This is a sort of professional examination very easy in itself but a source of annoyance and vexation to Europeans by the dilatory propensities of orientals and their habit of conducting business in an indolent and easy-going way. The "colloquium" itself takes about half an hour's time, whereas the preliminary steps and arrangements and the subsequent formalities necessary for the final obtainment of the medical permit lasts for weeks and even months. The "colloquium" must at the present time be passed either in French or Turkish without any interpreter, the choice of the language being left to the examinee. The possessor of a foreign diploma is tested, as a rule, in four subjects and the testing consists in three or four questions in each subject, which the candidate has to answer orally. It has not yet happened that a European physician failed to pass the "colloquium." The fee for it is about £8 and there are in addition some registration expenses.

### RUSSIA.

The law relating to foreign medical practitioners desirous to practise in Russia is contained in the two following paragraphs of the *Vratchebny Ustav* or medical statute:—Section 93 (*a*): No one, whether a Russian subject or a foreigner, who has not a diploma or certificate from a university or from an Army Medical Academy, has the right to follow any branch of medical or veterinary practice in Russia; (*b*) foreign medical practitioners who wish to practise medicine in Russia must, without exception, know the Russian language. Section 94: Of foreign practitioners who shall be invited or who may come to Russia the right to decide which of them shall be permitted to free practice here and under what conditions is in the hands of the Medical Council of the Ministry of the Interior; some shall be permitted only after the usual examinations and consequent granting to them of a learned degree; others more distinguished after an oral examination in the Medical Council; lastly, others who have made a name in the scientific world by their writings or unusually successful practice, or who have occupied professorial chairs or other important medical appointments in other countries, may be permitted to practise without any examination, solely on the decision of the Medical Council, confirmed by the Minister of the Interior, as to the worthiness of such practitioners.[1] Previous residence in the country before practice would not be necessary except in the case of the first group mentioned, who would have to pass through the usual five years' course of a Russian medical curriculum. As to the prospects of a British practitioner in Russia the country and the smaller towns can present no attraction to an English medical man, even if the fees obtainable would support him, which they would not. In the two capitals, Moscow and St. Petersburg, the field is wider. Competition is, however, great, fees are as a rule small, and bad debts many. The frequency of bad debts results from the unwritten law by which medical men do not send in accounts, but leave the patient to pay what he considers a suitable amount.

### EGYPT.

Duly qualified British practitioners have no examinations to pass and no fees to pay except a nominal sum for registration. They must, however, exhibit their various diplomas to the Director-General of the Sanitary Department in Cairo and obtain a certificate of good character from the British Consul. A knowledge of French or Italian and Arabic would be essential to any newcomer desirous of practising all the year round, for the tourist season only lasts from November to April. Egypt has been a popular place of late with English medical men and there are few or no vacancies for additional English practitioners in Cairo, while the field is already well occupied at Alexandria and the other obvious resorts.

### JAPAN.

According to the regulations for medical licence "persons holding either diplomas of foreign universities, or medical schools, or foreign licences for practising medicine may be granted licences for practising medicine in Japan, without being subject to the usual medical examination, upon producing such diplomas or licences obtained in foreign countries to the satisfaction of the home authorities." English medical practitioners will therefore have no difficulty in obtaining a licence in Japan. The fee required for a licence is three yen (about 6*s.*) and with this exception there are no charges in respect of the medical licence. A local rate, which would be a small fee only, may have to be paid on opening a practice. A correspondent informs us that English practitioners in the foreign quarters of Japan are at some disadvantage for the reasons that the druggists, who are now nearly all Japanese, sell their drugs at a cheaper rate to native practitioners; and, moreover, living is cheaper for the native than for the foreigner. Foreign practitioners depend largely upon shipping and contract business work.

### UNITED STATES OF AMERICA.

The laws regulating the practice of medicine in the various States and territories of the United States of America differ to a considerable extent in detail. In spirit, however, they are beginning to assume that uniformity which all medical reformers must desire for them. It has long been pointed out that one of the most open doors to abuse of medical practice in the United States was the fact that while in some States an excellent medical curriculum was required before admission to legal practice, in other States but little scientific training was exacted and freedom to practise was extended to dangerous forms of quackery. This position of affairs had its origin, of course, in the evolution of the United States, certain divisions of the country being in the forefront of civilisation while others were, to say the least, in a rudimentary plight; but of late a great process of levelling-up has been witnessed. The progress of the United States is in no way better shown than in the fact that throughout its vast length and breadth there is now an attempt to secure for the people of the country adequate medical treatment based on scientific grounds. A *résumé* of the legal regulations for medical practice in the States and territories of the United States of America has been published at the office of the *Journal of the American Medical Association*, Dearborn-avenue, Chicago, Illinois. In this digest of the medical laws of the various States, which has been brought quite recently up to date, existing legislation is explained on broad grounds so far as it pertains to medical practice. If the information with regard to some particular State is anywhere scanty in detail it is always possible for the intending practitioner to communicate with the secretary or executive officer of the medical board at the capital of the State.

We must continue to warn the British medical man desiring to practise his profession in the United States of America that in all the more enviable centres he will find a vast number, almost a plethora, of medical men, the great proportion of whom have been thoroughly well educated and trained. He must remember also that in the more important States, generally speaking, although the remuneration may rule high, the expense of living is proportionate. He will understand that the less highly the State is developed the more easy will it be for him to obtain a footing, but the less pleasant in all probability will be his professional career.

### CANADA.

The Canada Medical Act, 1902, authorises the creation of "The Medical Council of Canada" with power to establish a qualification in medicine entitling holders thereof to practise in all the provinces of Canada, but no regulations have as yet been issued. As a general rule, the possession of British diplomas and degrees entitles the holders to practise in Canada after having obtained a licence from the provincial medical boards and paid certain fees.

*Ontario.*—Registration by the Council of the College of Physicians and Surgeons of Ontario is necessary and it is optional for the Council to admit to registration all persons who are duly authorised to practise medicine, surgery, and midwifery in the United Kingdom and Ireland upon terms which the Council may deem expedient.

*Quebec.*—Practitioners must be licensed and registered by the Provincial Board, which may license without examination holders of medical qualifications from British universities or corporations.

*New Brunswick.*—Practitioners in New Brunswick must be registered by the Medical Council of the province. A candidate for registration (1) must pass an examination in English, arithmetic, algebra, geometry, Latin, elementary mechanics, elementary chemistry, history, geography, and two of the following languages, Greek, French, and German, unless he has already matriculated at some college in the United Kingdom, Canada, United States of America, or Europe, or holds a first-class teacher's licence from the Board of Education of New Brunswick; (2) he must afterwards have studied for four years and attended some university or college or school of medicine for four sessions of not less than six months each and have attended lectures on anatomy, pharmacy, &c.; (3) he must have attended the general practice of a hospital for 12 months; (4) he must have obtained a degree in the above subjects from a university, college, or school requiring such four years' course of study or must have passed an examination in them before the examiners in New Brunswick; and (5) he must be over 21 years of age. A fee of $10 is required and medical practitioners are liable to an annual fee of from $1 to $2.

*Nova Scotia.*—Registration and a licence from the Provincial Medical Board are required, which admits to the privileges of practice, upon payment of the registration fee, all persons who are duly registered by the General Medical Council of Great Britain.

*Prince Edward Island.*—No one can practise medicine, surgery, or midwifery in Prince Edward Island unless registered or licensed by the Council of the Medical Society of Prince Edward Island. The Council admits to the register any person who is duly registered by the General Medical Council of Great Britain.

*British Columbia.*—No person may practise medicine, surgery, or midwifery in British Columbia unless registered by the College of Physicians and Surgeons of British Columbia. The Council admits to the register any person "who shall produce from any college or school of medicine and surgery, requiring a four years' course of study, a diploma of qualification," on proof of identification and on passing an examination as to his competency. The fee for registration appears to be rather indefinite, as we learn that it "must not exceed $100" and the annual fee is from $2 50 to $10. Licences to practise are issued to women.

*Manitoba.*—Registration by the Council of the College of Physicians and Surgeons of Manitoba is necessary and applicants for registration must be members of an incorporated medical body in Canada giving similar privileges to persons incorporated in Manitoba. Application should be made to the Council by British medical men desiring to practise in the province. Licences to practise are issued to women upon the same terms as men.

---

[1] This Section dates from 1836; it was amended in 1842, 1845, and 1867.

*Alberta.*—Medical practitioners must be registered by the Council of the "College of Physicians and Surgeons of the Province of Alberta." The Council admits to the register anyone who (1) produces a diploma of qualification from any college or school of medicine and surgery which exacts for such diplomas attendance on at least a four years' course of lectures of at least six months each; (2) gives proof of identification; (3) passes before them a satisfactory examination appertaining to the profession of medicine and his fitness and capacity to practise medicine, surgery, and midwifery; and (4) pays $50, and another $50 for registration.

*Saskatchewan.*—No one may practise in Saskatchewan unless registered (fee $50) by the Council of the "College of Physicians and Surgeons of the Province of Saskatchewan." The Council admits to the register anyone who produces a diploma of qualification from any college or school of medicine and surgery recognised by the Council, which requires attendance at a four years' course of lectures, and who passes an examination (fee $50) before the Council.

### AUSTRALIA.

Legally qualified British medical men can practise in all parts of Australia. Proof of registration by the General Medical Council of Great Britain must be submitted to the medical board of the particular State selected, when a certificate to practise is granted. The medical man with British qualifications who desires to practise in Australia must communicate with the medical board as soon as he intends to settle, so that he may regularise his position from the beginning.

### NEW ZEALAND.

Registration in the colony of New Zealand is obtained by the legally qualified British practitioner on producing his proof of registration by the General Medical Council of Great Britain and on paying a fee of £1 5*s*.

### BRITISH SOUTH AFRICA.

The position of the legally qualified British practitioner in South Africa is much the same whichever colony he proposes to practise in.

*Cape Colony.*—No person may practise in Cape Colony as a medical practitioner without a licence signed by the Colonial Secretary of the province and the recommendation of the Colonial Medical Council is required. The fee for the licence is £5 and women are eligible for the licence. Applications should be made to the Colonial Medical Council at Cape Town.

*Natal.*—Here also application for a licence to practise medicine in the colony must be made to the Colonial Secretary of the province. The application will be granted upon the approval of the Natal Medical Council and the fee for registration in Natal is one guinea.

*Southern Rhodesia.*—The admission fee for the practice of medicine in Rhodesia is £5 and application for the licence should be made to the Administrator of Rhodesia at Salisbury, Rhodesia. It would be well also to write to the Secretary of the British South Africa Company, London Wall, E.C.

*Transvaal and the Orange River Colony.*—The Transvaal Medical Council (Pretoria) and the Medical and Pharmacy Council of the Orange River Colony, Bloemfontein, grant a licence to practise on payment of £10 and £7 10*s*. respectively. Proof of registration by the General Medical Council of Great Britain must be supplied.

### THE COLONIAL MEDICAL SERVICE.

In the following countries there are medical departments regulated from the Colonial Office:—British Guiana, Jamaica, Trinidad, Tobago, Windward and Leeward Islands, British Honduras, Fiji, Ceylon, Straits Settlements, Federated Malay Straits, Hong-Kong, Mauritius, Seychelles, Gibraltar, St. Helena, Falkland Islands, Uganda, Gambia, Sierra Leone, the Gold Coast, Lagos, and Northern and Southern Nigeria. The last six of the countries enumerated have been formed into the West African Medical Staff, a definite and well-organised service. The particulars of the Colonial Medical Service were published in full in THE LANCET, April 29th, 1905, p. 1151, and all information concerning any vacancies in the service can be obtained from the Colonial Office.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, August 29th, 1829.

### FLEXIBLE STETHOSCOPE.

*To the Editor of* THE LANCET.

SIR,—It having been suggested to me, that notice of a modified stethoscope, which has been successfully used in the Royal Infirmary, Edinburgh, would perhaps meet your eye from another pen, if mine were not employed, I beg leave to trouble you with a description of the following instrument. I should not, however, have had the hardihood to obtrude this letter on your notice, had not others, as well as myself, been experimentally satisfied of the truth of the details herein made.

Convinced of the pathological and practical utility of the stethoscope, I have often regretted the great difficulty of attaining accurate knowledge by it, notwithstanding the numerous cases of thoracic disease that have been treated in the Royal Infirmary. This difficulty arises from the great number of medical students in Edinburgh, and who, from their anxiety to attain facility in auscultation, are often denied permission to use the instrument, in consequence of the torture unavoidably inflicted by repeated attempts, and by the frequent changes of posture necessarily required of the afflicted patients. To alleviate the sufferings of the sick, aggravated by the interposition of a timber cylinder between the diseased thorax, and the closely-applied head of the examinator, and, with the exception of the portion in contact with the bed, to enable students to explore any part of the chest of any diseased person, *in any position*, and in any stage of disease, without pressure or inconvenience to the patient or to themselves are the objects which I have had in view, and obtained by means of a stethoscope of the following kind:—It consists of two tubes, each seven inches in length, and 5·8ths of an inch in diameter, except at the part to be applied to the thorax, where the diameter of the aperture is an inch and a half. These pieces are united by a perforated joint, three inches in length, placed at right angles to their extremities, and fitting into the tubes in the same manner as the joints of a flute are united. They thus permit the main limbs of the stethoscope to form any required angle. The upper end of the instrument is provided with an ear-piece, sufficiently large and concave to envelop the ear. The ear-piece, by means of a moveable joint, can be placed in any necessary direction with respect to the extremity of the tube. The moveable joints are, by a simple contrivance, rendered perfectly air-tight. The whole instrument is, in a word, a bent tube.

The following are the advantages it affords:—It conveys at an angle distinct thoracic sounds. It can be applied perpendicularly to any point of the chest, while the angular form precludes the inconvenience of pressure. The auscultator can use it in the sitting posture, with his head seldom deviating from the erect position, and, in some cases, without disturbing the patient while asleep. As it does not require the head of the stethoscopist to be over the chest of the sick person, and as another tube can be screwed to the instrument, so as to lengthen it, it can be used in the highest ranks of society, without offending fastidious delicacy. Every portion of the thorax, except the part in contact with the bed, can be explored, while the patient and the feet of the examiner remain at rest. Should the patient assume the sitting posture, though his bed be accessible at only one part, every portion of his chest can be explored with perfect ease to both parties; with a longer stethoscope, the auscultator can explore every portion of his own thorax. The instrument can be lengthened or shortened at pleasure. The third tube is otherwise useful. Timidity or disgust is unpardonable on the part of a physician when engaged in the discharge of his duty. But as it is often necessary in contagious diseases to explore the chests of the poorest individuals, reasonable precaution may be so far complied with as to use the cylinder with the additional tube, in cases manifestly contagious, or miserably wretched. Finally, with a view to portability, it is not necessary to disjoint the instrument, unless the third tube be employed, as the limbs will lie in a parallel position with the extra tube interposed, and become conveniently portable in a small case or bag.

Except in the case of one patient, who, from repeated explorations with other stethoscopes, was terrified at the proposal to submit to auscultation, it has for some weeks been successfully used in every case of thoracic disease in the Royal Infirmary. It has, however, been objected, that the auscultator could more conveniently suffer his head, with the inflexible instrument, to be raised and depressed by the diseased chest of the afflicted patients, than retain the flexible instrument *in situ*, by means of two fingers at each extremity—often at only one. But this opinion has not been maintained.

It has been objected, that it cannot, *à priori*, be expected, that sounds reflected from angles, could equal in loudness and clearness, sounds conveyed through a straight tube. But reference to the principles alluded to, will have reminded the objector, that the objection is scientifically invalid. The gentleman in question, however, admitted, after accurate and protracted examinations, that the sounds conveyed by the new, were equally loud and clear with those conveyed by the old instrument. It was originally expected, that hard substances should be preferred for the formation of stethoscopes. But every person knows, that some of the phenomena of sound are inexplicable by our present knowledge of acoustics.

It has been urged, that the flexible not being so simple as the inflexible stethoscope, the latter ought to be preferred. Simplicity in the construction of instruments should, doubtless, be always kept in view. But too much is often conceded to abstract terms; and the tube admitting only of so much flexion as convenience requires, it cannot be said that it deviates unnecessarily from simplicity.

These are the principal objections that have been advanced. To all its opposers, however, the writer respectfully replies, that it requires only experiment.

Laennec's, like almost every other invention, has been opposed; but the quick sale of his works proves that his discovery, like that of Jenner, necessarily and rapidly overpowers opposition. The auscultator is, in almost every case, unembarassed by the fallacy of symptoms; and it has been proved that the stethoscope, in many cases, accurately guides, not only with respect to the "repetition, increase, and diminution of remedies," but that it is often indispensable in pneumonia, pleuritis, bronchitis, measles, scarlatina, croup, fever, confluent small-pox, extensive erysipelatous inflammation, latent catarrh, phthisis, diseases of the heart, hydrothorax, doubtful cases of pregnancy, &c. It has been shown also, that it affords the surgeon the most important information previous to deciding on the operation for empyema, or for the extraction of foreign bodies from the trachea, in detecting hæmorrhage into the pleura, in ascertaining the state of the lungs previously to the operation for cancer of the breast, caries of the ribs, white swelling, &c.; and in the diagnosis of certain fractures, aneurisms, &c.

It is surprising that the discoverer of mediate auscultation did not suggest a flexible instrument. But Laennec, like the gigantic mind of the immortal Archimedes, grappled with great ideas in unexplored regions of thought. He struggled till science hailed him victor. His weapon was genius; his motto, *man*. Contented with the acquisition of all the knowledge attainable by the stethoscope, he despised the drudgery connected with the minutiæ of mechanics, directed his thoughts to great pursuits, and permitted the instrument to be modified by the humblest labourers in the field of science.

It has occurred to me, that both ears might be simultaneously and advantageously employed in stethoscopic examinations. An instrument adapted to this purpose, may consist of a tube, connected at its middle, at right angles to the cylinder, to be applied to the patient, and connected at its moveable extremities with two tubes, moveable also on the principle that has been described. It admits of easy adaptation, both to the ears and the patient.

If this paper should appear not unworthy of insertion, I shall send a drawing of the instrument, with a report of its effects, and the result of an experiment respecting the condensation of the air in the stethoscope during exploration. These deviations from the original cylinder, would doubtless have been long since effected, had any person reflected on the obvious modifications of which the inflexible stethoscope admits. Should they facilitate the attainment of so important a study as that of auscultation, it will afford much satisfaction to

Your most obedient servant,

Edinburgh, Aug. 12th, 1829. NICHOLAS P. COMINS.

# Correspondence.

"Audi alteram partem."

## COMPULSORY NOTIFICATION OF BIRTHS.

*To the Editors of* THE LANCET.

SIRS,—A distinct understanding was come to more than a fortnight ago between Lord Robert Cecil, Sir Henry Craik, Dr. Cooper, and myself, on the one hand, and the President of the Local Government Board on the other, to the effect that medical men were to be exempted from compulsory notification of births and from all penalties under the Notification of Births Bill. Acting on this assurance, Sir Henry Craik, Dr. Cooper, and I withdrew the motions of which we had given notice. I hold that when Mr. John Burns found that he could not carry his amendment he was bound in honour to withdraw the Bill. Those who pressed for exemption of the medical profession from pains and penalties have, to say the least, been outmanœuvred. I am, Sirs, yours faithfully,

Edinburgh, August 26th, 1907. JOHN BATTY TUKE.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *A Health Resort near Rome.*

THE first step towards what the Roman public, professional and lay, have long regarded as a desirable consummation—the establishment of a health resort on the site of the so-called "Hannibal's Camp"—has just been taken in the construction of a funicular railway up the Alban Hills to Rocca di Papa. That picturesque village, between two and three thousand feet above sea-level, has for years been utilised as summer quarters for the Roman garrison, but hitherto no attempt has been made to extend a similar advantage to the civil population—viz., to make the fine plateau above Rocca di Papa accessible by rail and available for residents during the great heat. The initial difficulty—that of getting to the place easily within an hour, instead of laboriously on mule or donkey within three times that interval—having at last been surmounted, the next step is the building of a hotel for the accommodation of the holiday-maker or the convalescent. Such an adjunct to the resources of the Eternal City would do much for its attractiveness to the visitor, forced as he has hitherto been to go far afield for summer quarters not nearly so desirable in point of climate and far inferior in the food-supply and the command of professional advice which proximity to the capital can afford. Of these advantages the medical world will have an opportunity of forming an independent opinion a few weeks hence, when the facilities for inspecting Italy's climatic resources which the organisers of the Physio-Therapeutic Congress are furnishing to its members will include a run by rail to Rocca di Papa, to "Hannibal's Camp," and to the Alban Mount—an excursion unique in historic association and picturesque attraction and calculated to convince the most sceptical outsider of the possibility of combining a "winter in Rome" with a not less salubrious and enjoyable summer in its environs.

### *The Senator Francesco Perona.*

Death has been busy in the ranks of the profession, its latest victim being this distinguished surgeon, who died at Novara on August 10th. An ornament of the North Italian School, both as consultant and operator, Perona found time, amid the exigencies of practice, to give the legislature the benefit of his experience, particularly in that primary want of Italy, public hygiene; and during four successive administrations he contributed notably to the improvement of the Codice Igienico in its practical application. On the 12th an imposing funeral attested the esteem in which he was held by the public and the profession; and, after cremation at the cemetery of Novara, his ashes were next day conveyed to Pavia where the customary *oraisons funèbres* were pronounced in commemoration of his life and work.

*Narrow Escape of Professor Rossoni.*

The Roman school was within an ace of losing its distinguished professor of medical pathology on August 16th. Dr. Eugenio Rossoni had driven to the Villa Umberto with the Baroness Hüffer and on alighting from his carriage at the Galleria Borghese was saying a few parting words to her when a bicyclist in full career knocked him down. The professor promptly regained his feet, but had sustained a severe blow on the left temple, from which the blood was flowing profusely. He assured the Baroness that the wound was trifling, but all the same was immediately conveyed in his carriage to the Policlinico where he was at once attended to by Professor Alessandri, assisted by Professor Ascoli and Dr. Maffi. He was found not only to have been wounded in the temple but to have sustained abrasion of the left palpebra, as well as several contusions on the left leg and on the hands. There was fortunately no sign of internal injury; so after being duly cared for by his colleagues above mentioned he was conveyed to his residence, where, on the next morning he was found by Professor Alessandri to be doing well. This is by no means an isolated instance of the dangers incurred in the capital of Italy by reckless cycling and motor driving—dangers recalling the risks to life denounced in the Third Satire of Juvenal as all too common in the Rome of the first century.

August 24th.

# Obituary.

## WALTER HENRY BROWN, F.R.C.S. IREL.

ON August 12th Mr. W. H. Brown died at Highfield House, Headingley, Leeds. During his professional career he had three or four attacks of blood poisoning, the last three and a half years ago, since which he never regained his usual state of health and suffered from chronic colitis associated at times with agonising pain and partial obstruction. In July, 1906, the obstruction was complete for five days and an operation was arranged, but the night before this was to be performed he obtained relief, and from that time never had any obstruction. At the end of three months he appeared so much better that he commenced his hospital and private work again. Those who saw him know how bravely he tried to do his work. In December of last year he was persuaded to resign his position of surgeon to the infirmary. In accepting his resignation the infirmary board passed the following resolution:—

> That in accepting Mr. W. H. Brown's resignation of his position as honorary surgeon to the General Infirmary at Leeds the weekly board desire to place on record their appreciation of the great services which Mr. Brown has rendered during the period of his association with the infirmary, and in particular during the 16 years that he has held the post of honorary surgeon. Conspicuous for his interest in his patients and his care for the honour of the infirmary, he has also won high esteem from his colleagues on the weekly board, and the faculty, and from the members of the staff of the institution. The weekly board desire to express their great sympathy with Mr. Brown in his inability to bear the double strain of his public and private practice, but hope that now he is relieved from his heavy duties at the infirmary he will speedily regain his full health and strength.

The wish expressed at the end of the resolution was unfortunately never realised, for at the end of January last he gave up all ideas of practice and from that time till his death spent the greater part of his time in bed, nursed by a devoted wife and nurses who had worked with him at the infirmary. They did everything in a most indefatigable manner to relieve his sufferings which at times were intense. Their attentions were the admiration of his colleagues who had the melancholy duty to look after him but who could do so little for him.

Mr Brown was only 50 years of age when he died. He was educated at the Leeds Grammar School under Dr. Henderson, afterwards Dean of Carlisle, and became a close friend of his family, and during the illness of his old master he was many times called to Carlisle in consultation. His medical education was at the Leeds School. Amongst his teachers were Professor T. Clifford Allbutt, Mr. S. Hey, Mr. C. G. Wheelhouse, Mr. T. Pridgin Teale, and Mr. T. R. Jessop. Mr. Brown obtained the M.R.C.S. Eng. in 1878 and the F.R.C.S. Irel. in 1887. The honorary degree of M.Sc. Leeds was conferred upon him in 1905. It was at the Leeds Infirmary that his work was principally done. Appointed assistant resident house surgeon there in 1877 he completed a year's office, and was then appointed house surgeon to the West London Hospital in 1878, where he had the advantage of working under Sir Alfred Cooper, Mr. H. T. Butlin, and other distinguished surgeons, who were at that time on the staff. The next year he was appointed resident surgical officer to the Leeds Infirmary. Four years later he commenced practice in Leeds, and was elected one of the honorary surgeons to the Leeds Public Dispensary. In 1885 he was elected as assistant surgeon to the Leeds Infirmary and subsequently surgeon. He held the office for 16 years, and in January last he was placed on the consulting staff. During these years at the infirmary his best work was done and some of the progress which surgery has made was due to his originality. As a teacher he attached much importance to instructing the students in the common things of everyday surgery, and always impressed upon them that it was the minor accidents and ailments with which they would have to deal, to a great extent, in the future. Mr. Brown was a frequent contributor to our columns of interesting surgical observations. We may instance the case of gastro-enterostomy published in THE LANCET of July 7th, 1900, in which at the end of ten days the stomach opening was found closed by a membrane, a condition which led to some important modifications in performing the operation. The case of intussusception, caused probably by a round worm, recorded in THE LANCET of Sept. 16th, 1905, illustrated his persevering methods. He removed the intussusception and made three attempts before he succeeded in restoring the continuity of the bowel. A paper on Continuous Transfusion as a Means of Preventing Shock in Prolonged Operations, which also appeared in our columns, was a valuable contribution to the subject, while cases of plastic surgery shown at the recent Oxford meeting of the British Medical Association demonstrated his skill in this branch of surgery. He took the keenest interest in the management of the infirmary, and some of the improvements which he suggested are worthy of mention, such as the alteration in the heating and ventilating of the operating theatres and the building of the new balcony for the open-air treatment of the children.

Mr. Brown was an enthusiastic lover of his profession and the dominant note in his character was his sympathy and kindness; nothing was too much trouble to secure the comfort of his patients, and this kindly feeling endeared him to them and a large circle of friends. His body was buried at Lawnswood Cemetery on August 14th in the presence of a large gathering of lay and professional friends, by whom his death at a comparatively early age was sincerely regretted. He leaves a widow, one son, and one daughter, having celebrated his silver wedding in the earlier part of this year.

# Medical News.

PLAGUE REPORTS.—The Department of Public Health of Queensland in a bulletin dated July 13th reports that on July 6th one case of plague was notified in Brisbane. The patient was a young man, aged 18 years, who died in the plague hospital on the evening of July 6th. Till the occurrence of this case no case of plague had occurred in Brisbane since May 31st. With reference to the Cape Colony, six cases of plague occurred in natives at two localities within seven and 12 miles respectively of King William's Town during the week ended August 3rd.

DEATH OF A CENTENARIAN.—The *Times* states that the death has occurred at Athea, county Limerick, of Mrs. Sullivan, *née* Dalton, aged 101 years. Her life was entirely spent in the parish of Athea and she had enjoyed good health, being able to attend the services at the Roman Catholic church up to April last.

# Births, Marriages, and Deaths.

## BIRTH.

TURTLE.—On August 25th, at 18, Cambridge-terrace, Hyde Park, W., the wife of Godfrey de Bec Turtle, M.D., of a daughter.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

### *OUR CURRENT NUMBER*

*Being almost exclusively devoted to information especially interesting to Students we are necessarily compelled to defer the publication of communications on other important subjects.*

*We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of* THE LANCET *relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies may be found.*

### *TO ADVERTISERS.*

*Owing to the pressure on our advertisement columns this week some announcements have unavoidably been held over.*

## Communications, Letters, &c., have been received from—

**A.**—Dr. W. H. Allchin, Lond.; Mr. R. J. Albery, Lond.; Mr. Algernon Ashton, Lond.; Mr. Sidney Appleton, Lond.; Mr. C. S. Ascherson, Lond.; Dr. James Adam, Lond.

**B.**—Dr. U. N. Brahmachari, Calcutta; Dr. A. G. Banks, Lond.; Miss Bland, Henleaze; Bristol Royal Infirmary, Secretary of; Messrs. Bonthron and Co., Lond.; Mr. T. B. Browne, Lond.

**C.**—Mr J. H. Chaldecott, Lond.; Dr. W. B. Crowfoot, Beccles; Cardiff Infirmary, Secretary of; Mr. R. A. Caldwell, Broadstone; Messrs. T. Cook and Son, Lond.; Messrs Cassell and Co., Lond.; Canterbury County Borough Asylum, Clerk of.

**D.**—Mr. G. W. Dawson, Lond.; Dr. J. Dulberg, Manchester; Messrs. Down Bros, Lond.; Devonshire Hospital, Buxton, Secretary of; Divisional Surgeon.

**E.**—Dr. William Ewart, Lond.; Dr. C. E. Easterbrook, Ayr; Dr. W. McAdam Eccles, Lond.; Major P. Evans, R.A.M.C., Wootton; Messrs. Elliott, Son, and Boyton, Lond.

**F.**—Dr. Gordon W. FitzGerald, Manchester; Mr. G. Fock, Leipzig; Messrs. Ferris and Co., Bristol; Messrs. R. D. and J. B. Fraser, Ipswich.

**G.**—Mr. T. H. Griffith, Leamington; Staff-Surgeon H. W. Gordon-Green, R.N., Devonport; Mr. Thomas Bowden Green, Lond.; Guernsey, Medical Officer of Health of; Miss J. Gould, Chalfont St. Giles; Messrs. R. W. Greeff and Co., Lond.; Galen Manufacturing Co., Lond.; Grimsby and District Hospital, Secretary of; Captain H. Garbett, R.N., Lond.

**H.**—Dr. W. N. Heard, Wareham; Mr. J. Humphreys, Bangor; Mr. M. Hayes, Limerick; Hull Royal Infirmary, Secretary of; Mr. Charles C. Haviland, Frimley Green.

**I.**—International Plasmon, Lond.; I. H.

**J.**—Mr. F. Jones, Houghton-le-Spring; J. W. R.

**K.**—Mr. R. C. B. Kerin, Lond.; Messrs. Knoll and Co., Lond.; Messrs. Knight, Frank, and Rutley, Lond.

**L.**—Mr. H. Littlewood, Leeds; Local Government Board for Scotland, Edinburgh, Secretary of; London County Council, Education Department, (Executive), Executive Officer of: Messrs. Lee and Nightingale, Liverpool.

**M.**—Dr. W. Norman May, Lond.; Professor R. M. Meldola, Lond.; Dr. C. R. Marshall, Harrogate; Mr. E. Merck, Lond.; Messrs. A. Mather and Son, Lond.; Manchester Medical Agency, Secretary of; Mr. J. Murray, Lond.; M. B. Lond.; *Midland Counties Herald*, Birmingham.

**N.**—Mr. J. H. Francis Nunn, Lond.; Nurses' Co-operation, Lond.

**O.**—D. A. O'Gorman Agency, New York.

**P.**—Mr. Y. J. Pentland, Edinburgh; Mr. William Partridge, Lond.; Mr. Peter Paterson, Glasgow; *Popular Science Siftings*, Lond., Editor of; Puzzled; Dr. Eldon Pratt, Henfield.

**R.**—Dr. A. E. Russell, Lond.; Dr. H. D. Rolleston, Lond.; Mr. W. Ramsay, Melbourne; Mr. J. M. Randle, Ruan Minor; Royal Berks Hospital, Reading, Secretary of; Royal Institute of Public Health, Lond., Secretary of; Messrs. Robertson and Scott, Edinburgh.

**S.**—Professor W. J. Simpson, Lond.; Sheffield University, Registrar of; Dr. J. Scanlan, Glasgow; Messrs. G. Street and Co., Lond.; Messrs. H. Simpson and Co., Lond.; Star Engineering Co., Wolverhampton; Southend-on-Sea Corporation, Clerk to the; Smith's Advertising Agency, Lond., Manager of; South Devon, Hospital, Plymouth, Secretary of; Sheffield Union, Clerk to the; Salford Corporation, Clerk to the; Mr. George Safford, Lond.; Dr. G. Arbour Stephens, Swansea; Mr. Sydney Stephenson, Lond.; Dr. H. B. Symons, Matlock; St. George's Hospital Medical School, Lond., Warden of; Mr. J. W. G. Smith, Aysgarth; S. H. F. P.

**T.**—Dr. J. Lewes Timmins, Lond.; Taunton and Somerset Hospital, Secretary of; Dr. J. Taylor, Lond.; Torbay Hospital, Torquay, Secretary of.

**V.**—Mr. J. W. Vickers, Lond.

**W.**—Mr. W. A. Wharram, Leeds; Messrs. F. Williams and Co., Lond.; Messrs. W. Wood and Co., New York; West Norfolk Hospital, Kings Lynn, Secretary of; Inspector-General Thomas E. H. Williams, R.N., Lond.; Mrs. Jane B. White, Lond.; Mr. H. B. Wilkinson, Blackadon; Mr. R. J. Willan, Newcastle-on-Tyne.

**Y.**—Mr. Macleod Yearsley, Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. A. Anderson York; Messrs. Armour and Co., Lond.; A. G. S.; A. J. A.; Mr. W. Allingham, Delabole.

**B.**—Dr. H. M. Barker, Harrogate; Mr. B. Barnett, Maisey Hampton; Dr. J. Biernacki, Lond.; Beckett Hospital, Barnsley, Hon. Secretary of; Dr. T. W. Beazeley, Little Bromwich; Messrs J. H. Booty and Son, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. C. Birchall, Liverpool; Sir J. W. Byers, Belfast; Bristol Myers Co., Brooklyn, U.S.A.

**C.**—Mr. C. E. Cowen, Cala; Cameron Hospital, West Hartlepool, Secretary of; Messrs. Curling, Wyman, and Co., Lond.; Crooksbury Santorium, Farnham, Medical Superintendent of; Cairo, Department of Public Health, Director-General of; Central London Throat, &c., Hospital, Lond., Secretary of; Carmarthenshire Infirmary, Carmarthen, Secretary of; C. D. R.

**D.**—Mr. W. T. Davies, Llanbister; Mr. J. Dunlop, Lond.; Dr H. Davies, Lond.; Doctor, Pancras-road; Dr. Dougal, Pittenweem.

**E.**—Mr. J. Evans, Maidstone; Mr. H. S. Elworthy, Ebbw Vale; E. H. L.

**F.**—Dr. L. Faleiro, Beja; Messrs. J. S. Fry and Sons, Bristol; Messrs. Fairchild Bros. and Foster, Lond.; Mr. F. T. Fagge, Llanfairfechan; Mr. H. McG. Forbes, Cuminestown.

**G.**—Mr. R. N. Geach, Charlbury; Mr. C. H. Garland, Lond.; G. D.

**H.**—Mr. R. T. Harrison, Dordrecht, South Africa; Messrs. Hankinson and Son, Boscombe; H. M.; Dr. Humphreys, Port Talbot; Miss M. Hayes, Kilwinning.

**I.**—Dr. R. Ingram, Cincinnati, U.S.A.; Invernith Lodge Retreat, Colinsburgh, Secretary of.

**J.**—Mr. E Jeffrey, Watford; J. S; J. M. K.; J. B.; J. D. M.; J. E. E.; Mr. T. Johnston, Rugby; J. H.; Dr. E. Jepson, Durham.

**K.**—Dr. W. G. King, Lond.; Dr. A. Kershaw, Farnworth.

**L.**—Dr. R. A. Lambert, Aldbourne; Locum, Clay Cross; L. B.; Leeds General Infirmary, Manager of; Messrs. Larcom and Veysey, Portsmouth.

**M.**—Mr. S. W. Milner, Malton; Margaret-street Hospital for Consumption, Lond., Secretary of; Male and Female Nurses' Association, Lond., Superintendent of; Dr. T. McCririck, Old Cumnock; Mr. A. C. McAllister, Croydon; Mr. J. B. McNeild, Peebles; M. J. M.

**N.**—Nurse, Herne Bay.

**P.**—Mr. J. F. Power, Gosport; Painswick Sanatorium, Gloucester, Medical Superintendent of; Dr. R. H. Pulipaka, Krishnagar, India; Peckham House, Lond.; Medical Superintendent of; Mr. C. R. Porter, Great Berkhamsted; Paisley Corporation, Town Chamberlain.

**R.**—Mr. C. A. Ryde, Brussels; Dr. R. R. Ross, Balerno; Royal Victoria Hospital, Dover, Secretary of; Dr. C. Raikes, Lond.; Royal Victoria Hospital, Dublin, Registrar of; R. W. W. S.; R., Barry; Miss J. Round, Lond. Mr. W. Powell Rees, Lond.

**S.**—Mr. D. Sen, Malda, India; Mr. W. Savage, Burslem; Mr. J. Sampson, York; St. Luke's College, Lond., Registrar of; *South Wales Argus*, Newport, Manager of; Surgeon, Kingswear; S. C. C.; S., Brighton; Salford Union, Clerk to the; Messrs. Savory and Moore, Lond.; Dr. D. Somerville, Wonersh; Seltzogene Patent Charges Co., St. Helens.

**T.**—Mr. J. Thin, Edinburgh; Mr. B. N. Howard Tripp, Southwold; Miss Dora Tourle, Ilford.

**V.**—Mr. C. Veitch, Edinburgh; Mr. J. T. Vulliamy, Rugby.

**W.**—Mr. H. F. Watson, Glasgow Mr. A. P. Walters, Eigg; W. C.; Mr. F. M. Wildish, Glasgow; Dr. D. E. Walker, Guilsborough; Mr. J. H. Walgate, Beverley; W. M. H.; Messrs. Wilson and Glenny, Hawick.

**Y.**—Dr. W. A. B. Young, South Cave.

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE

### SUBSCRIPTION, POST FREE.

| For the United Kingdom. | | To the Colonies and Abroad. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**Agent for the Advertisement Department in France.—J. ASTIER 31, Rue Bapts, Asnières, Paris.**

# Remarks

ON

# PERITONITIS AND ITS TREATMENT.

*Founded on an Address delivered to the Trowbridge Division of the British Medical Association*

By JAMES BERRY, B.S. Lond., F.R C.S. Eng.,

SENIOR SURGEON TO THE ROYAL FREE HOSPITAL.

"The treatment of peritonitis has always been a fruitful topic of discussion and dissension and will probably remain so, as the final chapter on this subject has not yet been written."[1] Such, gentlemen, were the opening words of an American professor of surgery when giving an address on the treatment of peritonitis. They are unfortunately as true to-day as they were when they were spoken just a year ago by Dr. John Gibbon of Philadelphia. I make no excuse, therefore, for reproducing them and for making them serve as the text of my discourse to you to-day.

In the whole domain of medicine and surgery there is scarcely any disease so serious, so different in its clinical manifestations, so dangerous when wrongly treated, and yet so difficult to treat according to fixed rules. Peritonitis may be a mere local inflammation of comparatively little importance which quickly subsides under simple medical treatment or no treatment at all. More often it is a much more serious affection demanding prompt and careful medical or surgical treatment. Only too often does it come before our notice in the form or at a stage when neither physician nor surgeon can do much, if anything, for its relief. Acute peritonitis, subacute peritonitis, chronic peritonitis, general peritonitis, local peritonitis are all mere degrees of the same process, and yet how different as a rule is the treatment required for each. Not only so, but a form of treatment which is to be strongly recommended at one stage or in one form of peritonitis may be most harmful and disastrous in its results if employed at another, and perhaps not very far removed, stage or form of the same disease. But underlying our treatment of all forms of peritonitis there are certain broad principles that should guide us in our endeavour to select the best possible means of treatment in any individual case.

It will be my intention this afternoon to discuss some of these principles and to endeavour to apply them to the different forms of peritonitis which we are in practice called upon to treat. The subject of peritonitis is, however, such a vast one that I must ask you to allow me to limit myself and to deal only with acute peritonitis. With the various kinds of chronic peritonitis and with the minor and slighter forms of local peritonitis I am not especially concerned to-day. And you will not be surprised if as a surgeon I dwell more upon the operative than upon the non-operative forms of treatment. Not that I wish it to be thought that a surgeon always necessarily treats peritonitis by operation. On the contrary, I believe that there are many cases of acute peritonitis that for one reason or another are best treated without operation. It is the duty of a right-minded surgeon to be ready to operate in any case in which it seems to him best for the patient that he should operate. But it is equally his bounden duty to abstain from operating if in the case before him he thinks that operation will do harm rather than good.

Peritonitis—inflammation of the peritoneum—what is it? Why is it so dangerous, so much more dangerous than inflammation, say, of a muscle, or lymphatic gland, or even of a joint? The very term peritonitis is a misleading one. It is not the mere inflammation of the peritoneum that is dangerous. This inflammation is in itself often exceedingly beneficial and protective. But peritonitis is dangerous in proportion as it is associated with *absorption* from the peritoneal cavity. It is the absorption of toxins from the peritoneal cavity, not the inflammation of the peritoneum, that is dangerous. The peritoneal cavity is, as we all know, a vast lymphatic space from which absorption of toxins readily takes place.

Let us consider for a moment what we mean by peritonitis. It is the inflammation of the peritoneum produced by the presence of bacteria. These may in some cases have come from the blood-stream, as when peritonitis occurs, as it occasionally does, in the course of an acute septic lesion of some other part of the body. Some of the cases of pneumococcic peritonitis secondary to pneumonia may perhaps be taken as an illustration. The bacteria may be introduced directly from without, as in the case of an accidental septic wound of the peritoneum or in the course of an operation performed without due attention to surgical cleanliness. But in the great majority of cases the bacteria are introduced into the peritoneal cavity from within by passing through the wall of one of the hollow abdominal viscera, the appendix, the intestine, the stomach, gall-bladder, Fallopian tube, &c. Not uncommonly the poisonous contents of the viscera are introduced through a visible opening in the wall of the viscus. Such is the case in the so-called perforative peritonitis. Perforation of a gastric ulcer, of an ulcer of the intestine, of the gall-bladder, are familiar illustrations of which we must all have seen many examples.

In appendicitis the amount of septic matter that suddenly escapes into the peritoneal cavity is generally quite small and often there is no visible opening in the appendix. Even if there is a definite visible opening the amount of septic matter that escapes is often small—perhaps only a drop or two, for example. The perforation of an appendix is usually preceded by adhesive inflammation of the lumen of that organ, which is apt to shut off the cavity of the appendix from that of the cæcum, so that all that escapes is what was in the appendix at the time of operation. This I have been able to demonstrate time after time in the post-mortem room when as surgical registrar I had abundant opportunities of doing post-mortem examinations on cases of appendicitis. By far the most serious and dangerous forms of peritonitis produced by appendicitis are those in which the perforated appendix has previously been distended and filled with a considerable quantity of foul septic fluid and those in which it is not the appendix itself that suddenly ruptures but an abscess that has slowly and quietly formed outside the appendix and which ruptures secondarily through its wall. These are the two conditions that are commonly found in cases to which the term fulminating appendicitis is applied. I am aware that this term is often applied, I think erroneously, to any case of acute appendicitis which happens to be rather more severe than usual. In the great majority of cases of acute appendicitis, then, the amount of poison that escapes is small. It is not more than the peritoneum itself can deal with. Most cases of acute or subacute appendicitis, therefore, even if not treated by operation, recover spontaneously, as all of us know who are old enough to remember the days when appendicitis was never treated by immediate operation.

But now let us take the case of a perforation of a large hollow viscus like the stomach or the cæcum. Here a perforation is rarely preceded by adhesive inflammation. The perforation occurs suddenly and is immediately followed by the pouring out into the peritoneal cavity of a vast quantity, often many ounces, of septic material. If the stomach perforated during digestion the quantity poured out is very great. If it happens that the stomach be empty at the time then the amount poured out, although usually considerable, is much less than during digestion, and these are the cases of perforated gastric ulcer in which symptoms are less severe and pronounced. It is in the case of sudden perforation of distended intestine, however, that we see the most violent and profuse invasion of the peritoneal cavity by a large quantity of horribly poisonous fluid material. Everybody here must have seen at one time or another one of those distressing cases of chronic obstruction of the large intestine which has been allowed to progress without relief by operation. A middle-aged or elderly patient gets obstruction of the bowels; he becomes distended, constipation persists, days, even weeks, elapse without relief. He has had little pain, very likely he is walking about, he probably vomits only occasionally, but the tension of his abdomen continually increases. Then suddenly he is seized with violent abdominal pain, he becomes collapsed, and in a few hours he is dead. The cæcum has suddenly perforated. At the post-mortem examination many ounces, perhaps half a pint or more, of thin liquid fæces is found spread out all over the peritoneum. The man has died from acute septic poisoning, the poison having been rapidly absorbed from the previously healthy and non-adherent peritoneum.

A similar train of symptoms is seen when a large intraperitoneal abscess bursts secondarily into that part of the general peritoneal cavity that has not been shut off by adhesions. Now it is just in these the most rapidly fatal forms of peritonitis that we see the least amount of visible peritonitis. I have done a post mortem in a case of this kind and have seen with the naked eye practically nothing that could anatomically be called peritonitis. In such a case there is perhaps a little injection of the peritoneum, but little or no lymph has been poured out and the surface of the peritoneum is quite smooth and shiny. But this is seen only in the most extreme cases where death has occurred within a few hours. And it is seen as a rule only in the case of elderly people in whom the resistance of the peritoneum to bacterial invasion is less than it is in younger subjects. But if the dose of poison is much less and the patient lives for a day or two, then we see a very different state of things. The peritoneum is intensely inflamed, much sticky lymph has been poured out, pus is seen to be smeared all over the peritoneal cavity or to be collected in places into definite abscesses; much thin purulent fluid may be found in the peritoneal cavity. In such a case the peritoneum has made a gallant attempt to shut off or to get rid of the poison. But it has failed; there was too much poison. The patient has died of toxæmia. The peritonitis could not stop the toxic absorption.

---

[1] John H. Gibbon of Philadelphia, in New York Medical Journal, April 7th, 1906.

And so I come back to the point from which I started when I said that peritonitis is in itself beneficent and protective, acting as it does as a barrier against the further absorption of septic matter. It has happened to myself on many occasions to have had the opportunity of seeing how much septic matter can be dealt with and destroyed by the peritoneum. More than once have I opened the abdomen and seen an abundance of septic matter, lymph, and even pus smeared widely over the peritoneal cavity. A few weeks later the same abdomen was opened for some further operation and little could be seen except a few adhesions. The septic matter had been wholly destroyed and got rid of.

Now let us consider for a few moments the clinical symptoms that may be observed in a case of commencing peritonitis due to the sudden escape of toxic material from a perforated viscus such as the stomach. In the first place there is a more or less severe pain which is usually at first localised to the seat of the perforation, but may be more or less general or may be referred to the region of the umbilicus. The peritoneum is normally insensitive to mechanical injury. This may easily be demonstrated in the course of such an operation as gastrostomy or colotomy when performed, as it sometimes has to be, without an anæsthetic. In such circumstances we all know that the stomach or colon may be pricked or cut without the patient feeling any pain. But the peritoneum is sensitive to such stimuli as the application to it of an irritant poison such as septic material. A sudden severe and persistent pain, accompanied by tenderness and rigidity of muscles over the affected area, is often sufficient for the diagnosis of a perforation of the stomach. It is frequently the duty of a surgeon to operate for perforated gastric ulcer upon such evidence alone. Nausea and vomiting usually follow soon afterwards, but it is not necessary or desirable to wait for the later symptoms such as rapid pulse and elevation of temperature. These latter indicate septic absorption and show that the patient has reached a stage less favourable for operative interference.

Now what does nature do when a sudden invasion of the peritoneal cavity by bacteria takes place? There is immediately a rush of blood to the affected area. The abdominal veins are capable of holding a very large quantity of blood, and a very large quantity of blood is now needed for the great fight which is to take place between the blood plasma and white corpuscles on the one hand and the bacteria on the other. The abdominal viscera then, and especially the great omentum, become engorged with blood. This filling up of the abdominal veins leaves less blood in other parts of the body. Hence in severe cases we have collapse. The arteries are empty and the pulse is feeble. I am aware that other factors, such as reflex inhibition of the heart, may play a part in the production of shock. But I lay special stress on this cause of the shock and feeble, rapid pulse that we may meet with in peritonitis because it ought to teach us that the proper mode of treatment is to replenish the empty vessels by giving the patient fluid, plenty of fluid, to replace that which has gone off to the abdomen. But I shall return to this later.

Concerning the two important symptoms, elevation of pulse and temperature, I need say but little. Everybody knows that of the two the pulse is by far the more important. The temperature may be normal or subnormal in a fatal case of peritonitis. If the pulse is not greatly raised, and especially if its rate be not steadily increasing, there is as a rule no immediate cause for anxiety. Think well of a case of peritonitis in which the pulse-rate remains steadily below 100.

I come next to a symptom which is present in all but the very early stages of peritonitis, and that is *distension* of the abdomen. The intestines become filled with gas. Why this should be so is by no means clear to me. That it is not altogether due to the growth of bacteria is obvious. I presume that it is in some way connected with injury to the nerves of the intestines, although why this should lead to the actual formation of gas I do not know. On a small scale we see this same rapid distension of the intestine with gas when we apply a clamp to the small intestine in the course of an ordinary gastro-enterostomy. Within a few minutes of the application of a single clamp to the loop of jejunum, the latter which was empty and collapsed becomes distended. When the time comes for opening the intestines it is found to be filled with a mixture of mucus and bubbles of gas. A question I have often asked myself without being able to answer satisfactorily is, How far is this distension protective and beneficial? Certainly many cases of slight peritonitis are accompanied by great distension and the patients nevertheless get quite well without operation. On the other hand, it is quite certain that the presence of much distension adds very greatly to the difficulties and danger of the case if any large operation be undertaken.

We know but little about the conditions that regulate the absorption of septic matter from the peritoneal cavity. That great absorption and destruction of septic matter does take place there is no doubt. What becomes of it? It is probably excreted directly into the stomach and perhaps into the intestines and thus got rid of by vomiting and defæcation. Possibly distension plays an important part in this absorptive and excretive process. Certainly free purgation has an excellent effect in draining away septic products in many early cases of peritonitis. It is not, however, always possible or judicious to employ this remedy, because the movements of the intestines may in certain stages of peritonitis do much harm in disturbing adhesions and disseminating poisons over healthy peritoneal surfaces. In later stages when the intestine becomes paralysed and unable to contract, distension is a sign of very bad omen.

There is a class of case in which great distension of the whole abdomen occurs early in connexion with the escape of a small quantity of septic matter into the peritoneal cavity. There is little or no tenderness, the patient's general condition is good, there is no vomiting, but the pulse is generally rapid. In such cases it is generally best not to do any large operation but to be content with giving plenty of fluid. I may illustrate this by a case of acute appendicitis in a young lady whom I saw with Dr. H. Savory at Bedford. There was so much distension that I was doubtful whether she had not already got a generalised peritonitis. A small incision an inch long showed that the peritoneum was not everywhere affected. A small gauze drain was inserted, the distension gradually disappeared, and a few weeks later I removed the appendix with ease and safety, the patient making an excellent recovery. Any attempt to remove the appendix during the period of great distension would almost certainly have been attended by grave disaster. In more severe cases of the same class there may be vomiting as well and the patient may be so ill that the surgeon is tempted to perform a large and immediate operation. Two years ago I saw with the late Dr. William Travers of Kensington a case of what had been supposed to be one of acute intestinal obstruction. The abdomen was greatly distended and very tense and tender and there was much vomiting. After a few hours of waiting the vomiting subsided, then in the course of a few days the distension subsided completely, and later still I removed the appendix by an easy and safe operation.

A few words about the effusion into the peritoneal cavity of serous fluid which occurs in so many cases of acute peritonitis. It is well known that blood serum (or plasma) is bactericidal. The fluid is poured out to help in destroying bacteria. We see this in the cellular tissue when an infected area is surrounded by œdema. According to Sir A. E. Wright, the bactericidal power of serous fluid diminishes in the immediate neighbourhood of an infected area. Its bactericidal power becomes exhausted. Consequently the letting out of this fluid by operation leads to the effusion of a further amount of fresh serum and the destruction of more bacteria. Hence the beneficial effect of drainage of inflamed areas. The beneficial effects of draining away the fluid in chronic tuberculous peritonitis is thus explained. One other point I should like to allude to and that is the effect of a dose of toxin upon the opsonic power of the blood plasma. A dose of toxin of sufficient size produces at first a lowering of the opsonic index—that is, the patient enters into what is called the negative phase with regard to that particular bacillus. If, then, a further dose of toxin is immediately administered, as is necessarily done to a greater or less degree by the traumatism of an operation, then the negative phase may be still further increased even to the point of death. But after an interval of a few days, about three or four, the opsonic index is greatly raised to far above the normal and operations at this stage can be performed with very much greater safety.

The particular form of bacillus with which we most often have to deal in cases of perforative peritonitis is, of course, the colon bacillus, and it is to this form that my remarks more especially apply. There are, of course, various other kinds of bacilli that play their part in the production of peritonitis, but I do not propose to discuss them to-day. Much has been written of late about the virulence of the bacteria and its effect upon the production of peritonitis. Without wishing to detract from the value of observations upon the virulence of bacteria in particular cases, I would say that I think that of late undue stress has been laid upon the *quality* of the bacteria and too little stress upon the *quantity* of poison that is the cause of a perforative peritonitis. A tolerably extensive experience of peritonitis both in the post-mortem room and at the bedside, an experience extending over a period of more than five-and-twenty years, has convinced me that, other things being equal, it is upon the *quantity* of poison that is suddenly effused into the abdomen rather than upon the quality that the severity of the attack of peritonitis depends; and this is especially true of the peritonitis connected with appendicitis, that most common cause of peritonitis.

Now as to treatment. I have gone at some length into matters of pathology and symptoms because a correct knowledge of the state of affairs before us has a most important bearing upon our treatment. The first point then for us to decide is the diagnosis. The more early and the more exact the diagnosis the better shall we be able to treat an individual case. The next point is to give a prognosis. What is likely to be the natural course of the illness if left to itself. What is likely to be the effect of the various modes of treatment that we can offer. The nature of the perforation, if there be one, the quantity of poison effused, the character of the poison, and especially the *quantity*, all effect powerfully the prognosis in an individual case.

The condition of the patient when first seen and the severity of the symptoms are often enough to enable us to decide at once that the prognosis is extremely grave and perhaps that an immediate operation offers the best prospect of recovery. In peritonitis there is much truth in the saying that prevention is better than cure. We shall doubtless all be agreed that in a case of perforation of a gastric ulcer the sooner an operation is performed the better for the patient. In the case of sudden perforation of an appendix, or of an appendix abscess, the same course is sometimes the wisest one to adopt.

But it must be remembered in connexion with acute appendicitis that *it is only in a minority of cases that there is any actual or visible perforation.* Of 460 consecutive cases of acute appendicitis published by Ochsner, in 255, considerably more than half, there was no perforation. The case for immediate operation is then very different from that of perforation of a stomach. But a peritonitis due to the escape of a small quantity of poison may spread steadily and the patient gradually pass into a condition in which operation is attended with grave risk. Here then is a difficulty, which some surgeons attempt to solve by teaching that all cases of early appendicitis should be operated upon *if seen early.* There is much to be said in favour of this view. But, practically, we surgeons do not see cases of acute appendicitis very often in this very early stage. And if one adopt the rule, also laid down by some surgeons, of operating upon all cases as soon as they are seen we should very often operate on patients at an unfavourable stage, at a stage when the mortality is admittedly high, at a stage when, in my opinion and that of many surgeons, it is usually best to defer operation, for a time at least. At this later stage much may already have been done by nature in a case of intra-peritoneal inflammation by shutting off and localising the poison. The risk of an operation at this somewhat later stage is that we may undo much of the good that has already been done.

It is absurd to pretend that operations, especially large operations, upon patients suffering from acute peritonitis do not carry with them much risk. What we have to consider is whether the risk of the operation with its necessary attendant evil is, or is not, more than counterbalanced by the good it is likely to do. The harm that a large operation may inflict is twofold: shock from manipulation and exposure of viscera and further absorption of septic matter by diffusion and absorption of poisons already more or less shut off by adhesions and omentum from the circulation. But, on the other hand, what good does an operation do? We can do two things by operation, and practically all operations for peritonitis do these two things only. Firstly, we can, by closing a perforation or removing a septic focus, prevent the further entrance of poison into the peritoneum. Secondly, we can to a limited extent, but to a limited extent only, remove the poison that is already in the peritoneal cavity. I think that most surgeons will agree that the removal of septic matter from the peritoneum by operation is never complete. We can remove a great deal; we can often remove so much that the peritoneum itself can deal with the little that is left. I have in past years seen the abdomen washed out in the most thorough manner with gallons of fluid, but the septic matter was not all removed and the patient, though operated upon in quite an early stage of peritonitis, has nevertheless died of sepsis. What we cannot do by operation is to remove from the blood the poison, bacteria or toxins, that have already entered it. But we can to a certain extent get rid of these poisons in the blood by other means—namely, by encouraging excretion of them through the kidneys and in other ways. And this is done mainly by the administration of fluid in one way or another.

Now for purposes of treatment I should like to divide all cases of peritonitis into four classes.

I. Those in which there is no perforation of any viscus and in which there is no collection of fluid in the peritoneal cavity. The early stage of a peritonitis supervening after an abdominal operation in which no hollow viscus has been opened may be taken as an example. The amount of poison in the peritoneal cavity is in such a case very small. In such cases free purgation by salines and the administration of large quantities of fluid either by the mouth or, better, by the rectum, or in severe cases by the subcutaneous tissue, or even into a vein, is, in my opinion, the best form of treatment. This treatment aims at eliminating by bowels and kidneys the toxins that have already entered the circulation and puts the peritoneum in the best condition for destroying the bacteria that remains. Opium should be avoided in such cases. If this treatment fails to arrest the course of the inflammation it may be desirable to drain the peritoneal cavity if there is any evidence that there is free fluid in the peritoneal cavity.

II. The second class is that in which we know, or strongly suspect, that there is a recent perforation of a hollow viscus, such as the stomach or intestine. Here an immediate operation should be performed with the object of closing the perforation and preventing further extravasation into the peritoneal cavity. When once the diagnosis has been made the sooner the operation can be done the better. If it can be done before symptoms of peritonitis have become well marked so much the better. A perforated gastric or duodenal ulcer affords the best example of this type of case. A minority of cases of acute appendicitis, the fulminating group, come into the same class. The very hopeless cases of perforation of a distended cæcum may also be treated in this way, but it is very rarely, if ever, that operation can in these cases be done soon enough to be of any use.

In the cases of this class it is prevention of peritonitis rather than the cure of peritonitis that is aimed at. With regard to the best method of dealing with the material that has already been effused into the peritoneal cavity much difference of opinion prevails. Some advocate thorough flushing of the whole peritoneal cavity, others prefer local sponging, others again trust mainly to drainage. In the less severe cases operated upon early it is sometimes permissible to close the abdomen without drainage. For my own part, after a tolerably extensive experience of all these methods, I think that as a rule the less that is done to the peritoneum by washing or sponging the better, and that free drainage usually affords the best means of getting rid of the extravasated septic material. But it is impossible to treat all cases according to any fixed rule. In this second class of cases it is best, in my opinion, to avoid purgatives at all stages, to give at first nothing at all by the mouth, but to give fluid, if necessary, by the rectum or subcutaneously. In many of the less severe cases the administration of water by the mouth does no harm.

III. The next class is a very important one and includes the great majority of the cases of appendicitis that we see in practice—at any rate, in surgical practice. These cases are usually seen at some later stage than those of the two classes I have already mentioned. This class includes those in which there is considerable peritonitis involving much of the peritoneal cavity, with more or less tendency to the concentration of the inflammation in one region. The septic fluid, sero-pus or pus, is more or less localised. Most of the cases of acute appendicitis with abscess belong to this class and many of those without abscess. There is usually a good deal of distension of the abdomen with rigidity and tenderness, but the latter is more marked in one part of the abdomen than elsewhere. Nausea and vomiting are present if food is taken. The pulse and temperature are probably both above the normal. Whether the patient looks very ill or not depends not so much on the amount or nature of the septic material within his abdomen as upon the amount of septic absorption that is taking place from the septic focus. A patient may have a horribly septic focus in his abdomen, a perforated or gangrenous appendix surrounded by very offensive pus, and yet he may be suffering very little from absorption if the septic focus is well shut off by omentum and adhesions and is not under conditions of great tension. I desire to draw your attention especially to this point because one sometimes hears a surgeon speak as if the mere existence of such a septic focus were in itself a sufficient reason for its immediate removal by operation. The operation for its removal may be far more dangerous than leaving the septic focus where it is; at any rate, for a short time until a more favourable period for operation has arrived. Ochsner's opinion and statistics strongly support this conclusion.

Now how are we to treat these cases? Our natural surgical tendency in such cases is to remove the septic focus as soon as possible, and a great many surgeons, I think the majority of the surgeons who write upon appendicitis, teach that this should be done. In some cases it is undoubtedly good treatment to do so. But in many cases I venture to think that immediate operation is very bad treatment and does immense harm. When we are brought face to face with one of these cases we ought, I think, to ask ourselves first of all what is likely to be the course of events if we do not operate at once? Secondly, what good and what harm may we do by operating at once? Thirdly, if we do operate what manner of operation should we do, for there are several?

The ordinary course of events in the majority of cases in my experience is that the symptoms increase in severity up to a certain point and then recede as the septic matter becomes more localised or as it is completely absorbed. When localisation has taken place then an operation should be undertaken for the evacuation of the pus, or in cases where there is no abscess, for the removal of the appendix or other primary source of infection. In a minority of cases, in my experience a small minority, *provided that the case be properly treated* throughout, the inflammation will continue to spread and the patient will either die or will pass into the next class of case which I propose to discuss.

It is exceedingly hard in a given case to give an accurate prognosis. The duration of the illness, the stage which it has reached, the severity of symptoms, and especially the increasing severity of symptoms are the points upon which which we must endeavour to base our prognosis and consequently our treatment. But the great majority will improve and pass into a more favourable condition for subsequent operation if not interfered with by operation at this acute stage. If it is decided to abstain from operation at this stage it is extremely important that other treatment should be carried out rigidly. The most important point is *not to give purgatives* or large enemata and *not to give food by the mouth.* The patient can do very well without any food for a day or two, and if it be necessary to give him nourishment this can be administered quite well by means of small nutrient enemata. If the patient is thirsty he should be given fluid and the most convenient way of doing this is to inject considerable quantities *very slowly* by the rectum. Care should be taken not to distend the rectum, but to let the fluid run in so slowly that it is absorbed as fast, or nearly as fast, as it enters. If the patient is not thirsty there is no need to give much water. He should be kept as quiet as possible and should be placed in such a position that the thorax is considerably higher than the pelvis. Any fluid within the abdomen will then tend to gravitate towards the iliac fossa or the pelvis, situations in which it can subsequently be most easily dealt with.

For some years I have treated cases of acute appendicitis of this class and the next on these lines. The number of cases I have had to deal with is no doubt smaller than the number that come to surgeons who have written much on appendicitis. I suppose, too, that I must have been singularly favoured by good fortune, for in the last two years I have lost but a single case of acute appendicitis, either in hospital or private practice—a boy who came into hospital on the second day of a very acute attack. He was not operated upon and he died two days later. A necropsy showed a considerable abscess which had burst, evidently before admission to hospital, and which had set up a general peritonitis. A stout old lady of over 60 years of age whom I saw with Dr. Charles Drage of Hatfield also died from peritonitis without operation. She was very fat and in bad condition and her peritonitis may possibly have been due to appendicitis, although I think it was due to another cause. There was no post-mortem examination. The boy might perhaps have benefited had he been operated upon when I first saw him, although even then his chance of recovery would have been poor. The old lady was one upon whom no prudent surgeon with any regard for his patient could have operated with the least chance of success. On the other hand, I can point to a considerable number of cases of acute appendicitis with peritonitis which I have had to treat within the same period, upon none of which did I do any immediate operation and all of them have recovered. Some underwent no operation at all; most had the appendix subsequently removed in a quiet interval; others had abscesses opened at a later stage at periods varying from a day or two to several days after I first saw them.

But I have no desire to dwell upon my own cases. I prefer to bring forward the very large and detailed series of cases published by Dr. Ochsner,[2] who, like so many American surgeons, has had an unusually large experience of appendicitis. He deals with 1000 cases of appendicitis and his results are tabulated as follows: Chronic appendicitis or interval operations, 540; mortality, ·5 per cent. Acute appendicitis without perforation, 255 cases; mortality, 1·9 per cent. (of these six entered the hospital within 36 hours of the attack). Acute appendicitis, perforated or gangrenous, without abscess, 55 cases; no deaths (of these five entered the hospital within 48 hours of the attack). Acute appendicitis, perforated, with abscess, 117 cases; mortality, 3·4 per cent. Acute appendicitis with diffuse peritonitis, 33 cases; mortality, 30 per cent. Of the total number of 1000 cases 22 died. "Of the 255 acute appendicitis cases without perforation, 200 were operated upon immediately on entering the hospital and 55 were treated by gastric lavage and absolute prohibition of food and cathartics of any kind by the mouth, the nutrition being accomplished by means of small enemata. Of the 55 cases, perforated or gangrenous, but without abscess, 21 were operated on at once and 34 were first starved until they seemed in a safe condition for operation. In most of these cases the appendix was completely surrounded by the omentum and held away from all other abdominal structures. Of the 117 cases of acute appendicitis in which abscess had formed, 39 were operated on at once and 78 were treated by prohibition of all nourishment and cathartics by the mouth until their condition seemed sufficiently improved to make the operation appear safe. Of the 33 cases entering with diffuse peritonitis resulting from perforated or gangrenous appendicitis, all were treated at first with gastric lavage and exclusive rectal feeding. Of this class a number were in a dying condition when they arrived at the hospital, which accounts for the high mortality in this class of cases. Seven of these cases were not operated on for the reason mentioned, but they are counted among the deaths in order to include the entire mortality of all cases treated."

---

[2] A Review of the Histories of One Thousand Consecutive Cases of Appendicitis operated on at the Augustina Hospital during the thirty-three months from July 1st, 1901, to April 1st, 1904, by A. J. Ochsner. A full abstract of this paper will be found in the Journal of American Medical Association, Dec. 17th, 1904, from which I quote.

Many cases of acute abdominal inflammation are first seen by the surgeon when the distension and acute symptoms have already begun to subside and in many of these operation may at once be undertaken with advantage. There is often danger in waiting too long and allowing pus to disseminate, although the danger is not usually so great as that of operating too soon in these cases. The treatment of localised intraperitoneal suppuration scarcely comes within my province to-day. But I might just say that one or other of two classes of operation should be done according to the stage which the suppuration has reached and the situation of the abscess. Either the abdomen should be freely opened, the region of the abscess carefully walled off with gauze *before* the abscess is opened; or else, if the abscess is in contact with the abdominal wall over a considerable area (and palpation affords the best means of determining this) a simple incision into the abscess within the area of adhesions is sufficient. The danger of the first course is that the abscess may unwittingly be opened before the gauze packing has been placed in position; the peritoneal cavity then becomes suddenly flooded with a large quantity of septic material and very grave risk is incurred. This is a not uncommon cause of death in unskilful hands. Frequently this method of opening the abscess is the only one that is available, as in cases where the pus is not in contact with the abdominal wall in such a manner that it can be opened by simple incision. The danger of the second course is that in the simple incision of an abscess, such as that of the appendix, the area of limiting adhesions may be transgressed and the non-adherent and consequently absorbing peritoneal cavity opened up and flooded with septic pus in the manner just described with equally disastrous result. I show you here six diagrams which I published some years ago in THE LANCET.[3] They are of cases of appendix abscess which came under my notice in the post-mortem room when I was surgical registrar. Each shows the area over which there were adhesions between the abscess and the abdominal wall. I have now added to each the incision that was actually made by the operator and it will be seen that in all the cases the non-adherent peritoneum was opened with fatal result.

A very excellent method of opening localised collections of pus, and one that I frequently employ, is that of making an incision through the posterior fornix of the vagina in women or through the rectum in males. But in order to do this with safety there must be a sufficiently large collection of pus, and ordinary care must be taken not to wound other important anatomical structures. It is frequently far safer to drain by the vagina than to do so through a deep incision through the anterior abdominal wall. The one thing that must not be done in the opening of an intra-abdominal abscess is to cut into it without due regard to the protection of the non-adherent peritoneal cavity. Either the general cavity must be carefully protected by gauze packing or advantage must be taken of adhesions already present if disaster is to be avoided.

IV. I come now to the fourth class of cases, those in which there is a general diffuse peritonitis with general distension of the whole abdomen and purulent fluid diffused over a large portion or the whole of the abdomen. I would here point out that diffusion of septic matter over the *whole* abdomen is not so common as is often thought. The post-mortem experience that I gained during the years when I was surgical registrar to a large London hospital taught me that many cases which clinically seemed to be cases of general peritonitis involving the whole peritoneal cavity were often found post mortem to be really cases in which the peritonitis was localised to a portion only of the abdomen, perhaps two-thirds or three-fourths only. Generally some small portion of the peritoneal cavity was not involved.

Of the symptoms of this form of peritonitis I need not say anything as they are sufficiently well known to all of us. With regard to the appropriate treatment there is much difference of opinion. Dr. Gibbon[4] of Philadelphia in the paper I have before alluded to says that "surgeons in their attitude towards a generalised peritonitis may be put into three classes. Those who do nothing in the way of operative interference but simply keep the patient quiet and the stomach empty until the inflammatory process and exudates have become localised, and if the patient lives until this has taken place they then operate. ...... The next class is made up of those who believe in immediate and radical surgical intervention, consisting in freely opening the peritoneal cavity, breaking up all adhesions, opening all pockets and thoroughly irrigating the entire peritoneum. The third and more recent class believe that the abdomen should be immediately opened, the cause of the inflammation sought for and removed, and the abdomen thoroughly drained with the least possible disturbance of viscera." Dr. Gibbon goes on to say that it has always seemed to him that "the failure to get the good results reported from certain lines of treatment is because we do not carry them out as specifically as is recommended by their advocates: in other words, we, inclining possibly to the operative treatment in employing the Ochsner method, do it half-heartedly without expecting a good result, whereas Ochsner carries it out to the letter and expects good results. We have all seen a very incomplete and injurious irrigation of an abdomen done in cases of general peritonitis. Such treatment, unless it is carried out thoroughly and every part of the abdomen irrigated, can be of little benefit if it is not definitely harmful, and this accounts for the difference in results obtained at the hands of those who are enthusiastic over irrigation and of those who do not look upon it with the same confidence."

The Murphy method as described by Gibbon "consists in making a small opening in the abdomen, closing the perforation or removing the appendix as the case may be, the introduction of a large drainage-tube into the pelvis, placing the patient in a sitting posture of from 35 to 45 degrees, and the administration of a quart of salt solution every two hours per rectum." Gibbon quotes Murphy's words as follows and they seem to me to be of the greatest importance: "It is a fatal mistake," says Murphy, "to mop, wash, or handle the intestines or peritoneum. Then, too, the simple opening of the abdomen relieves the pressure under which the pus rests, and we know all that is necessary to stop absorption from a pus accumulation in any part of the body is to open the cavity and relieve the pressure. It is injurious and even dangerous to milk or even handle an acute abscess; it is doubly so to handle an infected peritoneum, but the pressure should be relieved by opening it, allowing it to drain, and exposing the anaerobic flora to the air." Gibbon describes eight cases of his own in which he had adopted the Murphy method and he had five recoveries and three deaths. He expresses himself as a warm convert to the Murphy method. He further states that he had heard Murphy say in October, 1905, "that he had had 29 cases of diffuse or general peritonitis in which he had employed his method with but a single death, this one occurring from pneumonia on the sixth day."

Like most surgeons, I suppose, I have tried all three methods at different times, and I am inclined to the belief that of the three the Ochsner method is the one that is most suitable for the great majority of cases of diffuse peritonitis. For the very worst class of case, in which no delay is possible, and they are, I think, few in number, the Murphy method is undoubtedly good. I entirely agree with those who condemn the very large operations which are so often performed in this country. The mortality of these operations, so far as I have seen and so far as I can judge from those who have published detailed statistics of their cases, has been literally terrific.

I think I notice at the present day a tendency amongst surgeons of large experience to abstain more and more from these very large operations. We are beginning, I think, to realise more and more fully that many very bad and apparently hopeless cases of general peritonitis will recover if the surgeon will abstain from doing any large operation. In this connexion I should like to refer to an admirable paper by Mr. J. Rutherford Morison, a well-known advocate of extensive operation in early cases of appendicitis. He gives details of a large number of cases treated with excellent results. But speaking of general peritonitis he says: "General peritonitis of more than 24 hours' duration is not likely to be benefited by operation, for the favourable chance has been lost; indeed, an operation not seldom hastens the end and may be the cause of death," and he goes on to say, "it is not without surprise that I have observed recovery in such cases without operation." In this paper he gives details of 15 cases of general septic peritonitis. Ten of them were treated by operation, with eight deaths, while five of them were treated without operation, with only one death! The numbers are small, but I think significant, and Mr. Morison has recently told me that with regard to this particular class of cases he has largely given up his former practice of operating upon them.

---

[3] THE LANCET, Dec. 30th, 1899, p. 1858.

[4] The Treatment of Diffuse and General Peritonitis with Special Reference to the Murphy Method, New York Medical Journal, April 7th, 1906, p. 706.

A few words about the posture which a patient with suppurative peritonitis should be made to assume. For a long time, as I have already said, I have been in the habit of raising the shoulders of my patients so that fluid in the peritoneal cavity may gravitate towards the pelvis where it can be most easily and safely dealt with. Murphy carries this practice much further and according to Gibbon and Fowler he "has been so much impressed with the advantage of the sitting posture that he now has cases of peritonitis brought to the hospital in the ambulance, anæsthetised, placed on the table, and operated upon in this position." I feel sure that Murphy is entirely right and I wish that I could persuade all those who send cases of peritonitis to the Royal Free Hospital to adopt the same precautions.

And now, in conclusion, let me add a few words about that most fruitful source of peritonitis, I mean, of course, acute appendicitis. It may seem to you an extraordinary thing for me to say, but I say it with deliberation and with a profound conviction of its truth, that the very high gross mortality in acute appendicitis which undoubtedly exists in this country (and in other countries as well) is largely due to the fashion of indiscriminate, excessive, and injudicious operating which not long ago was at its height but which, I venture to think and hope, is now showing signs of subsiding. Appendicitis may or may not be more common than it used to be. Personally I do not think it is, although no one can deny that it is more often diagnosed and I have no doubt that deaths from it are much more common than they used to be. It is not unusual to hear it stated that modern operations for appendicitis have resulted in a great saving of life. I believe that, on the whole, the exact converse is the case. If we were all to go back to the old treatment of appendicitis that was in vogue 25 years ago, and that is still in vogue in many parts of the country, there would be a lesser mortality from appendicitis than is the case at present. This is a very different thing from condemning all operations for acute appendicitis, which I am far from doing. Nor do I wish to detract from the excellent work that is done by many surgeons of large experience who advocate, and perform, frequent operations for appendicitis and publish very often brilliant results. I am thinking rather of the far larger number of operations performed by those who do not publish their results, performed by those who do not discriminate sufficiently between the cases that should be operated upon and those that should not be operated upon. It is the doctrine of "Here is a septic focus, let us take it out now at all costs," that, in my opinion, does so much harm. It is for more discrimination in the choice of an operation, in the kind of operation, in the stage at which it should be performed, that I would venture to plead.

---

# ACUTE YELLOW ATROPHY OF THE LIVER FOLLOWING OPERATION FOR INTESTINAL OBSTRUCTION.

BY C. E. CAMPBELL-HORSFALL, M.B., CH.B. VICT.

ALTHOUGH from time to time cases of acute yellow atrophy are placed on record, yet it remains one of the rarest diseases met with and its causation as inexplicable as ever. But cases following operations are rarer still and with but one exception have all ended fatally. Perhaps before discussing the case which is the subject of this paper it would be well briefly to review the general features of acute yellow atrophy. Osler defines it as jaundice associated with marked cerebral symptoms and characterised anatomically by extensive necrosis of the liver cells with reduction in volume of the organ.

*Etiology*.—This is one of the rarest diseases. There are not more than 300 cases on record. It generally occurs between the ages of 20 and 30 years, but cases have occurred in quite young children and even in infants. It is more common in women than in men and seems to have a remarkable connexion with pregnancy. It has followed fright or profound mental emotion and is sometimes secondary to other ailments—typhoid fever, sepsis, syphilis, gonorrhœa, and phosphorus, antimony, and arsenic poisoning. Although the symptoms produced by phosphorus poisoning are very similar to those of acute yellow atrophy the two conditions are not identical.

*Morbid anatomy*.—The liver is greatly reduced in size, looks thin and flattened, and sometimes does not reach more than one-half or even one-third of its normal weight. It is flabby and its capsule is wrinkled. On section the colouring is mottled, there being red and yellow areas of softened liver tissue. The organ may cut with considerable firmness. Microscopically the liver cells are seen in all stages of necrosis and in spots appear to have undergone complete destruction. The bile ducts and gall-bladder are empty. Hunter considers that it is a toxæmic catarrh of the finer bile ducts, similar to that which is produced after poisoning by toluylene diamin or phosphorus.

*Symptoms*.—Commences usually as a gastro-duodenal catarrh and at first the jaundice is thought to be of simple nature. This generally lasts a few days and then severe symptoms set in, headache, delirium, trembling of the muscles, and in some instances convulsions. Vomiting is a constant symptom and blood may be brought up. Hæmorrhages occur into the skin or from the mucous surfaces. Pregnant women may abort. With development of head symptoms jaundice usually increases, coma sets in, and gradually deepens until death. The temperature is variable, sometimes afebrile and in some cases marked pyrexia occurs. Usually the temperature rises just before death to 105° or 107° F. The pulse is usually rapid and the tongue is coated and dry. The individual enters into a typhoid state. The urine is bile-stained and contains tube casts. Leucin and tyrosin crystals are not constantly present. The stools are clay coloured from the absence of bile. Cases are almost invariably fatal, there being but few instances of recovery. Nineteen recoveries have been collected by Weising and Ballin. No known remedies have any effect on the course of the disease.

As a sequel to operations Max Ballin has collected ten cases from the literature, a table of which I append below, including the one that came under my own observation. All of these cases, with the exception of Ballin's own case, died.

The following are the notes of the case under my care. On the evening of May 31st, 1904, I was called to see the patient, a young married woman. She complained of severe pain in the lower part of her body and had vomited several times. She had not been feeling well for some time, and two days before I saw her she had had a slight shivering fit. When I saw her she looked anxious and was in evident distress. She had a pulse of 100 and her temperature was 100·5° F. On further examination I found great tenderness over the abdomen in the lower part, most marked in the left iliac region. No tumour could be felt and there was no marked dulness. The abdomen moved readily with respiration. I elicited the following further facts. She had been perfectly regular until her last period, which occurred a fortnight previously to the present attack, when she only lost a small quantity of blood, and this not until six weeks after her previous period. She had been very much troubled with constipation which had latterly become much worse. She also suffered from intense dysmenorrhœa, being utterly prostrated during the menstrual flow. A vaginal examination revealed marked fixation of the uterus, but otherwise it was negative. The rectum was empty. The patient was kept in bed and a small dose of calomel was administered. On the next morning there had been a slight watery action of the bowels. The temperature was 99°, the pulse was 100, the pain was more severe, and the vomiting continued, there being nothing distinctive about the vomit. I saw the patient later in the day, when her condition had not improved. A definite mass could be now felt below and to the left of the umbilicus. Vomiting continued, though not fæcal, and the bowels refused to act. There was no marked distension of the abdomen and no visible peristalsis was present. The pulse was still rapid but the temperature was normal. As the symptoms pointed to intestinal obstruction I decided to operate.

The patient was removed to a nursing home, and on the afternoon of the same day chloroform was administered and the abdomen was opened in the middle line below the umbilicus. On opening the peritoneal cavity a little serous fluid escaped. There were marked signs of an old peritonitis, the pelvic viscera being matted together. The cæcum had been dragged over and was fixed on the left side of the abdomen together with the appendix, which was firmly adherent to the cæcum in its entire continuity. The appendix

TABLE GIVING DETAILS OF 11 CASES OF ACUTE YELLOW ATROPHY OF THE LIVER.

| No. | Author. | Sex. | Years of age. | Predisposition. | Anæsthetic. | Operation performed. | Onset of Icterus. | Symptoms. | Result. | Necropsy. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Bastianelli. | ? | ? | ? | Chloroform. | ? | ? | Icterus, vomiting, delirium. | Died between second and tenth day. | Fatty degeneration of heart; nephritis; punctiform hæmorrhages. |
| 2 | ,, | ? | ? | ? | ,, | ? | ? | ,, ,, | ,, | ,, ,, |
| 3 | ,, | ? | ? | ? | ,, | ? | ? | ,, ,, | ,, | ,, ,, |
| 4 | Bandler. | M. | 42 | Alcohol. | Chloroform, 80 grammes. | Herniotomy, with resection of adherent omentum. | 1 to 2 days. | Icterus, delirium, coma; temperature 40° C. | Died fourth day. | Acute yellow atrophy of liver; icterus universalis; multiple hæmorrhage; nephritis. |
| 5 | Stocker. | F. | ? | ? | ? | Ovarian cyst with torsion and necrosis of pedicle. | ? | ? | Died. | Acute yellow atrophy. |
| 6 | Erlach (reported by Bandler). | F. | ? | Catarrhal icterus. | Billroth mixture. | Extirpation of uterus with morcellement of fibroma. | ? | Icterus, delirium. | Died. | Atrophica hepatis acutio rubra et flava. |
| 7 | Mintz. | M. | 40 | Alcohol. | ? | Appendicitis with infection. | 1 day. | Icterus, hæmatemesis, convulsions, fever. | Died sixth day. | Fatty degeneration of heart; parenchymatous nephritis; acute yellow atrophy of liver; erosions in duodenum and stomach. |
| 8 | Marten. | F. | 34 | Insanity: indigestion. | 70 c.c. chloroform, 40 minutes. | Extraction of 14 teeth; suppurating necrosis of jaw. | 1 day. | Icterus, vomiting, albumin casts in urine, delirium, yelling, coma. | Died fifth day. | Fatty degeneration of heart and kidneys; acute fatty degeneration of liver. |
| 9 | Cohn. | F. | 21 | Alcohol. | Chloroform. | Salpingo-ovarectomy for pus tubes. | 2 days. | Icterus, fits of yelling, delirium, albuminuria. | Died fifth day. | Cloudy swelling of heart, liver, and kidneys; icteric meningitis. |
| 10 | Ballin. | M. | 20 | Lead. | ,, | Appendicectomy in inflammatory stage; adhesions. | 2 days. | Icterus, delirium, bloody vomit. albuminuria, leucin and tyrosin in urine. | Recovery. | — |
| 11 | Campbell Horsfall | F. | 28 | None. | ,, | Intestinal obstruction due to adhesions. | 1 day. | Icterus, convulsions, vomiting, coma. | Died fourth day. | Acute yellow atrophy of liver. |

was quite healthy. On separating some adhesions a definite mass of about the size of a small orange could be felt on the left side of the abdomen. With great difficulty, owing to the many adhesions, the mass was brought into view and was found to consist of a loop of small intestine firmly constricted at its base by adhesions and tense from accumulated contents. The adhesions were divided and the mass immediately subsided. The intestinal wall had not suffered much damage and so was returned and the abdomen was closed in the usual way with the exception of a small wick of gauze for drainage. The patient stood the operation well and when seen the same night was comparatively comfortable with the exception of vomiting which was considered to be due to the anæsthetic. The vomiting continued the next day and the patient was very restless. Flatus had been passed freely and the temperature and pulse were normal. In the evening I noticed her conjunctivæ were icteric but I did not think it more than the ordinary simple jaundice sometimes occurring after an anæsthetic.

On the following morning the patient still continued very restless and the jaundice was now general. Vomiting continued, at first bilious but gradually becoming darker as though mixed with altered blood. The urine was bile stained. The wound was dressed and the gauze wick was removed, everything appearing satisfactory. There was no distension of the abdomen. As the vomiting continued the stomach was washed out and five grains of calomel, followed by one ounce of white mixture, were given by the mouth. Later there was a small action of the bowels and flatus passed freely. The jaundice gradually deepened, the patient became very drowsy, and the skin was dry and pungent, the face being a dusky red in comparison with the yellowishness of the rest of the body. There were convulsive movements of the limbs on both sides, followed by well-marked muscular rigidity. From this she gradually passed into a condition of coma vigil, was totally unconscious, had deep, stertorous breathing, and fixed, staring eyes with widely dilated pupils. The urine became diminished and was passed involuntarily. On percussing the liver the dulness anteriorly was markedly decreased. The vomiting became less as the patient's condition grew worse. The urine was examined for leucin and tyrosin crystals with a negative result, but albumin and bile pigments were present. A diagnosis of acute yellow atrophy was made. Venesection was at once performed and several pints of normal saline solution were injected into the median cephalic vein of the left side, but all to no purpose. The temperature gradually rose to 105° and death took place early the next morning.

I obtained permission from the relatives to make a partial post-mortem examination. I removed the liver after first ascertaining that there was no obstruction to the common duct. The liver was much reduced in size and its capsule was shrunken. The gall-bladder was filled with thick bile. A section of the liver showed areas of red softening, the surrounding parts being yellowish. The liver tissue was very friable. The ducts macroscopically were healthy. I reopened the operation wound and found everything healthy, there being no evidence of suppuration anywhere. A portion of the liver was sent to the pathological department of University College, Bristol, and was reported on as follows: "The specimen was very soft and friable. There is present a great degeneration of the liver substance, with deposition of pigment. The amount of newly formed fibrous tissue is small, thus indicating great acuteness of the disease. The appearances presented are those usually seen in acute yellow atrophy."

The notes of the above case are of more than usual interest, partly because of the extreme rarity of the disease and more so because of the fact that there are now on record 11 cases following an operation in which an anæsthetic has been given, and as such should be reckoned as a possible complication following operation. Modern text-books nearly all omit to mention it.

On referring to the table it will be seen that in all but three cases the anæsthetic used has been chloroform or some preparation of chloroform, so naturally the question arises, What influence does chloroform play in the cause of this condition? There is no record of any case where the condition has followed the administration of ether and from this fact alone it is highly suggestive that chloroform plays some part. Mintz, because he found the bacillus coli in the liver of his case, suggests a bacterial cause of the condition. That the colon bacillus should find its way into the liver in these cases is not to be wondered at, and its presence hardly warrants the assumption that it plays any active part in the condition. To my mind it is only a probable coincidence. The toxic theory of the disease is more tenable and helps to explain in some measure the cases following on chloroform administration. It is quite conceivable that the primary toxic agent is the result of faulty metabolism, and in regard to the cases under discussion the presence of chloroform is the crowning factor in the causation of the disease, by which I mean the chloroform intensifies in some way the already active poison.

There are many points of similarity between the symptoms and signs after death from chloroform and those of acute yellow atrophy. Chloroform when taken internally in a poisonous dose produces vomiting, coma, jaundice, and dilatation of the pupils. The post-mortem findings show degenerative changes in the liver cells, heart, and kidneys very similar to those found in acute yellow atrophy. That these lesions are caused by chloroform are amply proved by the experiments of Nothnagel, Toth, Unger, and others on animals. On the other hand, that chloroform is not an essential factor in the disease is proved by the greater majority of the cases of acute yellow atrophy which have occurred where there has been no chloroform used. It is a matter of conjecture whether the symptoms of acute yellow atrophy are part of a general toxæmia or whether they are the outcome of the active changes taking place in the liver. It seems that whatever the source of the poison, its chief effects are exerted upon the liver, heart, kidneys, and brain. That it is a severe cerebral poison is shown by the vomiting, delirium, muscular tremors, dilatation of the pupils, &c. In regard to the treatment much remains to be done. With the exception of one case in the table all the cases ended fatally. In my own case, although similar treatment as that used by Ballin was at once made on realising the condition, yet it was without avail. That cases do recover is quite conceivable considering that in many cases the liver tissue is shown by the microscope to be undergoing repair and it is quite feasible that the individual may be able to overcome the severe toxæmia.

Whatever the cause of this terribly fatal condition is, at present most is theory and conjecture without very much direct proof. Personally the most plausible theory to my mind is that it is a toxæmia arising from the gastro-intestinal tract, and should I ever have a similar case to deal with my treatment, in addition to diluting the poison by venesection and transfusion, would be by the exhibition of intestinal antiseptics.

Cheltenham.

---

# INTUSSUSCEPTION CAUSED BY AN INVERTED MECKEL'S DIVERTICULUM; EXCISION AND END-TO-END ANASTOMOSIS.

WITH REMARKS ON END-TO-END ANASTOMOSIS.

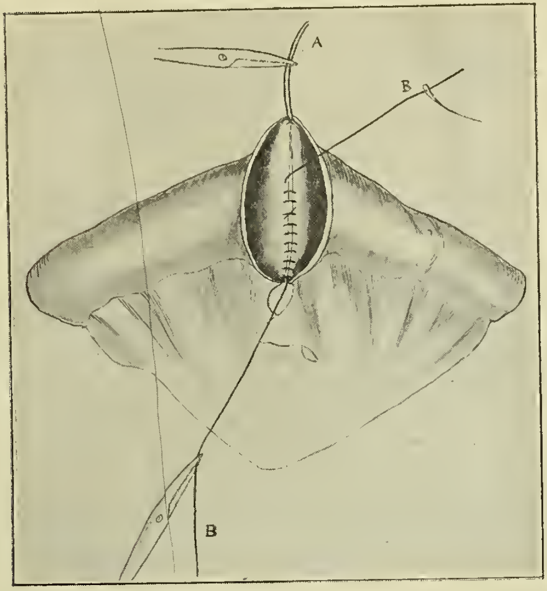
BY LEONARD A. BIDWELL, F.R.C.S. ENG.,
SURGEON TO WEST LONDON HOSPITAL, ETC.

A HEALTHY boy, aged three and a half years, had a severe hæmorrhage from the bowel in June, 1906. He was examined carefully per rectum by his medical attendant but nothing abnormal could be detected. The boy seemed to recover completely and remained well till about the middle of October when he began to have attacks of severe abdominal pain followed by vomiting; these came on at intervals of one week, commencing as soon as the child got up in the morning and passing off within an hour or two, after which he remained quite well till the next weekly attack. On Nov. 21st he had one of these attacks, which, however, did not pass off and was accompanied first by vomiting and then by persistent retching. He was seen by Major E. M. Pilcher, R.A.M.C., who examined him, and finding a hard tumour in the right lumbar and hypochondriac regions diagnosed an intussusception, and recommended an operation. I saw the boy at 5 P.M., six hours after the commencement of the attack. The child was evidently in considerable pain, his legs were drawn up, and his abdomen was rigid; there was no elevation of temperature, but the pulse-rate was 140. He had passed neither motion, blood, nor mucus, although a large enema had been given. The tongue was slightly dry and retching was constant. A well-marked tumour was felt in the right lumbar and umbilical regions but nothing abnormal was detected on rectal examination. The diagnosis of intussusception was fairly certain and I decided on immediate operation.

The patient being under chloroform I opened the abdomen between the outer fibres of the right rectus muscle and found an intussusception which involved the large intestine as far as the middle of the transverse colon. The intussusception was brought out of the wound and was reduced with little difficulty. It was then found that the invagination had commenced in the ileum about six inches from the cæcum. The bowel after reduction appeared black and œdematous but its peritoneal coat seemed all right. No polypus or other cause for the intussusception could be found. It was not thought desirable or necessary to shorten the mesentery or to fix the bowel to the parietes, so the abdominal wound was closed. The patient made a rapid recovery but one week after the operation he had a slight attack of pain rather resembling those which he had before. On Dec. 21st, when he was allowed to sit up and move about in bed, he had another severe attack of pain, and Major Pilcher discovered a well-defined tumour which, however, differed rather from the original one; it was more curved and nearer to the umbilicus and could be moved easily when the abdominal walls were relaxed. The child was in severe pain and was constantly retching. I saw the child a few hours later and reopened the abdomen. The intussusception was brought out of the abdomen and was found to involve the small intestine alone; it was discoloured and measured about four inches. I attempted to reduce the intussusception by kneading and squeezing but without success, so as time was of every importance in so young an infant I did not waste any time in prolonged attempts but decided to excise the mass. The bowel was divided transversely one inch above and one inch below the intussusception, the mesentery was ligatured, and the whole intussusception removed. The cut ends of the bowel were united in the manner to be presently described. The child suffered very little shock and made an uninterrupted recovery. He has had no further trouble. The portion of the gut removed measured eight and a half inches and at the apex of the intussusception was found an inverted and œdematous Meckel's diverticulum. This quite explained the impossibility of reduction.

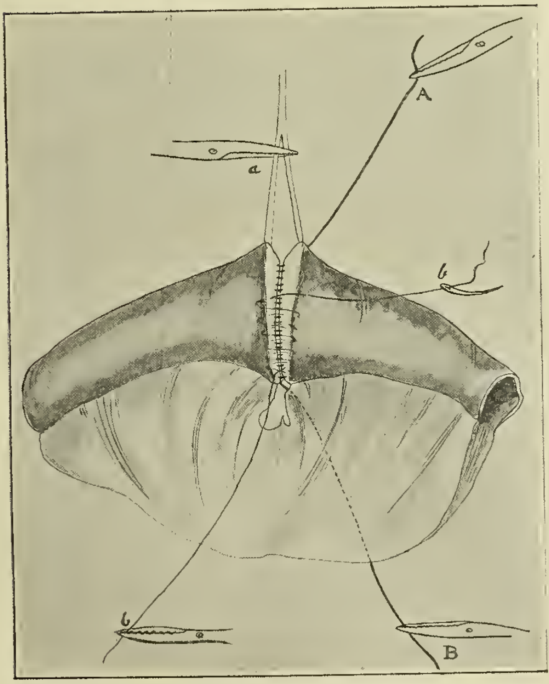
There are several points of interest in this case; first, the history of weekly attacks of abdominal pain lasting an hour or two and followed by complete recovery; these I believe to have been transitory intussusceptions, as I am sure that a number of cases of slight intussusception are relieved by nature. I have several times been asked to see children supposed to be suffering from intussusception and I have been given a history of a well-defined lump, together with vomiting and the passage of blood and mucus, but when I have examined the case I have detected nothing abnormal. I always consider such cases as cures of intussusception by spontaneous reduction. The second point of interest in this case is that neither blood nor mucus was passed per rectum and that obstruction was complete at once; these points are probably due to the position of the intussusception in the small intestine. The third point was that an inverted Meckel's diverticulum was the cause of the invagination; it is a somewhat unusual occurrence and explains the fact that the intussusception commenced in the small intestine. In connexion with the existence of the Meckel's diverticulum it is interesting to state that the child was born with an umbilical hernia which persisted in spite of pads and appliances and for which I did a radical cure when the child was one year old. A somewhat similar case has recently been reported by R. C. Coffey in the "Annals of Surgery"; it was that of a boy, aged seven years, who presented a similar history of attacks of abdominal pain commencing with melæna and occurring at intervals of one week. In this case the intussusception was entirely ileo-colic and at the operation (36 hours after the commencement of the attack) it was found to be gangrenous.

FIG. 1.



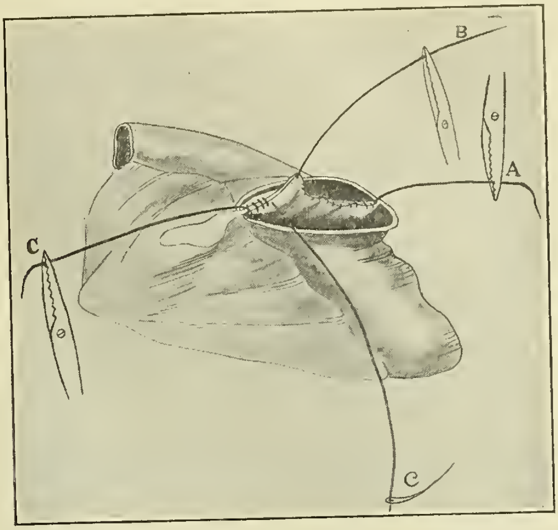
Passage of continuous catgut suture passing through all the coats.

FIG. 2.



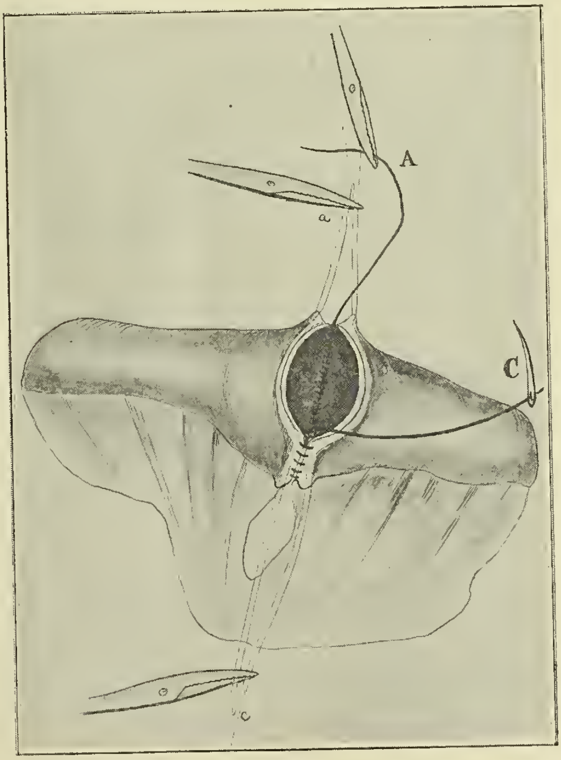
Passage of continuous Lembert suture, *b*; this has not been drawn tight for the sake of clearness. A, B, catgut stitches as in Fig. 1. *a*, Lembert stitch with its centre drawn out.

FIG. 3.



Uniting the portion of gut between the layers of the mesentery. A, B, catgut stitches as in Fig. 1. C, continuous catgut stitch.

FIG. 4.



Closure of second side with continuous catgut stitch C. Line of suture held taut by two Lembert sutures, *a* and *c*, which have had their centres pulled out so as to throw up a peritoneal ridge. A, end of catgut suture in Fig. 1.

At its apex was an inverted Meckel's diverticulum. The treatment was excision of the intussusception, closure of the ends of the bowel, and a lateral anastomosis. The last point is the age of the patient, as I think that recovery after excision of an intussusception is rare under the age of four years.

With regard to treatment, there is little question as to the advisability of early operation when reduction is not spontaneous or is not effected by an enema, since the prognosis depends principally upon the time which has elapsed before the operation. Simple reduction, after opening the abdomen, is effectual in most cases, and the operations of shortening the mesentery or of fixing the bowel to the parietes are liable to produce unpleasant symptoms later. In irreducible intussusception excision is the best treatment; this is combined with end-to-end anastomosis when the small intestine is involved, and with lateral anastomosis and closure of the divided ends when the invagination is ileo-cæcal. It is essential to operate on healthy gut and to divide the bowel at least an inch away from the intussusception on each side. It is also of the utmost importance that the operation should be performed with the greatest celerity.

As I do not know of any published description of the method which I employ for end-to-end anastomosis, I have had some drawings made which will make a description clearer. The method consists of a double continuous suture passed between guides, the adjacent pieces of intestine being held tightly stretched while the suture is passed. In this way contraction of the line of union is impossible. It is performed as follows. Two catgut sutures are inserted—one at the convex border, the other close to the mesentery. These are passed through all the coats of each piece of gut and are tied with their knots on the mucous surface. Both ends of one suture and the short end of the other are clamped, and by pulling these clamps apart the line of suture is tightly stretched; a continuous suture is then run from B to A with the long end of suture B. (Fig. 1.) It is then tied to A and the ends cut off. The piece of bowel is then turned over and two silk Lembert sutures are inserted, one at the convex border and the other close to the mesentery. The one close to the mesentery, *b*, is tied and its short end clamped, the one at the convex border is not tied but its centre is pulled out and it is then clamped (this throws up a definite ridge of peritoneum for the Lembert suture). The two clamps are now held apart so as to put the edges of the gut on the stretch, and with the long end of the suture, *b*, a continuous Lembert suture is run from *b* to *a*. It is tied and its ends cut off (see Fig. 2). The gut is then turned over again and another catgut stitch C, uniting the two ends of the gut on the opposite side of the mesentery, is passed through all the coats of each piece of gut and tied with its knot on the mucous surface. The short end of this is clamped, and this is held apart from the end of the first passed suture B; this makes taut the portion of the circumference of the two ends of bowel between the layers of the mesentery. A continuous suture is then passed from C to B and tied to the end B and then cut short (see Fig. 3). A Lembert suture, *c*, is then passed close to the mesentery and its centre pulled out and clamped. The clamps on the sutures *a* and *c* are then held apart (see Fig. 4) and a continuous catgut stitch is passed from C to A, its two ends being tied to the ends C and A respectively. The Lembert guides *c* and *a* are then tied and one end of *c* and both ends of *a* are clamped and held apart, while a continuous Lembert suture is passed from *c* to *a* with the long end of suture *c* and is tied to one end of *a*. A mesenteric stitch passed a quarter of an inch below the bowel completes the anastomosis.

The main advantage in this method is that the guides absolutely insure that corresponding portions of each piece of gut are united, and as the various portions of the gut are held tightly stretched by the guides during the insertion of the continuous sutures, these sutures can be pulled absolutely tight without any fear of producing subsequent constriction of the new opening. In passing each stitch of a continuous suture it is essential to pull the thread tight and to hold it firmly till the next stitch is passed. This operation as described may appear complicated but it is really simple and it can be done very rapidly (in the case recorded in 14 minutes). It dispenses with the use of all apparatus, such as bone bobbins and clamps, and it combines the advantages of interrupted sutures with the quickness of continuous sutures.

Upper Wimpole-street, W.

---

# A CASE OF PYÆMIA DUE TO THE INFLUENZA BACILLUS, WITH MULTIPLE ARTHRITIS AND MENINGITIS.

BY LEONARD S. DUDGEON, M.R.C.P. LOND.,
BACTERIOLOGIST TO ST. THOMAS'S HOSPITAL; JOINT LECTURER ON GENERAL PATHOLOGY AND LECTURER ON SPECIAL PATHOLOGY IN THE MEDICAL SCHOOL; DIRECTOR OF THE HOSPITAL LABORATORIES;

AND

J. E. ADAMS, M.B., B.S. LOND., F.R.C.S. ENG.,
RESIDENT ASSISTANT SURGEON AND LATE SURGICAL REGISTRAR, ST. THOMAS'S HOSPITAL, LONDON.

WE have thought it advisable to publish a detailed account of this case, inasmuch as we have been unable to find any record of a similar instance of infection due to this bacillus.

The clinical history was as follows. The patient was a female, aged 10 months, born of healthy parents. There was no history of miscarriages. There were five other children in family and all enjoyed good health. There was no history of any recent infectious fever or illness suggestive of influenza. For two months the mother had observed that this child was fretful and that she was not thriving, though she did not appear to be seriously ill, but at the end of the first month it was noticed that the left elbow caused the child pain, and three weeks before admission to the hospital the joint was discovered to be swollen. The swelling was first situated over the head of the radius and the patient was first seen on April 8th last, when there was a tender puffy thickening over the radial head; the following day the swelling had increased in size and fluctuation was readily obtainable; movements at the elbow-joint were not limited, nor were those of pronation and supination, though these appeared to cause slight pain; the case was thought to be one of epiphysitis of the radius, and the mother was told to bring the child for admission. This she failed to do until a week later, when the local state of affairs showed rapid progress of the disease and the child's general condition was very grave. On April 17th, the whole region of the left elbow-joint was swollen, and on the outer and posterior aspect there was a fluid swelling close beneath the thinned and discoloured skin. The skin over the abscess was purplish in colour and not noticeably hot. Movements both at the elbow-joint and at the superior radio-ulnar articulation were abnormally free and caused well-marked grating; in fact, the elbow presented the characters of a flail joint. A skiagram was taken but this revealed no changes in the bones, a fact which will be referred to later. With the exception of some thickening in the neighbourhood of the right hip-joint, the remaining articulations appeared to be unaffected. The general condition of the child was profoundly altered from that observed a week previously, for she now showed the signs of meningitis with marked wasting, head retraction, increased knee-jerks, and frequent vomiting. The pupils were somewhat dilated but they reacted to light, and no squint was observable. No wound or sore was present on the child's limbs. The temperature was 101° F., the pulse-rate was 136, and the respirations were 44. On the day after admission it was decided to open the abscess on the outer side of the elbow-joint, and no anæsthetic was needed for this as the pus was close beneath the distended skin. Thick, creamy, yellow, odourless pus was evacuated and the cavity was found to lead directly into the elbow-joint; a counter opening was made on the inner side of the elbow and the joint was washed out with saline solution and drained with a rubber tube. The pus was preserved in a sterile test-tube for bacteriological investigation.

The child's condition steadily grew worse, there was persistent vomiting, the head retraction became more marked, and a squint was observed on the third day. On the evening of this day the temperature reached 105°, the pulse-rate was 160, and the child had slight diarrhœa. The temperature fell to 100° on the next morning but the condition was not improved and lumbar puncture was performed with a view to the relief of the meningeal symptoms. This, however, was not successful, as the needle only withdrew a drop or two of cerebro-spinal fluid, and the child died about four hours later. This fluid was also preserved in a sterile tube.

*Report of post-mortem examination (performed by* Dr. W. O.

Meek).—The left elbow-joint had been freely opened, but it still contained some pus, and this was present also in the intermuscular planes outside the joint. The articular head of the radius possessed no cartilage cap and its end was rough and necrotic; there was also superficial necrosis of the humerus in the olecranon fossa, while the articular cartilage of the ulna was eroded and the subjacent bone showed commencing disease. There was a large abscess in connexion with the right hip-joint, which passed upwards and then forwards over Poupart's ligament into the extraperitoneal space in the iliac fossa, where it formed an encapsulated mass of the size of an orange, containing six ounces of thick, creamy, yellow pus. The neck of the femur showed necrosis and the articular cartilage was eroded. The bone at the bottom of the acetabulum was bare and necrotic, though there was no perforation. The serous cavities of the trunk were healthy. The intestines showed slight congestion of the lymphoid tissue. The liver and kidneys were pale, while the spleen was large and firm and of dark purple colour. The lower lobes of the lungs showed recent broncho-pneumonia with collapse. The heart valves were healthy but the myocardium was pale. The lymphatic glands both in the thorax and abdomen were large and reddened. The brain surface was flattened and covered with areas of purulent exudate, particularly along the course of the vessels. This condition was also very markedly present over the base of the brain, where there was excess of cerebro-spinal fluid. The choroid plexuses were infiltrated with pus. The grey matter of the cortex was softened and the lateral ventricles were distended with turbid fluid, while the third and fourth ventricles were little affected. No evidences of tuberculosis were found in the body.

*Bacteriology.*—Film preparations were made from the thick pus which was obtained from the elbow-joint. The microphages, which were by far the most common variety of cells in the pus, were full of minute rod-shaped bacilli which failed to retain Gram's stain. The pus was smeared on human blood agar and nasgar and incubated at 37° C. A good growth of minute, transparent colonies was obtained on the surface of both media. Each colony consisted of small Gram-negative bacilli. Cultivations which were made in liquid media remained sterile. Lumbar puncture was performed just before death and a few drops of turbid cerebro-spinal fluid were obtained. A pure culture of the influenza bacillus was grown from this fluid. A bacteriological examination was made after death with the following result. Hip-joint.—A pure culture of the influenza bacillus was obtained from the pus present in this articulation. Spleen.—The splenic juice was spread on tubes of blood agar and nasgar. A delicate growth of the influenza bacillus was obtained in each instance. Lung.—In the patches of broncho-pneumonia minute rod-shaped bacilli were found in some of the polymorphonuclear neutrophiles and also diplococci. No cultivations, however, were made from the lung tissue.

*Remarks.*—The primary lesion appears to have been epiphysitis of the upper extremity of the radius, but there was no evidence of any sore or wound on the limbs such as is sometimes met with in cases of acute epiphysitis and osteomyelitis due to the staphylococcus aureus. There was no history obtainable of any influenzal affection in any other member of the family, and apart from the fact that the child was not thriving for one month before the onset of this disease her condition caused no anxiety. When first seen the case appeared obscure and examination by x rays failed to throw further light on the exact lesion. This was doubtless due to the absence of ossification in the epiphysis and the very small amount of destruction of bone at the time this examination was made. At the post-mortem examination, however, there was irregular pitting at the upper end of the radial shaft which would have been rendered evident had a second skiagram been taken. The disease proceeded with great rapidity both in the elbow joint and also as regards the systemic infection, and the sequence following the radial epiphysitis appears to have been first the elbow-joint and then the right hip-joint, followed very closely by the diffuse meningeal infection, and terminating in acute broncho-pneumonia. From all these situations, except the lungs, the influenza bacillus was obtained in pure culture. The splenic juice gave a similar result, while microscopic sections of the lung showed a bacillus morphologically identical present in the polymorpho-nuclear neutrophils. The pus found in the elbow and hip joints and over the brain surface possessed no distinctive characters and has been described above.

An investigation of the literature on the subject of influenzal arthritis has shown no similar instance of multiple suppurative arthritis due to the influenza bacillus, and in very few cases of what is termed "post-influenzal arthritis" have cultures been taken, and so far as we can ascertain these have yielded a negative result. Nor have we been able to find records of a case of pyæmia proved bacteriologically to be due to this bacillus.

St. Thomas's Hospital, S.E.

# RECORD OF CHANGES OBSERVED IN THE BLOOD COUNT AND IN OPSONIC POWER OF A MAN UNDERGOING A PROLONGED FAST.

By FRANCIS J. CHARTERIS, M.B. Glasg.,
ASSISTANT TO PROFESSOR OF MATERIA MEDICA, GLASGOW UNIVERSITY; DISPENSING PHYSICIAN, WESTERN INFIRMARY, GLASGOW.

The following observations were made upon a fasting man, B., who for the purposes of such scientific observations fasted for fourteen days. The primary object of the fast was to afford Dr. E. P. Cathcart an opportunity of examining the urinary excretions. The results of his observations have already been communicated to the Physiological Society. The fast took place in my house and I availed myself of the opportunity to keep a record of the blood changes. Similar observations have been made by Luciani[1] on the fasting man Succi and by Senator and Müller[2] on Cetti and Breithaupt. Neither of these records, however, give any information about the relative changes which take place in the white corpuscles though they note the number of red corpuscles, the percentage of hæmoglobin, and the number of white cells. Differential counts were made by Okintschitz[3] on rabbits deprived of food and water. Observations on the effect of starvation on resistance to infection have been published by Canalis and Morpurgo[4] and Roger and Josué.[5] An exhaustive index of the literature on inanition is given by Weber.[6]

Our experiment was divided into three periods. In the foreperiod the man was kept upon a constant diet and was in nitrogenous equilibrium. The fasting period lasted fourteen days. During it absolutely no food was taken, but a limited number of cigarettes was permitted which never exceeded two in the day. During the 24 hours one litre of ordinary tap water was consumed at the convenience of the subject. To obviate fraud the man was carefully watched day and night, and the analysis of the excretions show that the fast was genuine. At the close of the fasting period he was put upon a diet devised so as to contain no nitrogen. At the commencement of the experiment the man was in good health. His muscular development was excellent and he was not abnormally stout. When the fast began he weighed 10 stone 5½ pounds and at the close of the fasting period his weight was 9 stones 2 pounds 6½ ounces. The weighing took place at 9 o'clock in the evening when the patient was naked and just after the bladder had been emptied. During the fast the man remained in fair condition. There was a steady loss in weight and he became gradually less active. The mental condition did not appreciably suffer. He seemed to sleep soundly but complained that he dreamt of various kinds of food. As the fast proceeded he suffered very much from coldness and had difficulty in keeping himself warm.

The following table (Table I.) records the alterations which took place in the pulse, temperature, blood-pressure, and the blood condition during the fast. The temperature and blood-pressure were taken at the same hour in the evening, the latter being measured by Martin's modification of Riva Rocci's sphygmomanometer. The hæmoglobin was estimated by Gowers's hæmoglobinometer, and the corpuscles were counted with a Thoma Zeiss instrument. The films were stained with Leishman's and Jenner's stains.

The result of my observations may be briefly summarised as follows. The pulse slowed gradually as the fast proceeded. The man was aware of this fact from previous

---

[1] Das Hungern, 1890.

[2] Virchow's Archiv, Band cxxxii.

[3] Archiv für Experimentelle Pathologie und Pharmakologie, Band xxxi.

[4] Fortschrift der Medizin, 1890.

[5] Comptes Rendus de la Société de Biologie, 1900.

[6] Ergebnisse der Physiolog. Biochemie, 1902.

TABLE I.—*Showing alterations in Pulse, Temperature, Blood pressure, and Blood Condition.*

| Day. | | Pulse. | Temperature. | Blood pressure. | Hb. | Leucocytes. | Red cells. | Differential count 250–400 cells. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Tripartite. | Lymphocyte. | Large mononuclear. | Eosinophile. | Transit. | Basophile. |
| 16/1/07 | | 77 | — | 108 | 110 | 5,300 | 5,600,000 | 51* | 30 | 11·6 | 1 | 6 | — |
| 17/1/07 | | 70 | — | 108 | — | — | — | 62† | 23 | 10 | — | — | — |
| 18/1/07 | Fast. | 65 | 90° | 96 | 110 | — | — | 75 | 11·7 | 7 | 2 | 4 5 | — |
| 19/1/07 | | 68 | — | 98 | 110 | — | 7,200,000 | 61 | 23 | 9 5 | 2 | 3 | 1 |
| 20/1/07 | | 65 | 97 6° | 98 | 108 | 10,000 | 5,600,000 | 70 | 18 | 8 | 2 | 1 | 1 |
| 21/1/07 | | 64 | 97·4° | 92 | 108 | — | 6,400,000 | 63 | 22 | 12 | 2 | 2 | — |
| 22/1/07 | | 66 | 97 2° | 94 | 109 | 11,148 | 6,160,000 | 70 | 14 | 9 | 2 | 4 | — |
| 23/1/07 | | 67 | 97 2° | 88 | 108 | 14,000 | — | 77‡ | 9 | 7 | 3 | 2 | 1 |
| 24/1/07 | | 65 | 97° | 90 | — | 14,000 | 5,600,000 | 69 | 10 | 12 | 4 | 4 | 2 |
| 25/1/07 | | 64 | 97·2° | 88 | — | — | — | 60 | 26 | 6 | 5 | 2 | 1 |
| 26/1/07 | | 62 | 97° | 92 | 103 | 9,000 | 5,600,000 | 65 | 18 | 9 | 5 | 1 | 1 |
| 27/1/07 | | 60 | 97° | 88 | 98 | — | 5,000,000 | 60 | 25 | 10 | 5 | — | — |
| 29/1/07 | | 58 | 97° | 90 | 95 | 10,000 | — | 60 | 18 | 16 | 3 | 2 | — |
| 30/1/07 | | 60 | 97 2° | 88 | 96 | 9,000 | 5,200,000 | 56 | 26 | 13 | 4 | 1 | — |
| 31/1/07 | | 59 | 97° | 86 | — | — | — | 66 | 16 | 9 | 7 | 1 | — |
| Before food. | | | | | | | | | | | | | |
| 3/2/07 | After fast. | — | — | — | 93 | — | 5,400,000 | 74 | 14 | 9 | 2 | 1 | — |
| 4/2/07 | | 62 | — | 101 | — | — | — | — | — | — | — | — | — |
| 6/2/07 | | — | — | 104 | 94 | 7,000 | 6,400,000 | 62 | 24 | 11 | 3 | — | — |
| 8/2/07 | | 72 | — | — | 102 | 7,800 | 5,200,000 | — | — | — | — | — | — |

* Two hours after food. † Five hours after food. ‡ Count made from an unsatisfactory film.

fasts. The pulse became softer and weaker but remained regular in rhythm. The arterial pressure gradually sank so that at the end of the fast the fall amounted to almost 25 per cent. of the normal reading. On taking food this fall was soon made up, and by the end of the first week of feeding the pressure was practically normal again. Luciani, using a Von Basch instrument, found that the pressure on the radial artery of Succi fell from 22 to 12 cubic centimetres of mercury during a fast of 30 days. The blood changes are not very definite. For the first few days the hæmoglobin remained almost unaffected but towards the end of the first week it commenced to fall and thereafter fell steadily. This reduction persisted for several days after food was taken. The red corpuscles varied somewhat from day to day, but on the whole no striking effect was produced. The stained films showed practically no alteration in size, shape, or staining properties. In the last four days a few nucleated red corpuscles were observed. Neither Luciani nor Senator record having observed nucleated red corpuscles, but both agree that the hæmoglobin and number of the corpuscles vary from day to day. Senator accepts Luciani's suggestion that the number of the corpuscles probably does not alter much, but that the variation depends really upon the amount of fluid consumed. In Luciani's case the water consumption varied from day to day and he was able to show that the blood condition corresponded to the water consumption. In my patient the daily consumption of water remained constant, but the man was allowed to suit himself when he took the water except on certain days. The hæmoglobin did not correspond with the red blood count and probably indicates a true diminution. In the case of Succi, Luciani found that in the first week the white cells fell from 14,540 to 860, while the leucocytes became smaller in size. Thereafter the number rose again to 1500 and remained about this figure, while the cells regained their normal size and appearance. The Senator-Müller counts record a much less profound diminution. My enumeration, on the other hand, indicates a slight leucocytosis. There was certainly no manifest diminution in size of the individual cells. The differential counts are chiefly remarkable for the gradual increase in the percentage of eosinophyl cells. I cannot find any note about this point in human blood, but Okintschitz notes a similar increase in the case of starved rabbits. He found that the polymorpho-nuclear cells and small lymphocytes diminished while the eosinophyls and large mononuclear cells increased during absolute starvation with deprivation of water. The opsonic index of the blood for staphylococcus and bacillus typhosis was also investigated. Table II. shows the result.

TABLE II.

| Date. | — | Staphylococcus. | | Bacillus typhosus. | |
|---|---|---|---|---|---|
| | | B. | F.J.C. | B. | F.J.C. |
| 16/1/07 ... ... | Before fast ... | 7·5 | 8·7 | 1·5 | 1·9 |
| 18/1/07 ... ... | Fast. ... ... ... | 5 0 | 6·0 | | |
| 21/1/07 ... ... | ... ... ... | 3 0 | 3·0 | 6·0 | 6·0 |
| 23/1/07 ... ... | ... ... ... | 1·9 | 1·8 | | |
| 24/1/07 ... ... | ... ... ... | 2·8 | 1·6 | 2·0 | 1·8 |
| 28/1/07 ... ... | ... ... ... | 0·8 | 0·76 | | |
| 29/1/07 ... ... | ... ... ... | 0·6 | 0·7 | 0 6 | 0·6 |
| 3/2/07 ... ... | After fast ... | 2 0 | 1·0 | | |
| 6/2/07 ... ... | | 11·0 | 12 0 | | |

The figures given represent the average number of organisms taken up by a polymorpho-nuclear cell. To obtain this average 30 cells were counted. A fresh emulsion was used each day and this explains the variation in the average number. As a rule the blood was drawn off in the afternoon and in each case was tested against my own serum drawn off at the same time and examined under similar conditions. For estimating the power of the sera my own washed corpuscles were used. The general result is that no alteration can be detected during the fasting period. The serum in my patient remained as active as my own. This is interesting as the man informed me that he had never suffered from a cold or other infection during his various fasts, though he always felt very chilly and had difficulty in keeping himself warm.

I have not been able to find much work bearing upon this point. Canalis and Morpurgo investigated the effect of starvation on pigeons and rats to determine whether they were thereby rendered more susceptible to anthrax. They found that pigeons lost their natural immunity to anthrax after fasting 6-7 days but regained it again on taking food. Hens previously rendered immune by injections of anthrax cultures did not lose this acquired immunity through starvation. Similarly rats remained immune despite starvation. On the other hand, untreated hens starved for from three to seven days succumbed more readily to inoculated anthrax. Roger and Josué tested the resistance of rabbits against the bacterian coli. They found that absolute starvation for 3-7 days followed by feeding gave an increased resisting power compared with normal control animals. They hold that this depends upon the increased proliferation of the bone marrow which they have shown takes place during starvation.

Glasgow.

# SOME CONSIDERATIONS ON EPIDEMIC CEREBRO-SPINAL FEVER.[1]

By WILLIAM WRIGHT, M.D. GLASG., D.P.H. CANTAB.,

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH, GLASGOW.

ALTHOUGH more or less extensive epidemics of cerebro-spinal fever have occurred in Europe for several hundred years, it was only recognised for the first time as a distinct disorder by Vieusseaux in Geneva in 1805. About the same time an epidemic occurred in the New England States and continued to prevail there for nearly a quarter of a century. Owing to the almost constant presence of a rash of a petechial character in those outbreaks in America the misnomer "spotted fever" was applied to it which ever since has been the source of much confusion not only to those members of the medical profession not familiar with it but also to the general public. It appeared in epidemic form in the South of France in 1837, spreading later to the North, numerous outbreaks occurring in that country until the year 1842. From 1846 to 1849 many fresh outbreaks occurred in France, when later it became widely diffused in Southern Italy. It made its appearance in Sweden and Germany in 1854, reaching its height in 1864. Dublin, Belfast, and Liverpool suffered from it in 1845 and again in 1866. Of late years it appears to have been widely diffused throughout the United States, where its area has extended from Canada to the Gulf of Mexico and from the Atlantic to the prairie States of Minnesota and Iowa. It prevailed during 1898–99 in a mild form, according to Osler, in 27 States of the Union and 1000 deaths occurred in New York city alone in the year ending February, 1905. Several outbreaks also occurred in Central Europe throughout 1905 and a number of doubtful cases in Northamptonshire early in the same year. The Local Government Boards of England and Scotland issued circulars to local authorities in September, 1905, calling attention to its existence in this country.

*Glasgow epidemic.*—The first authentic case occurred in Glasgow in March, 1906, and was removed to Belvidere Hospital. Numerous cases occurred thereafter and on account of its continued prevalence the corporation deemed it advisable to include it in the list of notifiable diseases. This took effect in Glasgow in August, 1906. From March to December, 1906, 205 cases came under observation by the health department here. Numerous cases occurred in Belfast and the disease was prevalent there in the spring of 1907. Early in the year I expressed the opinion that the disease was much more widespread than was generally recognised—in other words, that it existed in other cities and in all probability was being mistaken for other diseases. Since then cases have occurred in many towns in Scotland and in several in England. In investigating previous epidemics one is struck by the irregularity of their distribution and their peculiar commencement and cessation. The outbreaks appear in all instances in disconnected places and no well-defined channels of spread can be made out. Epidemics are generally localised and their duration variable. The same may be said of the outbreaks which are affecting this country at present. In those particulars, therefore, it differs from any of the acute infectious diseases, as, for example, small-pox, in which a definite epidemic curve can be traced and a connexion established from case to case.

*Race and sex.*—There is no racial disposition and the sexes are equally affected. The Glasgow figures for 1906 are: Out of a total of 205 cases, 121 were males and 84 females.

*Age distribution.*—Of 1267 fatal cases investigated by Hirsch 71 per cent. were under 15 years of age, 26 per cent. were between 15 and 40 years, and 3 per cent. were over 40 years. Of 105 consecutive cases admitted to New York Hospital in 1905:—

| | | | | |
|---|---|---|---|---|
| 9% | occurred | at ages | 1 year and under (youngest 4 months). | |
| 38% | ,, | ,, | from 1 to 5 years | 82% between 1 and 15 years. |
| 23% | ,, | ,, | ,, 5 ,, 10 ,, | |
| 21% | ,, | ,, | ,, 10 ,, 15 ., | |
| 6% | ,, | ,, | ,, 15 ,, 20 ,, | |
| 3% | ,, | ,, | ,, 20 ,, 25 ,, | (oldest 25 years). |

Of 205 cases which occurred in Glasgow in 1906:—

| | | | |
|---|---|---|---|
| 18% | were | under | 1 year (youngest 2 months). |
| 12·2% | were | between | 1 and 2 years. |
| 5% | ,, | ,, | 2 ,, 3 ,, |
| 8% | ,, | ,, | 3 ,, 4 ,, |
| 12% | ,, | ,, | 4 ,, 5 ,, |
| 20% | ,, | ,, | 5 ,, 10 ,, |
| 10% | ,, | ,, | 10 ,, 15 ,, |
| 4% | ,, | ,, | 15 ,, 20 ,, |
| 4% | ,, | ,, | 20 ,, 25 ,, |
| 5% | ,, | over | 25 years (oldest 52 years). |

Some epidemics have confined themselves to adults in early middle life, as, for example, the Italian epidemic 1840–45 and the Alabama epidemic. Other instances of this peculiarity are the epidemics in camps and garrisons. Under one year it is more common than is generally supposed, and I am of the opinion that deaths certified as acute gastritis, teething and convulsions, and probably also summer diarrhœa may have been in some instances due to this disease.

*Immunity.*—Several rare instances of a second attack have been noticed in previous epidemics, and relapses may occur after the patient has apparently made a good recovery. The micro-organism may thus be capable of remaining latent in the cerebro-spinal fluid for a variable length of time and then take on renewed activity and virulence. No secondary attacks have occurred amongst any of the Glasgow cases. Relapses have taken place in a few instances.

*Communicability* appears to be very little. Previous epidemics have been recorded where a large proportion of the occupants of a jail, camps, and barracks have been affected. Several cases also have occurred in the same house sickening at or about the same time but the contagion seldom seems to linger and infect other occupants except in rare instances. Further, members of a family sleeping in the same bed with a patient usually escape, and medical men, nurses, and those who attend the sick are rarely affected. Of 205 cases which occurred in Glasgow in 1906 and 109 in January, 1907, in only 14 instances did two cases occur in one household and in two instances three cases.

*Channels of infection.*—No definite statement can be made at present. It is suggested that because a similar micro-organism has been found in the nasal secretions of many of the patients and others who have been in contact with the sick that this is the probable means of ingress. It is thought by others that as occasionally a history of a "fall on the head" is furnished, the filaments of the olfactory nerve having been injured or separated from the surrounding mucous membrane just as those filaments enter the cribriform plate of the ethmoid, a means of ingress is thus furnished. Others also support the view that it may find its way either by the veins or lymphatics in that region or by way of the frontal sinus, the tonsils, or the bowel. Nothing definite, however, has been done towards substantiating any of those theories. It is true that agglutination tests more or less satisfactory have been done with the blood of a recognised case or immunised animal with diplococci obtained from the nose, but much further research is necessary to arrive at anything like a definite conclusion on the matter. Since reading this paper, however, the micro-organism has been recovered by post-nasal swabbing from a fair proportion of the throats of "contacts" and it is assumed that those "contacts" may act as "carriers" (like diphtheria carriers) of the disease. It is to be noted, however, that of those "contacts" which did furnish a positive result after swabbing in Glasgow not one of them later developed the disease.

*Climatic conditions.*—The majority of epidemics occur in the winter and spring but some occur during warm weather. The Glasgow epidemic started in March, a cold month in this country, and continued in a mild form throughout the summer till the following December, when the cases became more numerous. The Belfast epidemic also occurred during the cold season. It has to be noted, however, that the Glasgow cases did not cease during the summer. It has been stated by eminent medical authorities that in all probability the cold season would see the end of this highly fatal malady in so far as this country was concerned. The history of previous epidemics in other countries does not support this view and it would appear that heat, cold, and moisture have little effect in influencing its activity. True, this summer (1907) there has been a considerable fall in the number of cases in Glasgow, but the disease is by no means stamped out and an increase may be expected during the winter.

*Suggested sources of infection.*—Randolph says that hygienic conditions do not play a very important rôle. In Glasgow for the most part all the cases have occurred amongst the poorer classes (one and two room and kitchen houses), but seldom amongst the very dirty or uncleanly, and I am not inclined to the view that insanitary conditions generally play a prominent part in the spread of this disease. Soil and situation are likewise of no importance. It is true one is occasionally furnished with a history that the child is in the habit of playing amongst the dirt, as children are wont to do, and of occasionally placing their dirty fingers in their mouths or conveying thereto articles of food, buttons, cigarette ends, dumb teats, &c., from the ground or floor, but this occurs by no means on all occasions and would not explain the sickness of infants solely breast-fed, older children, adolescents, and adults.

---

[1] A paper read before the Eastern Medical Society, Glasgow.

I have seen a large proportion of the cases in Glasgow and in all instances every possible contributory factor has been carefully inquired into. The food and habits of each member of the family in which a case has occurred have been investigated and nothing of importance has been elicited. Even bananas and other kinds of fruit and sweets have borne a similar fate. Cats, dogs, and canaries have been encountered occasionally in the houses of the sick, but no connexion could be established. It has been suggested that old clothes may carry infection. There is no evidence in support of this view in connexion with the Glasgow cases, and pawn tickets have seldom been found in any of the houses during the process of disinfection. Professor Symmers[2] noted that in five cases which ended fatally the small intestine was reddened with capillary engorgement and the solitary follicles were enlarged and in places bright red, revealing the condition often seen in acute pneumonia and in Asiatic cholera; and the mesenteric glands were enlarged and congested. It is not suggested that this organism is constantly present in the bowel, but it may be an occasional habitant therein, and certainly the post-mortem conditions above mentioned would seem to indicate that it might be isolated from the fæces of recognised cases if sufficient care and labour be expended. The meningococcus has been isolated from the blood of recognised cases of the disease by Elsner and others. It may therefore be found in the urine and possibly also the fæces. It is well known that diplococci are normally present in the alimentary tract of man, horses, and other animals; a little further research in this field might furnish more light on the subject. In connexion with those families in which multiple cases did occur in Glasgow the carelessness in dealing with fomites and fæcal discharges was strikingly manifest. The fomites in those instances impressed one as the chief source of infection. The theory which I have advanced resolves itself into this query: Is the meningococcus a constant or occasional habitant of the bowel of man, horse, or other animal, assuming pathogenic properties under certain conditions and especially so in abnormal situations such as the meninges? We already know several instances of such—e.g., bacillus coli, bacillus enteritidis sporogenes, streptococci and staphylococci, &c.

*Predisposing causes.*—Coryza has been observed to be present previously to onset of illness in some instances and tonsillitis rarely. In several instances throughout the illness a definite watery and sometimes muco-purulent nasal discharge occurred, but in a large majority of cases the nasal tract was rather dry than otherwise.

*Incubation period.*—Although this has been conceded by some authorities to extend to three or four days it may be accepted as very difficult to determine. In point of fact no very definite statement can be made on this subject. Of the cases which occurred in Glasgow, in which two or more persons sickened in one family as already stated, the interval between sickening and removal to hospital of the first case and sickening of the second varied between one and ten days. It does not follow, however, that this varying interval is to be accepted as the incubation period of cerebro-spinal fever, because it is just possible that the second case may have obtained its infection from the same source and at the same time as the first case, although the onset of the disease appeared at a later period. In support of this view it is already known that the micro-organism has been found in the nasal secretion of healthy attendants on the sick who subsequently did not develop the disease, and, further, that it may be that in those who did develop it a variable time was necessary for the passage of the micro-organism from the nose to the meninges.

*History and symptoms.*—The history usually furnished is to the effect that the child went to bed well and wakened early in the morning with a highly nervous condition, complaining of severe frontal headache and vomited, or having been previously quite well took a rigor and vomited. Vomiting and a severe frontal, occasionally occipital, headache are invariably the first symptoms. Vomiting is usually more or less continuous throughout the first and sometimes the second and third days. The onset of illness, therefore, is frequently sudden, may or may not be preceded by rigor, and is followed by a violent discharge of nervous symptoms. In fulminant cases, from a condition of extreme restlessness, irritability, and general hyperæsthesia, the patient becomes delirious, and, in rare instances, maniacal, young children frequently developing convulsions and dying whilst in them or after coma has set in. The duration of illness in those cases has been as short as five hours, occasionally 24 hours, and usually a few days only. A large number of cases, however, are not so acute, in that the stage of irritability is more prolonged, lasting over several days, and they furnish a more striking picture of meningeal mischief. The symptoms then seen embrace grinding of the teeth, twitching of the angles of the mouth, one arm or hand, or convulsive movements of both hands and legs, "rolling of the eyes, squint, irregularity of the pupils (contracted or dilated) which may not, or only sluggishly, respond to light, photophobia, and diplopia. Conjunctivitis is by no means so common as some observers suggest and when present is usually accompanied by a slight purulent discharge resulting occasionally in matted eyelids. Nystagmus occasionally is met with. The tongue is usually very foul and occasionally the teeth are covered with sordes."

Tinnitus aurium is sometimes complained of in older subjects. Difficulty in hearing properly or absolute loss of hearing and sometimes unbearable pain in the ear or discomfort at the slightest noise are all encountered. The joints, especially the knee-joints in rare instances, are swollen and painful, and in the absence of other well-marked meningeal symptoms a diagnosis of acute rheumatism might be made. Perspiration of the head is sometimes noticed, especially in rickety children. Patients sometimes moan and shriek with pain, especially when touched. Retraction of the head is very common; in milder cases, however, only tension of the muscles of the back of the neck is to be observed and is well brought out when an attempt is made at bringing the head forward in order to touch the breast with the chin. Severe pain in the back of the neck is then complained of and the muscles are seen to stand out in relief. Occasionally also in so doing spasmodic contractions and muscular tremors are set up elsewhere and rarely convulsions. All degrees betweeen slight tension of the neck muscles to marked cervical opisthotonos are met with in different cases.

It is to be remembered that infants and young children usually lie with the head set well back in health and it is just possible that in asking this question from the mother the physician might readily be misled. It is always advisable therefore to take nothing for granted and to examine the neck for yourself. Tenderness of the spine is also a common feature of this disease and in severe cases opisthotonos may be present. In very severe cases this may be so marked, as after placing the child on his back on a table it will be seen that the body rests only on the occiput and buttocks, the arch of the spine being so great as to permit the hand readily between it and the table without touching. I recollect seeing a case with the occiput set firmly against the buttocks.

*Characteristic attitude.*—The patient usually lies on the side with the head retracted, forearms flexed, occasionally exaggerated pronation, thighs flexed upon the abdomen and the legs on the thighs. It is to be noted, however, that this perfect picture is far from being a common one, and in ordinary less severe cases the child may assume many attitudes throughout the day during its restless periods. The reflexes are variable, often exaggerated, sometimes absent. Usually ankle clonus is absent but by no means always.

*Kernig's sign.*—Much importance has been attached to this phenomenon, which, however, is common to all forms of spinal meningitis. When the hip-joint is semi-flexed in health the leg can be extended upon the thigh nearly in a straight line, but if spinal meningitis be present the attempt to extend the knee produces painful spasm of the hamstring muscles. Fever is always present but may be intermittent.

---

[2] Professor Symmers: THE LANCET, Feb. 23rd, 1907, p. 508.

There is no characteristic temperature, however, and the temperature curve is usually erratic. It is, as a rule, elevated at first, then irregularly remittent or intermittent. The pulse also is of the febrile type. It has to be noted, however, that during the restless periods when the face is flushed the pulse is usually rapid and weak, and conversely when the child is lying quietly the face is pale and the pulse slow and stronger. Tache cérébrale can frequently be brought out. The pulse-respiration ratio is seldom disturbed. If there should be any alteration in this respect pneumonia should be looked for and the meningeal symptoms explained as being due to pneumococcal infection.

*Rash.*—Herpes around the nose and mouth has been fairly common in the Glasgow cases, but in only a small number has any rash on the body been observed. In several instances a few pale, faded, purple spots, petechial in character and not unlike old flea-bites without the central punctate spot, have been noticed. In several others definite purple hæmorrhagic irregular spots, singly and gathered into groups at places, presenting when in clusters quite the look of small nævi, have also been seen. But what would appear to be the true rash of cerebro-spinal fever when it does occur, and I recollect seeing it in only a few instances, is a sight once seen never to be forgotten and presents a picture which amply justifies the American *nom de plume* of "spotted fever." A medical man confronted with a picture such as I am about to describe in a case in which there is evident meningeal mischief is safe in making a diagnosis of cerebro-spinal fever. The spots appear in all instances within from three to four hours of the onset of illness. In describing one case I practically illustrate the others.

Two hæmorrhagic spots with irregular edges of about the size of a lentil and maroon in colour were seen on the inside of the right thigh. It is definitely stated that no other spots were present elsewhere on the body at this time. The parents were early alive to the possibility of the case being one of "spotted fever" on account of the constant warnings in the press and kept a careful watch on the progress of the rash. The medical attendant was called in early and he fully confirmed their statements which were to the following effect. Spots appeared within the next hour on the feet, legs, and hands, and an hour later there were many on the abdomen, back, and neck. During the hour following several showed on the upper and lower eyelids; at the same time a distinct hæmorrhage was noticed on the conjunctivæ of both eyes at their outer canthi. They definitely appeared therefore in crops, as did all the rashes in the other few instances in which I have been fortunate to observe it. The duration of the interval in this case, as in another during which those spots made their appearance, was as short as four hours, and no further spots came out after eight hours from the onset of illness. In the other cases, however, crops in decreasing numbers appeared during the course of the first few days of illness. In the two cases above specially mentioned the rash was so profuse as to render it just possible to place a shilling-piece on the skin without overlapping those on the front of the body, although on the back a florin might with equal result have been used. All the spots when they appeared were definitely maroon in colour and in the course of an hour or so had quite changed to purple and dull purple. The spots varied in size from that of a pin point, a lentil, to that of a quarter of an inch square, and in some places where they were gathered in clusters they were even larger. They were all irregular in contour, not raised from the surface of the skin, and did not disappear on pressure.

*Sequelæ.*—Deafness is the most common and is not usually associated with otorrhœa. Permanent squint and other affections of the eye sometimes occur. Mental weakness or confusion after recovery occasionally happens and sometimes more or less paralysis of locomotion.

*Anomalous forms.*—Among the anomalous forms perhaps the most important is the *ambulant* type which, however, is very rare. In the *abortive* form the onset is of the usual severe character but the symptoms subside in a day or two and convalescence is rapid. An *intermittent* type is occasionally encountered in which there are alternate remissions and exacerbations, but when the temperature has been taken regularly it has been shown that the remissions are more apparent than real. This form is distinguished from the *chronic* type which may last for months and is characterised by a series of recurrences, reducing the patient to a condition of extreme marasmus. The emaciation is so great in those instances as quite to merit the term "skin and bone."

*Prognosis.*—The prognosis is uncertain and should always be guarded. It is exceedingly grave when the onset is sudden and severe without prodromal symptoms. In less severe cases a wide distribution of the symptoms showing that there is a correspondingly wide involvement of local nervous structures is of serious import, and cases in which coma develops seldom or never recover.

*Mortality.*—The mortality in different epidemics has varied as much as from 20 to 75 per cent., that for Glasgow for the year 1906 working out at over 66 per cent.

*Remedy.*—No specific has yet been found for the disease and the various sera which have been employed would appear to have produced little beneficial effect. The treatment therefore resolves itself into the adoption of such measures as are found useful to relieve symptoms. Cold to the head and spine applied by means of a bladder of ice or an ice-cap and a spinal ice-bag is approved by some, and blisters to those parts is recommended by others. Frequent bathing is believed to be useful and wet cupping applied to the nape of the neck to relieve headache is suggested by Osler. Mercury has been tried and found useless. Most observers agree in favour of opium by the mouth notwithstanding that during the course of the disease dysphagia is a common symptom. Morphine in large doses hypodermically has frequently been found useful when given early. The injection of antiseptic fluid into the dural sac has been praised by eminent authorities. If it were possible thoroughly to wash by this means the affected area without undue damage it is unquestionable that good results would follow.

*Bacteriology.*—The causative micro-organism is the diplococcus intracellularis meningitidis, sometimes called for short the meningococcus. Probably the most correct term is micrococcus meningitidis cerebrospinalis, or the micrococcus of cerebro-spinal meningitis, as although the organism is usually found in pairs they occasionally occur in tetrads and grouped as staphylococci. It was discovered by Weichselbaum in 1887, who showed that it was clearly distinguishable from the diplococcus pneumoniæ. In shape it closely resembles the gonococcus and is found in varying numbers generally within the leucocytes, though more or less abundant groups of cocci may also occur outside the bodies of those cells. It stains readily but is decolourised by Gram's method. It grows at a temperature between 25° and 42° C., the optimum being 37° C. In 24 hours colonies develop on agar or blood-smeared agar plates which are as large as two millimetres in diameter, at first clear and glistening, becoming greyish-white and later brownish in colour. The edges of the colonies are smooth, undulating, and translucent. Blood agar or serum agar, or, better still, nutrose ascitic agar, are the best media. It grows readily in broth and better if blood or ascitic fluid be added. It cannot grow under strictly anaerobic conditions. As it readily dies out in culture media it is necessary to make subcultures daily or every second day. The organism possesses a very low degree of resistance to desiccation, 24 hours' drying at a temperature of 37° C. being enough to kill it. It is only feebly pathogenic to animals, even white mice resisting subcutaneous inoculations. Intraperitoneal injections, however, usually produce death in from 24 to 48 hours. Guinea-pigs are even less susceptible, and rabbits as a rule not at all. The serum of patients and animals (sheep, horse) has been found to agglutinate cultures in low dilutions but this work is still in its experimental stage.

*Lumbar puncture.*—To perform the operation the patient should lie on his side with the knees drawn well up, the head bent down, and the spine arched backwards. The skin over the lower lumbar spine is then thoroughly washed with soap and water, and thereafter treated with ether. Whilst this is being done a syringe with a long needle is being boiled at hand. The spinous process lying nearest to the line joining the highest points of the iliac crests is that of the fourth lumbar vertebra. The puncture is made midway between this spine and the one next above or below it and about half an inch from the middle line. The direction given to the needle should be forwards, inwards, and upwards, and in infants almost straightforwards. When the needle has been pushed firmly onwards fluid will be seen entering the syringe. Suction by the piston is unnecessary. The fluid obtained is usually opalescent. Films are then prepared, stained, and examined in the ordinary way. Thereafter the fluid is centrifuged and the deposit is examined for the tubercle bacillus. Finally some of the fluid is transferred to culture media and placed in the incubator to serve for future examination. Lumbar puncture is resorted to on every possible occasion by the health department, and every opportunity is taken of confirming the diagnosis made. The operation is a very simple one and if carried out with the usual precautions is attended by no risks whatever.

*Differential diagnosis.*—Meningitis may be a complication of many diseases—namely, pneumonia, influenza, enteric fever, glanders, plague, tuberculosis, and extension from middle-ear disease, &c. In those other diseases, however, a previous history of sickness will be furnished, and the clinical symptoms of the particular disease should be evident before extension to the meninges has occurred. In making an examination of a suspicious case of cerebro-spinal fever the lungs should always be examined and pneumonia eliminated. In young children I agree that this is sometimes difficult, but the embarrassed breathing and disturbed pulse-respiration ratio should be of great assistance in arriving at a diagnosis. In cerebro-spinal fever the pulse-respiration ratio is unaffected, and the respiration is seldom laboured as in pneumonia. A diagnosis from influenza is probably the most difficult, but even here the history should be of value, and great pain in the joints is uncommon in cerebro-spinal fever. Tuberculous meningitis has generally a more gradual onset, a less violent headache, and a more regular course than cerebro-spinal fever. Otitis media with extension to the meninges should present little difficulty as a previous history of a discharge from the ear will be given. When called upon to see a case of cerebro-spinal fever it is my universal practice to refrain from examining the patient until I have written down the history after careful cross-examination of the parents, and what strikes one most in connexion with almost all the cases of cerebro-spinal fever with which we have had to deal in Glasgow is the sudden onset, intense frontal or occipital headache and vomiting more or less continuous, followed by great irritability and general hyperæsthesia. I know of no other disease presenting such a picture as one usually meets with, where the patient, previously well and fit, is so suddenly struck down without previous warning, becoming soon after very ill and usually delirious.

*Conclusion.*—In the past many deaths in Glasgow, as elsewhere, have been certified as simple meningitis, idiopathic meningitis, acute meningitis, occasionally septic or suppurative meningitis, or posterior basal meningitis. I have had difficulty in understanding what is meant by simple or idiopathic meningitis. I have always wondered, as doubtless others have wondered, what caused the meningitis, and in the absence of any other definite information as to what is the true causative micro-organism I feel justified in concluding they should fall within the category of cerebro-spinal fever. I am not one of those who attach any importance to the term "simple" or "idiopathic," and prefer to put the query, What caused it?—as undoubtedly there was a cause. Acute, septic, suppurative, and posterior basal meningitis for the same reason must now be relabelled "cerebro-spinal fever." Further, I believe that some cases certified in the past as tuberculous meningitis were really cases of "cerebro-spinal fever." In order to satisfy myself on this point I have inquired into the history of some of those cases and have been told that the child had only been ill for periods varying between two, four, and six days. Other deaths also have been certified as due to "teething and convulsions." I put the question to you, gentlemen, Does it conform to any of the laws of nature that a child should die because it is getting teeth? I have difficulty in understanding this also, and in the absence of further information I am inclined to the view that at least some of those cases are also cases of cerebro-spinal fever. Further, it is conceivable that some deaths registered as due to "acute gastritis" and probably also "summer diarrhœa" may really be actual cases of cerebro-spinal fever.

Glasgow.

# THE TREATMENT OF CANCER.

BY LOVELL DRAGE, M.A., M.D. OXON.,
MEDICAL OFFICER OF HEALTH, HATFIELD RURAL DISTRICT, ETC.

IN the year 1902 I published a paper in THE LANCET[1] calling the attention of the medical profession to the amelioration in the condition of patients suffering from cancer by the artificial production of what is technically known as leucocytosis, which denotes an increase in those cells of the blood which are most highly endowed with the properties of living cells. The first agent used for the purpose was the cinnamate of sodium, and I was led to use the drug because of clinical observations previously made upon patients suffering from cancer and who were treated with the oil of cinnamon. With the aid of my friend, Mr. G. T. Morgan, D.Sc. Lond., of the Royal College of Science, South Kensington, I have since then made an attempt to test various other organic salts closely related to the cinnamate of sodium.

Several papers referring to the results of the treatment have been published in the two principal medical journals, and it will be well to analyse the reasons why, after so many years of uphill work, no convincing results have been obtained. Surgery, so far, has held the field in a manner which is surprising to one like myself who, after 23 years of professional life, has known no permanently successful result secured by surgical methods in the treatment of this disease among patients, friends, or acquaintances. The failure of surgery is to my mind absolute, although all cases, except the worst possible ones, are included in its net. It is expected of anyone who challenges the surgeon, as I do, to compare results from cases of every degree of advancement in the disease, up to the worst, with those obtained from cases of the most favourable kind. The only four early cases which I have been able to secure have all succeeded. It is true that in one case the growth was removed by the knife, but the operation of simple removal was one which surgeons call criminal because of its want of completeness. Criminal or not, the patient remains well and at work after more than six years, when according to the rules of surgery she should have died long ago, or at all events been incapacitated from earning her living. One alone of the four is dead, and death was caused by heart disease after the complete disappearance of the growth. Another case, that of a nurse who refused operation, remains well and at work after four years, after fearing that the pain from the growth from which she was suffering would incapacitate her for her work. Another case, recurrent after operation, remains well after an equal interval of time. A fifth is still under treatment, the growth and the infected glands having much diminished in size.

Microscopical examination was not possible in all of these cases although it was made in the only two in which it was possible. This statement leads to the indication of another difficulty in establishing a medical treatment—namely, the want of microscopical examination. A mere clinical diagnosis, although such can be made with very considerable accuracy in the majority of cases in which sight and touch are available, is not held to be worth anything by the advocates of surgical procedure.

Now it must not be inferred that a claim to any finality in treatment is advanced, but a claim is made that the treatment advocated possesses a sound basis, and that the drugs which Dr. Morgan has made for the first time, such as the coumarate of sodium and tylmarin, are capable of exercising a very beneficial effect, even in cases of the worst possible type. As has previously been indicated, the stock-in-trade of the physician, so far as cancer is concerned, is composed chiefly of cases advanced in the disease, cases which have been treated with the knife, with the various light treatments, or with electricity, the class of case which I had never succeeded in alleviating until the time came when I founded for myself a new basis of treatment. The pleasure derived from giving alleviation of any substantial kind to such cases has been very considerable, and the disappointment of inability to proceed faster very great. A consideration of the facts obtained from the treatment of a considerable number of patients in the later stages of the disease leads me, however, to the belief that the advance made is great, although at the present time it is impossible to assert that all cases of cancer can be cured by medicinal treatment.

The term "cancer" connotes a disease which is caused by a cellular degeneration—the cells thus degenerated possessing the power of self-multiplication. As cellular multiplication increases, various troubles to the human frame result. The simplest form of trouble is injury by pressure of the growth upon adjacent organs, by interference with the lumen of natural passages, or by destruction of the organ invaded. The next simplest trouble is the local death of the tissues invaded, with the resultant absorption of the products of decomposition into the economy. A much more complex phenomenon is the spread of the disease from the seat of origin and the infection of other organs or structures. Still more complex is the condition known as "the cancerous cachexia"—i.e., the general condition of ill-health, which includes the wasting of the body and its death. A study of the results obtained from medicinal treatment of such various conditions brings important facts to light and helps to clear the ground for the discovery of an instrument of destruction for the disease when first diagnosed.

---

[1] THE LANCET, July 12th, 1902, p. 66.

Except in the cases mentioned at the commencement of this paper no results can be claimed which can be called certain results upon an external growth of any long standing, but in several cases the diminution in size of lymphatic glands secondarily infected has been marked, and no fresh invasion of lymphatic glands has been noted after the commencement of treatment. This observation is important, because the lymphatic system is so frequently the path by which infection travels. In two cases of abdominal cancer, both diagnosed by surgeons of repute after an exploratory operation, a complete restoration to health has been obtained. The first of these cases was published in the *British Medical Journal* of Oct. 28th, 1905. The patient was under the care of a medical man who obtained from me the details of treatment; he was able to report to me in October, 1905:—"The tumour is no larger, I think it is smaller; there is no pain, although this was present before the commencement of the treatment; the general health is very good, better than for some time previously." It is only right to say that the operating surgeon when a report was sent to him wrote:—"About the diagnosis, it was wrong. I have little doubt in the light of subsequent events that what we took to be carcinomatous nodules must, I suppose, have been inflammatory. Yet I erred with my eyes open, because I have already read a paper which was afterwards published on this very condition." The query is, perhaps, pertinent: What is the disease which can so deceive a surgeon of experience and two other medical gentlemen present at the operation? And how many of the successes claimed by surgeons are cases of this unknown disease?

The second case came under my care during the last winter. The patient was operated upon by Mr. A. A. Bowlby in St. Bartholomew's Hospital in April, 1906, who found a cancer of the liver. After operation the patient was told that this was incurable and that nothing further could be done for her. When I first saw this patient she was losing flesh, was in pain, and was suffering from slight jaundice. She has just now returned from a convalescent home and has been examined at St. Bartholomew's. Her condition is most favourable, she herself believing that she is absolutely cured. No judgment as to permanence of cure can be given for many years, but at all events the fact remains that the woman's life has been prolonged and she has obtained alleviation from her sufferings.

Two cases of obstruction of the gullet have been certainly relieved. The first was treated by Mr. C. B. Lockwood at St. Bartholomew's Hospital, to whom I am eternally indebted for the interest which he has taken in my work. His house surgeon wrote to me on Dec. 12th, 1906: "One of Mr. Lockwood's patients who is suffering from cancer of the gullet has greatly improved on your treatment. After ten injections he has put on a stone in weight and from being practically unable to swallow fluids can now take about a pint in five minutes." This patient died unfortunately from bronchopneumonia, as was ascertained by the necropsy, and not from the disease.

The second case was treated by myself. The patient refused operation when pressed to submit to one by an eminent surgeon in October, 1906. He came under my treatment early in November and was then losing 4 pounds in weight weekly. His powers of swallowing increased and he first ceased to lose, and then gained, weight. Six weeks before death he gradually began to lose ground and the obstruction gradually increased until death occurred, eight months after our first interview.

The escape from surgical methods in these two cases, although life was not saved, implies a considerable advance. Palliative methods which are available for the surgeon do not provide anything but a life of misery to the patient, and further work on chemical lines is encouraged by such results. Such work is proceeding.

As coöperation was found to be difficult in this country a report was obtained by Dr. Morgan from a laboratory in Buffalo, New York, which recommended a reinforcement of the coumaric acid salts at present used, and resulting from this various metallic salts are being tried. It appears probable that if the right combination can be secured success will follow, but no definite decision can be given on this point at the present moment.

Very definite results have been obtained in connexion with the prevention of the local death of the tissues invaded and the absorption of the products of decomposition into the human economy. In old days my experience was that a large proportion of patients died septic, while no case which I have treated by the new method has so died. The reason for this is probably that all the drugs used are very active in destroying fission fungi, those agents at once of destruction and disease. When tested by the Rideal-Walker method against the bacillus typhosus, the activity of carbolic acid being 1, that of tylmarin was found to be 4·5 and that of the ortho-coumaric acid 6·5, whilst that of formalin, which is a very active substance, is only 0·30.

In connexion with the prevention of the cancerous cachexia it is no part of my present intention to enter upon the various complex elements which cause it. It is, however, clear in my mind that the treatment advocated produces a great stimulating effect and consequently a prolongation of life and increase of comfort to the sufferer. For many years past physicians in this country have been too much led instead of themselves leading. Many have been content with a profound scepticism as to the results obtained by the use of the curative part of their art, many with the copying of foreign methods and modes of thought, and too many with just the use of any new drug introduced by manufacturers. It appears to me that it should be the rôle of the physician to initiate rather than to follow, and that the present pessimism as to the possibility of treating cancer by therapeutic methods is an attitude to be ashamed of. At no time have so many active remedies been in the hands of physicians and at no time have there been so many suggestive facts obtained from scientific laboratory researches for their use. At the present moment surgery is supreme simply because medicine has so long suffered from time-honoured prejudices and a reluctance to emerge from beaten tracks.

Hatfield.

# THE SOLUBILITY OF AIR IN FATS AND ITS RELATION TO CAISSON DISEASE.[1]

BY HORACE M. VERNON, M.D. OXON.,
FELLOW OF MAGDALEN COLLEGE, OXFORD.

*(From the Physiological Laboratory, Oxford.)*

As is now well known, the very varied symptoms produced by rapid decompression from high atmospheric pressures, and popularly known as "caisson disease" or "diver's palsy," are due to liberation of bubbles of gas—chiefly nitrogen—in the blood and tissues. In the course of a recently published investigation I found that air is much more soluble in certain oils than in water. Dr. J. S. Haldane pointed out to me the interest of this fact in connexion with the causation of caisson disease and at his suggestion I have repeated and extended my observations.

The fats experimented with were olive oil, cod-liver oil, and lard. In the case of the first two the solubility was measured at 15° and at 37° C., whilst for lard it was determined at 45° C. In the observations made at room temperature the oil was shaken violently with air in a bottle for several minutes and was allowed to stand for from one to one and a half hours till all the air bubbles had risen to the surface. It was then weighed, and about 40 to 50 grammes of it were sucked up into the vacuous flask of a Geissler's mercury pump. This flask contained from 70 to 100 cubic centimetres of 0·5 per cent. sulphuric acid which had previously been well boiled for an hour so as to get rid of all traces of air. The mixture of oil and water was now boiled for half an hour, the oil breaking up into a very fine emulsion and giving up practically all of its gas in the first few minutes. This gas was pumped off and analysed with Haldane's[2] gas analysis apparatus. The oil was boiled with dilute acid instead of water, so as to obtain the whole of the carbon dioxide present, both combined and in solution. In determining the solubility at 37°, the oil, previously saturated at room temperature, was warmed to about 38° to 39°, and was shaken vigorously with air for about two minutes. At the end of this time its temperature had fallen to about 36·5°. It was warmed up a second time and the shaking repeated, and was then kept in a water bath at 37° for about half an hour in the case of the cod-liver oil and an hour in the case of the olive oil, these being the times required for all the bubbles of air to rise to the surface. The gaseous content of a weighed amount of the oil was then determined as before. The results obtained are given in the tables. They represent the volumes of gas, reduced to 0° and 760 millimetres, contained in 100 cubic centimetres of the oil at the temperature recorded, when saturated with air at a pressure of 760 millimetres. To calculate these values, it was assumed that the specific gravity of olive oil at 15° is 0·917, and at 37° 0·902.[3] The specific gravity of cod-liver oil, compared with that of water at 15°, was found by direct experiment to be 0·928 at 15°, and 0·914 at 37°.

---

[1] A paper read before the Royal Society on May 30th, 1907.
[2] Haldane: Journal of Physiology, vol. xxii., p. 465, 1898.

100 c.c. of olive oil contain—

| | At 15° C. | | | Mean. | At 37° C. | | | Mean. |
|---|---|---|---|---|---|---|---|---|
| | c.c. | c c. | c c | c.c. | c.c. | c.c. | c.c. | c.c. |
| Oxygen ... | 2·20 | 2·23 | 2·42 | 2·28 | 2 33 | 2·36 | 2 30 | 2·33 |
| Nitrogen ... | 5·23 | 5·30 | 5·27 | 5·26 | 5·19 | 5·23 | 5·15 | 5·19 |
| $CO_2$ ... ... | 0·19 | 0 24 | 0·16 | 0·20 | 0·17 | 0 13 | 0·18 | 0·16 |

100 c.c. of cod-liver oil contain—

| | At 15° C. | | | Mean. | At 37° C. | | | Mean. |
|---|---|---|---|---|---|---|---|---|
| | c.c. | c.c. | c.c. | c c. | c.c. | c.c. | c.c. | c.c. |
| Oxygen ... | 2·34 | 2·31 | 2·22 | 2·29 | 2·21 | 2·22 | 2·22 | 2·22 |
| Nitrogen ... | 4·95 | 5·15 | 5·07 | 5·06 | 5 05 | 5·10 | 5·08 | 5 08 |
| $CO_2$ ... ... | 0·19 | 0 25 | 0·19 | 0·21 | 0·18 | 0·24 | 0·20 | 0·21 |

Considering only the mean values, we see that in the case of each oil the solubility at 37° is within the limits of experimental error the same as its solubility at 15° C. A similar constancy was found by Bunsen for the solubility of oxygen in alcohol at temperatures from 0° to 24°, though Timofjew[4] has since found that the solubility does slightly diminish with the temperature. In any case the diminution is small (6·8 per cent. diminution for oxygen and 5·2 per cent. diminution for nitrogen between 0° and 24°) and if it exists at all in the case of these oils it must be smaller still. A simple proof of the slight effect of temperature on solubility is obtained by saturating the oil at room temperature and heating it gradually in a water bath. Not a trace of gas is observed to come off if the temperature be kept at 97°, but at 100° it bubbles off in very small quantities.

The observations on lard were carried out at one temperature only. Lard melts at from 36° to 48° and solidifies at from 27° to 30°, but if melted and shaken with air at 37° it is too viscid to allow the air bubbles to rise to the surface in a reasonable time. Hence the solubility was determined at 45°. The lard was heated to about 48° and then shaken violently for a minute with air, its temperature at the end of this time having fallen slightly below 45°. The process was repeated, and after keeping the lard in a water bath at 45° for about 35 minutes the gases were boiled off in the usual way. They came off quite as readily as from the olive and cod-liver oils. The data obtained are given in the table, they being calculated on the supposition that the specific gravity of lard at 45°, as compared with water at 15°, is 0·895.[5] If the mean values be compared with the mean values for the other fats it will be seen that the solubility of oxygen is practically constant throughout. That of nitrogen varies slightly, it being 5·23 cubic centimetres for olive oil (an average of the values at 15° and at 37°), 5·11 cubic centimetres for lard, and 5·07 cubic centimetres for cod-liver oil. Still these differences are almost within the limits of experimental error. In the case of the lard it is possible that the two minutes' shaking with air was not quite sufficient for complete saturation, but more thorough shaking was not possible as it brought down a slight precipitate which prevented the rapid clearing of the air bubbles.

| 100 c.c. of lard at 45° C. contain— | | | | Mean. |
|---|---|---|---|---|
| | c.c. | c.c. | c c. | c c. |
| Oxygen ... ... | 2 23 | 2 40 | 2·35 | 2·33 |
| Nitrogen ... ... | 5·05 | 5·09 | 5·18 | 5·11 |
| $CO_2$ ... ... ... | 0·12 | 0·12 | 0·15 | 0·13 |

In that fats of such very different composition as the three experimented with dissolve practically the same amounts of oxygen and nitrogen we are fully justified in assuming that human fat would behave similarly. From the physical and chemical constants collected in the accompanying table[6] we see that the melting point of human fat lies between those of cod-liver oil and lard, whilst its iodine value is 61·5 per cent., or about the same as that of lard. In that cod-liver oil has an iodine value of about 145 per cent., and olive oil one of about 83 per cent., it follows that the proportion of unsaturated acids present in a fat has little or no influence upon its solvent powers for oxygen and nitrogen.

| — | Cod-liver oil. | Olive oil. | Lard. | Human fat. |
|---|---|---|---|---|
| Solidifying point ... | 0° to –10° | –6° (?) | 27° to 30° | 15° |
| Melting point ... | — | — | 36° to 48° | 17·5° |
| Specific gravity ... | 0·928<br>at 15°/15° | 0·917<br>at 15°/15° | 0·895<br>at 45°/15° | 0·903<br>at 25/°25° |
| Iodine value ... ... | 123 to 168% | 79 to 88% | 50 to 70% | 61·5% |

From the absorption coefficients for oxygen and nitrogen given by Bohr and Bock,[7] it is calculated that 100 cubic centimetres of water saturated with air at 15° absorb 0·733 cubic centimetre of oxygen and 1·411 cubic centimetres of nitrogen. Taking a mean of all the values obtained with cod-liver oil and olive oil at 15°, the solubility of oxygen is found to be 3·1 times greater than in water and of nitrogen 3·7 times greater. At 37° Bohr and Bock's values show that 100 cubic centimetres of water absorb 0·507 cubic centimetre of oxygen and 0·975 cubic centimetre of nitrogen. Taking a mean of all the values obtained with cod-liver oil and olive oil at 37° and with lard at 45° (for doubtless the solubility at this temperature is practically the same as at 37°), the solubility of oxygen is found to be 4·5 times greater than in water and that of nitrogen 5·3 times greater. It has been found by Bohr[8] that blood plasma dissolves 2·5 per cent. less nitrogen than an equal volume of water, whilst blood dissolves slightly less still; hence we may conclude that at body temperature the fat of mammals dissolves at least five times as much nitrogen as water or as blood and blood plasma.

The solubility of oxygen in fats, though apparently less than that of nitrogen, may in reality be as great. It is well known that oils are able to absorb and combine with oxygen, and the rate of this absorption is by no means inconsiderable. For instance, a sample of olive oil was saturated with air at 15° and was kept for 23 hours at 18° in a stoppered bottle filled to the brim. It then yielded only 0·49 cubic centimetre of oxygen per 100 cubic centimetres, whilst some of the sample from which the air was boiled off an hour after saturation yielded 2·40 cubic centimetres. Owing to its richness in unsaturated acids cod-liver oil absorbs oxygen more quickly still, and a sample saturated with air at 15° and kept 23 hours at 18° in a stoppered bottle gave only 0·05 cubic centimetre of oxygen per 100 cubic centimetres. Undoubtedly, therefore, there must have been some absorption of dissolved oxygen during the half to one and a half hours the air-saturated oils were kept before analysis.

It might be thought that the solubilities determined by the above-described method are invalidated, or liable to be invalidated, by leakage of air into the vacuum pump. This is not the case if due precautions are taken. The pump must be in such good order that no appreciable leakage occurs when it is left vacuous for several days, and it must be kept vacuous for a week or more before use, for if air be left in it a small amount attaches itself to the glass walls of the apparatus and only escapes slowly when the pump is made vacuous again. Air likewise attaches itself to the walls of the boiling flask, but it is got rid of by the preliminary boiling of the dilute acid previous to the introduction of the oil. In all analyses of gases, whether in oil, water, or salt solutions, such a preliminary boiling was invariably adopted, and by taking these precautions many hundreds of analyses have been made without invalidation of results by leakage of air. I have elsewhere[9] recorded nearly a hundred analyses of the gases in sea water, and the mean nitrogen values then obtained are almost identical with the nitrogen absorption values determined by Dittmar.

---

[3] See Lewkowitsch: Chemical Analysis of Oils, Fats, and Waxes, p. 454, London, 1898.

[4] Timofjew: Zeit. Phys. Chem., vol. vi., p. 151.

[5] Lewkowitsch: loc. cit., p. 564.

[6] Ibid., pp. 454, 477, 562, and 564.

[7] Bohr and Bock: Wied. Ann., vol. xiv., p. 318, 1891.

[8] Bohr: Nagel's Handbuch der Physiologie, vol. i., p. 62, 1905.

The bearing of the above recorded results upon many phases of caisson disease is probably a direct one. The commonest symptoms observed in caissoniers consist of joint and muscular pains, and in paralysis, the latter being the result of injury to the spinal cord. Thus in necropsies on caissoniers Bert observed softening of some inches of the spinal cord in the dorsal region. Von Leyden, in a case of death 15 days after decompression, observed signs of myelitis and small irregular fissures in the mid-dorsal cord, probably produced by the escape of gas. Necropsies on divers have shown necrobiosis and hæmorrhages in the spinal cord[10] and distension of the blood-vessels by air bubbles.[11]

Chemical analysis shows that spinal cord and peripheral nerves contain nearly 20 per cent. of fat and fat-like substances. Adipose tissue contains about 83 per cent. of fat, and yellow bone marrow (as distinct from red marrow, which is poor in fat) contains no less than 96 per cent. of fat (Gorup-Besanez). If these tissues were saturated with nitrogen at, for instance, four atmospheres of atmospheric pressure, 100 cubic centimetres of them would contain, instead of the $0 \cdot 975 \times 4 = 3 \cdot 90$ cubic centimetres of dissolved nitrogen present in an equal volume of water, about 7 cubic centimetres in the case of the spinal cord and nerve and 20 cubic centimetres in the case of yellow bone marrow. On sudden decompression, therefore, the volume of nitrogen bubbling off in a gaseous form might be from two to six times as much as that from the non-fatty fluids and tissues of the body.

It has been found that the severity of the symptoms developed by caissoniers is influenced greatly by the time of exposure to increased pressure. In sinking the foundations of a bridge at St. Louis a pressure reaching at a maximum to 50 pounds above normal was used and a large proportion of the workers were affected. As the depth of the caissons increased the shifts were shortened from four hours to one hour, with the result that the serious accidents were reduced to *nil.*[12] Presumably, therefore, the body tissues were not so fully saturated with nitrogen in the shorter as in the longer period. On the other hand, Hill and Greenwood[13] found that on exposing themselves to a pressure of from 30 to 45 pounds their urine became saturated with the theoretical amount of nitrogen in from 10 to 15 minutes. This quicker saturation must be due to the blood-flow through the kidney being much more rapid than that through the spinal cord, and very much more rapid than that through adipose tissues. Even if it were as rapid through fat-containing tissues as through the kidney, the fats, in virtue of their greater solvent power, would take longer to become fully saturated than the fluids of non-fatty tissues.

*Conclusion.*—At body temperature fats dissolve more than five times as much nitrogen as an equal volume of water or blood plasma. The special tendency of the fat-containing tissues (such as subcutaneous tissues, spinal cord, and peripheral nerves) of caisson workers and divers to suffer injury from the liberation of gas bubbles after rapid decompression is dependent on this great solubility.

Oxford.

# A CASE OF SELF-INDUCED (?) ABORTION.

BY A. B. M. THOMSON, M.B., CH.B. EDIN.

THE occurrence of foreign bodies in utero is not so frequent as one might expect. Hellier[1] accounts for 127 cases in literature and records one of his own. As an additional case and also for its medico-legal interest the following is worthy of record.

The patient, a married II.-para, aged 30 years, was first seen on the evening of June 26th, 1906. Her illness was attributed to a hearty meal of fish, of which she had partaken a few days before. She had a history of persistent pain in the abdomen and vomiting; incidentally it was mentioned that she had aborted. The product of abortion had been disposed of, but I was assured that "everything had come away." The peculiar odour of a purulent post-partum discharge was distinctly noticeable in the room. The patient's temperature was 102° F.; her pulse was 130, small, and running; in addition she had the icteric tint and the apathy which are associated with septicæmia. Her abdomen was slightly distended, tympanitic, and tender, more especially in its lower part. On examination per vaginam a thin rod was found projecting for about 1 inch beyond the patulous os. Considering the gravity of the case I asked my colleague, Dr. John McDonald, to see the patient in consultation, to which request he very kindly acceded. When we removed the foreign body it was found to be an ordinary bone penholder, 4 inches in length, the rounded and pointed end of which had been introduced into the cavity of the uterus. The patient, although vague in her other statements, maintained repeatedly that she herself had induced the abortion. She died on the morning of the 27th, just 12 hours after being first seen.

*Necropsy.*—The brain was normal. The left lung was emphysematous and the pleura was adherent along the lateral border of the chest wall, evidently the result of a past pleurisy. On opening the abdomen the bowel was found distended with flatus; there was no evidence of peritonitis either general or pelvic, although a few loops of small intestine lying in the pouch of Douglas were red and injected. The spleen was much enlarged and semi-diffluent so that its removal intact was a work of some difficulty; it weighed 28 ounces. Before dissecting out the organs of generation *en masse* it was noted that the uterus was moveable and enlarged. There was a purulent discharge coating the walls of the vagina, but there was no sign of laceration. The uterus measured 6 inches in length, 4½ inches in breadth at the fundus, 2 inches in depth, and its walls were ¾ inch in thickness. The os was patulous but without trace of any recent wound. On opening the uterus the placenta was found on its posterior wall; it was greenish at the margins with a dark, punctured wound in its centre. The end of the penholder fitted into this wound in the placenta. The left ovary contained a corpus luteum. The size of the uterus confirmed the patient's previous statement that she was between the third and fourth month of pregnancy.

The question which called for decision was whether this was in reality a case of self-induced abortion. Is it possible for a woman to introduce into her uterus, without causing injury to the vaginal walls or to the os, a straight rigid rod four inches in length? The only answer one could give was that in this case it was possible but very improbable. There was no condition present, such as prolapse, which would have rendered the introduction of the rod easier. If the patient herself introduced the penholder she must have become an adept, because there was no trace of violence having been used to insert it into the proper axis of the uterus, which was normal. On the supposition that this case was self-induced, another interesting point arises. The penholder had been left in utero to act as a bougie. This is unusual in cases of instrumental criminal abortion. The object, as a rule, is simply to "draw blood" from the uterus, and rarely is the instrument left *in situ*.

Perhaps, in conclusion, I may be permitted to express the opinion that instrumental criminal abortion is fairly frequent, judging from the number of cases of septic incomplete abortion one sees; and that, undoubtedly, many of them are self-induced.

---

[9] Vernon: Journal of Physiology, vol. xix., p. 68, 1895.

[10] Cited by Hill and Macleod: Journal of Hygiene, vol. iii., pp. 408 and 499, 1903.

[11] Hill: Recent Advances in Physiology, p. 250, 1906.

[12] Paul Bert: La Pression Barométrique, p. 404, Paris, 1878.

[13] Hill and Greenwood: Proceedings of the Royal Society, vol. lxxix., B, p. 21, 1907.

[1] Practitioner, February, 1906.

Clapton Park, N.E.

ERRATUM.—In Dr. Alexander Morison's paper on the Nature and Management of Hypertrophy of the Heart, published in THE LANCET of August 24th, p. 506, column 2, line 8, the words "diminishing hypertrophy" should be "initiated hypertrophy," and on p. 508, column 1, line 2, the word "rib-cartilages" should read "ribs and cartilages."

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

## EAST LONDON CHILDREN'S HOSPITAL, SHADWELL, E.

### A CASE OF DOUBLE DEPRESSED FRACTURE OF THE SKULL AND PNEUMOTHORAX.

(Under the care of Mr. W. H. BOWEN.)

FOR the notes of the case we are indebted to Dr. W. Norman May, resident medical officer.

A boy, aged 15 years, was admitted to hospital on August 2nd at 7.30 A.M., the history being that about half an hour previously he had fallen off his bicycle and that the wheels of a van had passed over his head. He was unconscious and cyanosed with feeble running pulse and stertorous breathing. Fractures could be felt in both parietal regions, the one on the left side being more anteriorly placed than that on the right and not quite so near the vault of the skull. There was paralysis of the right arm and the right leg and the pupils were unequal. Some bruising was noticed, as if made by a wheel, over the first, second, and third ribs on both sides below the clavicles.

As the boy's condition was extremely serious he was immediately taken to the theatre and operated on by the resident medical officer. An incision over the left parietal region showed a depressed fracture over the motor area, the depressed fragment being triangular in shape, 2½ inches in length, and 1 inch in width at its base, which was formed by the fronto-parietal suture, the fracture extending through the centre of the parietal bone. The fragment was depressed beneath the surrounding bone, which overlapped it at its edges, and it was not until the fragment had been trephined at its border that it could be elevated and removed. The dura mater underneath appeared to be uninjured, while the fracture could be felt to continue down into the left temporal region but was not depressed there. An incision over the right parietal region showed a depressed fracture, gutter-shaped and running in a longitudinal direction, rather above the centre of the parietal bone. This was also trephined and the bone elevated, but there was no fragment broken off. The fracture could be felt to extend down into the right mastoid region but with no depression. The incisions were sewn up with salmon-gut sutures and the patient was sent back to bed, the operation having taken about 25 minutes. The patient's breathing became much better after the fragment on the left side had been elevated and an anæsthetic became necessary to complete the operation. A few hours later the patient recognised his friends and spoke to them, also asking for things he wanted, while the movements in the right arm and leg returned, although the right arm was still weak. His breathing was very rapid and the alæ nasi were noticed to be working, so his chest was examined again. On the right side there was a tympanitic note on percussion and the breathing was most markedly bronchial in character; the heart was displaced to the left and there was some emphysema at the root of the neck. An exploring syringe put into the right side of the chest confirmed the diagnosis of pneumothorax. The patient's breathing gradually became worse and he died at 9.30 A.M. the following morning, 26 hours after the accident, apparently entirely from his lung trouble, as he was quite conscious up to the end and there were no paralyses of any kind.

*Necropsy.*—A post-mortem examination made on the following day showed the trephine holes as made at the operation, with the dura mater intact and normal and the brain uninjured and with no trace of hæmorrhage, laccration, or contusion. The fracture on the left side extended down into the temporal fossa and involved the roof of the orbit to a very slight extent, while on the right side the fracture just reached down to the mastoid process, but there was no effusion of blood or depression of bone on either side. The right lung was collapsed and on opening up the trachea it was found that the right bronchus was torn completely across immediately below the bifurcation of the trachea, the torn ends being separated for half an inch. The rest of the structures at the root of the lung were uninjured; there was no blood in the pleural cavity and the ribs, clavicles, and pleuræ were quite intact.

*Remarks by* Dr. MAY.—The occurrence of these two interesting lesions in one case—namely, an apparently recoverable double depressed fracture of the skull and a pneumothorax caused by complete rupture of the bronchus without any injury to the ribs—seems to render this case worth recording. For permission to publish it I am indebted to Mr. Bowen, under whose care the patient was.

# Reviews and Notices of Books.

*Epilepsy: A Study of the Idiopathic Disease.* By WILLIAM ALDREN TURNER, M.D. Edin., F.R.C.P. Lond., Physician to Out-patients at the National Hospital for the Paralysed and Epileptic, Queen's-square, and King's College Hospital, London; Visiting Physician to the Colony for Epileptics, Chalfont St. Peter, &c. London: Macmillan and Co., Limited. 1907. Pp. 272. Price 10*s.* net.

As a special monograph on the subject of idiopathic epilepsy Dr. Aldren Turner's book leaves little to be desired. It is a careful study of the disease chiefly from the clinical standpoint, with some interesting and important observations on its pathology contributed by Dr. John Turner of the Essex County Asylum. At the outset Dr. Aldren Turner premises that he regards epilepsy as an organic disease of the brain and that the morbid conditions which produce the convulsions eventually progress to those underlying the permanent dementia. After an introductory chapter he devotes two chapters to the etiology of the disease, in which he gives an exhaustive critical study of his own statistics and those of other authorities in regard to the causation of epilepsy. As a result he concludes that the proportion of epileptics in the general population is about 2 per 1000, that there is a slight preponderance in the male sex, and that the most important predisposing causes are ancestral epilepsy and neuropathic predisposition, which are found in about 50 per cent. of the cases.

In regard to the age incidence he finds that at least three-fourths of the cases arise under the age of 21 years and that the greatest number of cases commencing in any one year is to be found in the first year of life. The so-called stigmata of degeneration are found to be very commonly present in the subjects of epilepsy, especially in those cases commencing early in life. A careful analysis is given of the supposed determining causes of the convulsions such as the effect of various physiological, psychical, and pathological processes or their development, among them sleep, fright, trauma, and alcoholism. The general conclusion arrived at is that in those who have inherited the epileptic tendency a convulsive habit may be established either in the course of natural development or as a result of certain occasional or accidental causes. Two chapters follow on the clinical features of epileptic fits and in these Dr. Aldren Turner largely follows the descriptions of Herpin, whose law he enunciates as follows: "That although attacks vary infinitely in different persons they are always or nearly always similar in the same patient; and that the incomplete attacks and the initial symptoms of the complete attacks are identical." The different stages of the fits, the various types of fit, and the varieties of warnings are carefully described, and the sequelæ are considered in detail. Among the types of the disease, major, minor, and combined forms are differentiated and the severer types of serial epilepsy and status epilepticus are separately described, the former being regarded as a mild and modified form of the latter.

An important chapter deals with the mental states found in epilepsy, comprising the pre- and post-paroxysmal psychoses, with special references to acute dementia and mania. The psychical epileptic equivalents are also discussed in some detail and presented in a clear and satisfactory manner, the classification given being a very useful one. The relations of epilepsy to other neuropathic conditions, and its association with other morbid states are next considered. A chapter on the Pathology of Epilepsy, by Dr. John Turner, is a valuable addition. Dr. John Turner discusses in detail the morbid changes observed by himself in a number of cases and compares them with those found by other authorities. He describes changes in the meninges, in the neuroglia, in the nerve cells, and in the blood-vessels. Notably, he finds that atrophy and sclerosis of some part of the central nervous system occurs in more than half the cases of idiopathic epilepsy. It is, however, to the changes in the blood-vessels that he attributes the greatest significance—viz., intravascular thrombi, either of hyaline or granular material. He believes that the immediate cause of the fits is cortical stasis resulting from obstruction to the blood supply by intravascular clotting in a defectively developed nervous system; that the blood platelets play an important part in this clotting, and that the atrophy and sclerosis are late results of the vascular changes. This view is ingenious and is supported by very careful observations, but it appears to us difficult to reconcile in its present form with Herpin's law previously enunciated as to the identity of type of the fits in a given case.

The various bio-chemical and other theories of the genesis of epilepsy are critically considered in a separate chapter, and the conclusion arrived at is that some types of epileptic paroxysm may probably be the result of auto-intoxication. Lastly the diagnosis, prognosis, and treatment of epilepsy are given in detail. The remarks on treatment are especially valuable as the various forms of treatment are given, with practical details and with statistical tables as to their utility. Some interesting remarks in regard to epileptic colonies are appended and there is a useful paragraph on epilepsy and life assurance, with especial reference to the insurability of a person subject to fits.

Dr. Aldren Turner's book is a very notable addition to the literature of epilepsy and we have read it with interest. It should serve as a very useful work of reference.

---

*Differential Diagnosis and Treatment of Disease: A Textbook for Practitioners and Advanced Students.* By AUGUSTUS CAILLE, M.D., Fellow of the New York Academy of Medicine; Member and Ex-President of the American Pædiatric Society; Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; Visiting Physician to the New York Post-Graduate and German Hospitals, &c. With 228 illustrations in the text. London: Sidney Appleton. 1906. Pp. 867. Price 25*s.* net.

To present the methods employed in the diagnosis and treatment of disease in such a manner as to be readily available for the practitioner and to include a description of those procedures originally worked out and employed by the specialist has been the task which Dr. Caillé has set himself in writing the book before us. He deprecates the arbitrary division of diseases into medical and surgical groups and desires to "re-establish the relations of internal medicine, surgery, and the several specialties." In his introductory remarks he outlines his views as to the position of the general practitioner in relation to the community on the one hand and to those practising as consultants on the other. He should be "the trusted family counsellor in all matters concerning health and sickness." To insure the confidence of those among whom he practises, thinks Dr. Caillé, it is necessary, above all things, that he should be a sound diagnostician and a master of physical diagnosis; he should have had some laboratory training and be capable of making a thorough clinical examination, employing all the ordinary methods of investigation; and he should further possess a good knowledge of hygiene and dietetics, be an adept at minor surgery, and be able to perform emergency operations.

Dr. Caillé's book is written primarily for the general practitioner and for the advanced student to supply them with the means of making a diagnosis and of ordering treatment. The first chapter is devoted to clinical methods and gives directions for the general, regional, and special examination of the patient with clear and practical accounts of the ordinary laboratory methods as applied to the investigation of the urine, fæces, gastric contents, sputum, exudates, puncture fluids, blood, and calculi. The second chapter deals with the general therapeutic management of patients, with direct reference to various methods of treatment, especially those involving manipulative measures such as lavage, rectal feeding, and baths, which are carefully described in considerable detail with explanatory figures, many of them reproductions from photographs. The third chapter, one of the longest and at the same time one of the best in the book, is devoted to pædiatrics. It practically constitutes a small treatise on the diseases of children. It includes directions for the general management of the sick child with a careful and detailed account of the various methods of infant feeding. This chapter bears the impress of the author's practical experience, especially in regard to treatment. Seven chapters are then given up to a consideration of diseases of the digestive organs. The first of these deals with food and dietetics, and here various dietaries are described and long lists of food substances are given, but without sufficient details as to their selection and to the quantity which should be given. The diseases of the various parts of the alimentary canal are separately considered in the other chapters; the methods employed for diagnosis are described and in many cases illustrated, including such processes as trans-illumination of the stomach. Some conditions, notably diseases of the pancreas, are very superficially considered and in others the directions as regards treatment are too general and frequently inexact. Diseases of the circulatory system are next discussed. In this section, again, some important subjects are dismissed with but short consideration. To give an example, the diagnosis of aneurysm, especially of aneurysm of the aortic arch, is very briefly described, while the treatment of aneurysm in general occupies eight lines. It is further stated that if the physical signs of aneurysm are not conclusive an exploratory needle puncture may be made, a procedure which we must emphatically describe as certainly useless and possibly dangerous. The treatment of the various blood diseases is also far from being as complete as it might be. In describing the conditions giving rise to lymphadenitis and to enlargement of lymphatic glands they are all classed under the general term lymphoma, which is liable to give rise to considerable confusion, that word being usually restricted to the enlargements of lymphadenoma or Hodgkin's disease.

Diseases of the respiratory organs are dealt with next, and the treatment of some of these, notably pneumonia, pulmonary tuberculosis, and asthma, is given in some detail, while various measures and drugs are recommended. The genito-urinary system and the osseous, muscular, and articular organs are considered and the diseases affecting them are described, and then diagnosis and treatment are outlined. One chapter is devoted to the infectious and contagious fevers; the means of disinfection are well described and the general management and treatment of each disease are given. Another chapter deals with the diseases due to faulty metabolism, to abnormal conditions of the ductless glands, and to variations in internal secretions. In the section devoted to diseases of the nervous system short descriptions of the various diseases are given rather than a consideration of their diagnosis, while their treatment is very briefly described. The concluding chapters are given over to dermatological, otic, and ophthalmic memoranda, and to certain miscellaneous conditions such as anæsthesia and various intoxications and to the methods of keeping case records.

While Dr. Caillé's book is comprehensive in its scope and contains a great deal of information it is on the whole too ambitious in its aims. It would be improved by omitting the general descriptions of the diseases considered, which are of necessity less complete than those in the ordinary text-books of medicine, and by devoting the space to more detail regarding the diagnosis of those diseases from conditions with which they may be confused. Moreover, the descriptions given of treatment are curiously uneven, some being given in detail with actual prescriptions, and others in mere outline or in vague general terms. The book is copiously illustrated and well produced.

---

*On Treatment.* By Harry Campbell, M.D., B.S. Lond., F.R.C.P. Lond., Physician to the North-West London Hospital and to the Hospital for Diseases of the Nervous System, Welbeck-street. London: Baillière, Tindall, and Cox. 1907. Pp. 421. Price 5*s*.

In his preface the author states that in this work he "treats of certain questions of therapeutics from his individual point of view." It is quite refreshing to find such original ideas on a subject so widely written upon as therapeutics. There is a quality about Dr. Campbell's writings that is very attractive and we have perused this volume with much pleasure. The title, perhaps, is a little misleading, for the book does not deal with the actions of drugs in the treatment of various diseases, but is founded on broader and more general lines on which, however, much of a practitioner's success in practice will depend. To the student preparing for examination the work will not appeal, but the young practitioner will find it of considerable value when commencing his private medical work, whilst those who have been long in the routine of their profession will derive many valuable hints as to the general management of their patients.

The earlier chapters of the book on the physician's physical and mental personality contain much that is interesting and instructive, perhaps it may almost be added entertaining. According to the present state of medical education students are trained more for examination purposes than for the actual practice of their profession. After the qualifying examinations are passed much will have to be learned before the knowledge gained in the schools can be with full advantage made use of in the daily routine of medical work. It is on such matters that Dr. Campbell mainly dwells. The "entire mental equipment of the physician" is considered in a most excellent manner. He points out that the physician needs to be versed in many kinds of knowledge. Not only must he be well up in his professional work but he must be a man of the world in the sense that he must be in touch with the life around him, not wrapped up in learned theories and technicalities. Dr. Campbell further remarks that "the physician who is merely learned in the learning of the schools, who refuses to come out of his professional aloofness and study man in his wider relations, is indeed hardly worthy of the name and is sure to prove a failure. The most distinguished career at college will avail him nothing; he is bound to be outstripped by the men who, though greatly his inferiors in learning, have been spending the time that he has devoted to books and the more purely scientific aspect of his profession in acquiring a greater knowledge of mankind and things in general." There is much truth in these observations, and although an extreme course might be taken in either direction, yet an intimate knowledge of human nature apart from scientific considerations will greatly aid the practitioner in the treatment of his patients.

Dr. Campbell's remarks on psycho-therapeutics, clothing, muscular exercise, and diet contain numerous trustworthy hints and suggestions as to the general course of life which individuals should follow in health and in disease. He draws attention to the many evils attaching to a sedentary life, amongst which fixity of the chest and atrophy of the abdominal muscles are not the least. Under normal conditions, and especially in the upright position, the muscles of the abdomen exert considerable pressure upon the abdominal contents. Such pressure, as the author points out, serves two useful purposes: it helps to keep the abdominal viscera in their right position and to prevent an undue accumulation of blood in the splanchnic veins. Hence the advantage in certain digestive disorders of regulated exercises which tend so develop the weakened muscles. In his remarks on diet Dr. Campbell enunciates "certain dietetic truths" which are of considerable importance in insuring good health. He points out that man is an omnivorous being; that it is his vegetable rather than his animal food that requires mastication; that starch can be, and ought to be, by thorough mastication, largely digested in the mouth; "that an untold number of evils result from the prevailing system of pap-feeding"; that often much good can be obtained by reducing the carbonaceous constituents of the food (notably the saccharides) or the proteins; that a long train of ills follows from over-eating; and that frequently it is much more useful to reduce the total quantity of food than to prohibit any particular item in it. These and other statements contain information that will be found useful in giving directions as to conditions brought about by administration of a faulty diet. Students learn but little of such matters during their hospital days, and it is to be regretted that more attention is not given to tuition in a subject that has far-reaching importance.

In conclusion, we may add that the whole book is pervaded with an interest which is not to be found in ordinary text-books, and we believe that it will obtain a popularity which it thoroughly deserves.

---

*Manuel de Gynécologie Pratique.* By Dr. J. Barozzi Ancien Interne des Hôpitaux de Paris. With Preface by L. G. Richelot, Professor agrégé, Membre de l'Académie de Médecine. With 153 figures. Paris: Vigot Frères. 1907. Price 10 francs.

This work is not in any way to be considered as a complete treatise on gynæcology; it is merely intended to be a manual or a vade-mecum. We must not therefore look for the completeness we would expect in a more ambitious book but we may expect to find special stress laid on those subjects which are but imperfectly treated in more extensive works. In writing this book the author has addressed himself rather to those students and practitioners who have not had the advantages of a prolonged clinical study of the subject of gynæcology and who require guidance in their actual practice. The first part of the book is devoted to a discussion of what may be termed generalities, such as the consideration of the meaning and practice of asepsis and antisepsis and the relative advantages of each method. Then follow chapters in which the various methods of examining gynæcological patients are discussed, including a description of the different positions employed. Special care has been taken in the descriptions of the minor operations of gynæcology, which are described in detail, as is, too, the treatment of the patient subsequently to operation. The affections of the vulva, vagina, Fallopian tubes, and ovaries are next considered in order. In discussing herpes of the vulva the author mentions the interesting fact pointed out by M. Fournier that this disease is very constantly met with in cases of chancre of the cervix. Indeed, in any cases of herpes of the vulva, for this reason, the cervix should be examined with special care. In the section on diseases of the vagina the various methods of treating troublesome cases of cervical endometritis are described very fully. A good deal of space is also devoted to the interesting and important question of congestion and sclerosis of the uterus. A good point in each section dealing with the different diseases is the large amount of attention which is given to the indications for the various forms of treatment recommended and the great value which is assigned to strict conservatism in the operative procedures recommended. In the chapter on the treatment of retro-deviations of the uterus by operation statistical tables are given, showing the immediate and remote results of such operations as ventro-fixation, shortening of the round ligaments, and vagino-fixation. In comparing the two tables of the results of total abdominal hysterectomy and subtotal abdominal hysterectomy for fibroid tumours of the uterus it is interesting to note that the mortality of the 823 cases of the former operation is 72, or 11·4 per cent., while the mortality of the latter operation amongst 2426 cases is 191, or 12·7 per cent. These results are in agreement with the opinion held by many surgeons at the present time that there is very little to choose between the mortality of these two procedures. After a very careful examination of the advantages and disadvantages of the abdominal route in the treatment of cancer of the cervix the author comes to the conclusion that abdominal hysterectomy for this disease is only justifiable in certain conditions—namely, when the vaginal operation is contra-indicated by extreme narrowness of the vaginal canal or when it is probable that a cancer which has to a slight extent invaded the tissues outside the uterus possibly may be entirely removed by the abdomen when this could not with certainty be accomplished by the vagina. This book undoubtedly gives a full and clear account of the important facts of gynæcology; it is based very largely on the teaching of Professor Richelot, who contributes the preface.

## LIBRARY TABLE.

*Medical Lectures and Clinical Aphorisms.* By SAMUEL GEE, M.D.Lond., F.R.C.P.Lond., Honorary Physician to H.R.H. the Prince of Wales and Consulting Physician to St. Bartholomew's Hospital. Second Edition. London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 307. Price 5*s.* net.—We would especially draw the attention of our readers to the discourse on "The Nature of Asthma." The remarks formed a lecture given before the Royal College of Physicians of London on March 23rd, 1899. After a careful survey of the various theories which have been suggested as to the pathology of asthma, Dr. Gee arrives at the conclusion that the doctrine of spasmodic asthma is very imperfectly supported by facts, and he believes that "all asthma" is merely a peculiar form of bronchitis and that there is no need for any hypothesis of spasm in order to explain the phenomena of the disease. He considers that in all probability the "bronchia" are obstructed both by secretion and swelling. There are other questions, however, to which he gives no answers, in reference to certain points connected with the "asthmatic tendency." In what does it consist? Why are some persons prone to asthmatic catarrh and others not? Why does the disposition run in families? What is the bond which in so many cases connects the several diatheses of asthma, eczema, and gout? Until these problems receive attention we cannot agree with Dr. Gee in his theories as to the nature of the disease, although his remarks are highly suggestive. The "Clinical Aphorisms" afford interesting reading. They will probably be more interesting to the senior members of the profession, though some of them may well be taken to heart by younger practitioners. Patients are naturally desirous of obtaining an exact prognosis. It is often difficult, however, to turn from physician to prophet, and most observers will agree with the following: "Never give a definite opinion as to how long a patient suffering from phthisis will live, for the only certainty is, that if you do, you will be wrong."

*The Relation of Man to the Animal World.* By Sir SAMUEL WILKS, Bart., M.D. Lond., F.R.S. Hampstead: The Priory Press. Pp. 34. 1*s.* net.—The author of this pamphlet may well be called the "Grand Old Man of Medicine" on account of the unfailing interest he displays in the progress and well-being of his profession, an interest which the passage of the years has in no whit diminished. When we consider that he was the contemporary and fellow-worker of Addison, and like that great physician bore a distinguished part in the unprecedented advance in medicine in the Victorian era, it serves to increase the pleasure with which we find him still defending the methods of scientific research which alone made that progress possible. The pamphlet is a convincing statement of the state of affairs which the most determined of antivivisection propagandists tacitly allow as being the normal relations between man and the lower animals, and from his statement of them the sanction for experimental research upon animals for the benefit of mankind stands irrefutably proved. We recommend these words of a scientist, a naturalist, and a true lover of animals to all interested on either side of the vivisection controversy; they were originally delivered at a church congress at Folkestone, and we trust that they have already borne good fruit amongst their clerical hearers.

*The Microscope and How to Use it: a Handbook for Beginners.* By T. CHARTERIS WHITE, M.R.C.S. Eng., L.D.S., F.R.M.S.; and A. MAURICE AMSLER, M.B., B.S. Lond. London: Robert Sutton. Pp. 160. Price 3*s.* net.—As an introduction to the study of microscopy, whether as a means of recreation or for more serious purposes, the beginner could hardly have a better book than the one under notice, which is now in its third edition and has been revised and enlarged. In it some extremely useful hints are given for the examination and capture of insects, and the suggestions with regard to the mounting of objects, the making of cells, and so on, are exactly what the beginner in microscopy requires. By following attentively the instructions the ingenious student will be able to devise means to overcome the various difficulties with which he is sure to meet if he pursues the study of microscopy with the enthusiasm which that study usually engenders. Another matter worthy of note is that the reader is not confused by too many formulæ. Diatom mounting is dealt with simply and practically, and there are valuable chapters on the delineation of objects and microphotography. This latter subject is one to which Mr. White has devoted special attention and the instruction which he gives is precise and practical. With regard to the delineation of objects, however, some account of the use of the stage micrometer ought to have been included, for no scientific work can be done even in a simple form which does not provide for accurate measurement. Among the additions which have been made to the present edition is a chapter on the staining of bacteria by Dr. Maurice Amsler. It is, as he states, written in as concise and simple a manner as possible and in the 12 pages devoted to the subject five stains, including Gram's iodine solution, and four culture media are mentioned. Within the limits of the space devoted to the subject its treatment is satisfactory, and the medical student as well as the general beginner in microscopy will find this chapter of value. There are one or two misprints in the book which do not call for detailed notice except to point out that on p. 140 the μ unit is made ten times too great. The "$\frac{1}{2500}$th" part of an inch should be $\frac{1}{25000}$th part. "The Marine Aquarium as a Field for Microscopical Research" and "The Microscope at the Sea-side" are sections of the book which will appeal to many, and the account of Mr. White's method for the crystallisation of hydroquinone will be welcomed by all who take an interest in polariscope objects. We remember Mr. White's demonstration with this substance at the Camera Club some years ago and the beautiful effects which he then produced with it. *Apropos* of the present controversy regarding alcohol, Mr. White's method of killing polyps with their tentacles expanded may be mentioned. Into the trough holding the expanded polyps he allows minute drops of whisky to trickle "and become so gradually diffused through the sea water that the polyps becoming accustomed to its blissful influence succumb to it and forget to draw in their tentacles." The book in its present form is a useful addition to the many elementary treatises on the microscope.

---

## JOURNALS AND MAGAZINES.

*The Scottish Medical and Surgical Journal.*—An address entitled "The Physician as Naturalist," delivered by the late Sir William T. Gairdner, and published in the August number of this journal, bears no signs of age upon its face, but we find in a footnote that it is a reprint of a Presidential Address of 1888. In it stress is laid upon the value of a scientific training for the physician, a view with which it is impossible to disagree, though opinions may vary as to the extent to which, when something must go, it is wise to insist upon a knowledge of certain branches of natural science to the exclusion of general culture. Mr. Lewis Beesly writes on Excision of the Hip-joint and the After-treatment thereof, advocating a modification of Koenig's procedure, the remains of the upper end of the femur being moulded to fit into the acetabulum and kept in place by continued abduction.

*The Medical Chronicle.*—The principal article in the August number of this magazine is the first part of a thesis by Dr. Ernest Bosdin Leech on Occult Hæmorrhage in the Gastro-intestinal Tract. By this term, due to Boas, is meant the occurrence of any escape of blood too small to be distinguishable with the naked eye. A very complete account is given of the various methods devised for the recognition of traces of blood in the fæces. Incidentally it is mentioned that experiments seem to show that hæmoglobin is not well absorbed from the intestine, a point of interest in relation to the use of preparations of this substance for the treatment of anæmia. Dr. Judson S. Bury records two cases in which one disease appeared to have a beneficial effect upon another —a case of heart failure improved by an attack of cellulitis and one of muscular wasting and paresis improved by intercurrent small-pox.

*The Edinburgh Medical Journal.*—The August number of this journal opens with a most interesting paper by Dr. K. G. Lennander of Upsala on Abdominal Pain, in which the author maintains that the stomach and intestines, being supplied by the vagus and sympathetic nerves, have no sensation of touch, temperature, or pain. Pain he considers is due in all abdominal affections to implication of the parietal peritoneum or to traction on the mesentery. Professor H. Harvey Littlejohn and Mr. T. W. Drinkwater report three cases of Strychnine Poisoning, and record the important observation that the presence of phenacetin along with strychnine prevents the appearance of the typical reaction with bichromate of potassium. A very unusual case of Multiple Aneurysmal Disease is recorded by Mr. Cecil F. Beadles; there were found aneurysms of both carotid arteries at their bifurcations, several small cerebral aneurysms accompanied with gummatous formations, and dilatation of both coronary arteries of the heart. Notes of a case of Rupture of a Herniated Loop of Bowel by Sudden Contraction of the Abdominal Muscles are given by Dr. Alexander Miles.

---

## POST-GRADUATE STUDY.

WE publish as a rule in the Students' Number of THE LANCET or in the issue following that number an account of the facilities given by the various medical schools and hospitals for post-graduate study. Post-graduate study is divided into three main divisions—the general study of professional subjects, including the special study of some branch, the study of state medicine, and the study of tropical medicine. We have described in the Students' Number the provision made for instructing graduates in the last two divisions, mentioning the procedure necessary to obtain diplomas or certificates for proficiency in them. The following article shows the principal arrangements existing for general post graduate instruction:—

### LONDON.

*The London Post-Graduate Association.*—The London Post-Graduate Association is now so well known that it is hardly necessary to remind our readers that it is composed of the following hospitals and medical schools (general and special)—viz.: *General Hospitals:* Charing Cross, Guy's, King's College, St. Mary's, St. Thomas's, University College, and Westminster. *Special Hospitals:* The Brompton Hospital for Consumption and Diseases of the Chest, the Hospital for Sick Children (Great Ormond-street), the London School of Tropical Medicine, the National Hospital for the Paralysed and Epileptic (Queen-square), and the Royal London Ophthalmic Hospital (Moorfields). One ticket (the charge for which is 10 guineas for a three months' course, or 15 guineas for six months) admits the holder to the clinical instruction in the wards and out-patients' departments, the operations, necropsies, and other hospital practice of all the institutions mentioned above. The holder is also entitled to attend any special post-graduate classes which may be held from time to time at any of the general hospitals named. It is a result of the advances made in medical and surgical science during recent years that the practitioner who is unable to keep himself apace practically with these advances finds he is after a time at a great disadvantage. For the purpose of enabling qualified medical men to keep up to date in their work we can heartily recommend the scheme offered by the London Post Graduate Association, which thus places the best of all the hospital work in London at the disposal of its ticket-holders. The office of the association remains as before at the Examination Hall. Further particulars may be obtained by writing to the Secretary, the London Post-Graduate Association, Examination Hall, Victoria Embankment, London, W.C., or by personal application between the hours of 11.30 A.M. and 1 P.M., and 2 P.M. and 3 P.M. any week-day except Saturday.

*Medical Graduates' College and Polyclinic.*—This institution affords to medical practitioners special facilities for acquiring technical skill and for advancing their medical and scientific knowledge. The building contains lecture- and consulting-rooms, a pathological and clinical laboratory, a Roentgen-ray room, an ophthalmoscope room, a museum, a library, and reading- and waiting-rooms, &c. Cliniques are given each working day of the week except Saturday at 4 P.M., and a lecture on medicine, surgery, or their special branches is delivered daily except Fridays and Saturdays at 5.15 P.M. Classes are also held in otology, laryngology, ophthalmology, radiography, anatomy, nervous diseases, microscopy, urinary analysis, gynæcology, practical bacteriology, mental diseases, hygiene and public health, and operative surgery. Extra classes in any subject are formed to suit the convenience of practitioners unable to attend those already provided. Special tutorial classes are held for practitioners reading for the higher examinations. A complimentary ticket available for three successive days will be issued to any practitioner upon presentation of his visiting card. A monthly journal, the *Polyclinic*, recording the work done in the college, is issued free to subscribers and members. The annual subscription for medical practitioners of either sex, holding qualifications granted in any British dominion, is one guinea. Full information can be obtained from the medical superintendent at the college, 22, Chenies-street, Gower-street, W.C. The autumn session commences on Monday, Sept. 10th.

*Charing Cross Hospital.*—Classes for post-graduate study are held on each Tuesday throughout the sessions of the medical school at Charing Cross Hospital. The fee for each complete course is £1 1*s*. The first of the two winter courses this year will commence in October. Short courses of instruction in special subjects (otology, laryngology, &c.) will be arranged if a sufficient number of gentlemen give in their names as wishing to attend. Further information as to the dates and subjects can be obtained by communicating with the honorary secretary (Dr. Bosanquet) at the hospital.

*The Hospitals of the Seamen's Society.*—In connexion with these hospitals there are two post-graduate schools—viz., (*a*) the London School of Tropical Medicine; and (*b*) the London School of Clinical Medicine.

(*a*) *The London School of Tropical Medicine.*—The school buildings, laboratories, museum, library, &c., are within the grounds of the Branch Hospital Royal Victoria and Albert Dock (Station Connaught-road, Great Eastern Railway). Opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the service or going abroad. In the hospitals of the society are to be found cases of tropical diseases such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning Oct. 1st, Jan. 15th, and May 1st respectively. The laboratory, museum, library, &c., are open daily and clinical instruction is given daily in the wards of the hospitals. The School Course is recognised by the University of Cambridge for their Diploma of Tropical Medicine and Hygiene. Classes are arranged for advanced Helminthology, Protozoology, and Entomology. The lecturers in the school are: Sir P. Manson, F.R.S., Dr. Andrew Duncan, Dr. L. Westenra Sambon, Dr. J. M. H. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, Dr. F. M. Sandwith, Mr Goadby, and Professor W. J. Simpson. The Director is Dr. C. W. Daniels. Certificates are granted after examination to those who complete a full course. Resident chambers are available for students, who must be qualified or in the fifth year of their medical studies. Prize: the Craggs prize of £50 is awarded yearly.

(*b*) *The London School of Clinical Medicine* (for qualified practitioners only).—The lecture rooms, pathological laboratories (two), museum, and operative surgery class-rooms, are in the *Dreadnought* Hospital at Greenwich, and the whole hospital of 250 beds with its Out-Patient Departments is open to students from 10 A.M. till 5 P.M. Medical, Surgical, and Special Department In-patient Cliniques are held upon every afternoon except Saturday by the senior members of the staff and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the assistant physicians and assistant surgeons daily in the forenoon. Practical classes are arranged three times a year in the following subjects: The Practice of Medicine; the Practice of Surgery; Diseases of the Eye; Diseases of the Throat, Nose, and Ear; Diseases of the Skin; Diseases of the Nervous System; Operative Surgery; Clinical Pathology, Microscopy, and Bacteriology; Mental Diseases; Radiography; Dental Surgery; the Administration of Anæsthetics; Hygiene and Public Health; Gynæcology; Surgical Diseases of Women; Surgical Diseases of Children; Medical Diseases of Women; Medical Diseases of Children; Applied Anatomy; and Midwifery. Three sessions of three months' duration are held in each year, beginning on Jan. 15th, May 1st, and Oct. 1st. Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals. Male patients chiefly are received as in-patients by the Seamen's Society but arrangements have been entered into with the Royal Waterloo Hospital for the reception of graduates who desire instruction in diseases of women and children; with the Bethlem Hospital for those who require tuition in mental disease; and with the General Lying-in Hospital, York-road, for the prosecution of study in midwifery. These hospitals are situated on the south side of the river, are directly linked to the *Dreadnought* by both railway and tramway, and are affiliated to the London School of Clinical Medicine. The certificates of the School are recognised by the Admiralty, the War Office, and the University of London (for the higher degrees). The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology on the cadaver. The hospital also offers a wide field for the study of venereal diseases and there is a special department with open-air wards for the treatment of tuberculosis. The teaching staff is: Sir Dyce Duckworth, Dr. Frederick Taylor, Dr. J. Rose Bradford, F.R.S., Dr. R. Tanner Hewlett, Dr. Guthrie Rankin, Sir William H. Bennett, K.C.V.O., Mr. Albert Carless, Mr. William Turner, Mr. Lawrie H. McGavin, Mr. L. Vernon Gargill, Mr. Malcolm Morris, Dr. StClair Thomson, Dr. James Mackenzie Davidson, Dr. S. Russell Wells, Dr. A. Ernest Jones, Mr. Harold Burrows, Mr. E. Rock Carling, Mr. Stephen Mayou, Dr. Wilfrid Fox, Mr. A. Lawrence, Dr. Maynard Horne, Dr. Cecil Hughes, Dr. Vivian B. Orr, Dr. R. E. Delbruck. The extra-mural lecturers are: Dr. James Taylor, Dr. W. H. B. Stoddart, Dr. W. J. R. Simpson, Dr. James Cantlie. Dr. William J. Gow, Dr. Herbert Williamson, Mr. Russell Howard, Mr. Herbert S. Pendlebury, Dr. Alexander Haig, Dr. Robert O. Moon, Dr. Charles O. Hawthorne, Dr. Thomas D. Lister, Dr. William Radford Dakin, Dr. Robert Boxall, and Mr. W. Johnson Smith.

The prospectuses, syllabuses, and other particulars of both schools can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, S E., or from the Medical Superintendents at the Schools.

*West London Post-Graduate College, West London Hospital.*—The West London Post-Graduate College was started in 1895 and three years later its basis was enlarged by the provision for the post-graduates of lecture-, reading-, and waiting-rooms, &c., while owing to the continued growth of the college these were transferred in 1901 to a building especially constructed for the purpose. Over 1300 post-graduates have been enrolled since its establishment, the yearly entry being now about 200. The hospital, which contains 160 beds, is in the main Hammersmith-road, about three miles from Hyde Park Corner, and very accessible by omnibus, tram, or train. The physicians and surgeons attend daily at 2.30 P.M. Post-graduates accompany the staff and the junior staff on their visits to the wards. Instruction is given in the out-patient department daily at 2.15 P.M. by the assistant physicians and assistant surgeons. The out-patient department has recently been enlarged and there is now ample accommodation for post-graduates to see and examine the patients in all the special departments of the hospital. Clinical assistants for special work are appointed from among the post-graduates, and practical classes, limited in number, for instruction in special subjects, as well as in medicine and surgery generally, are held as required. Operations are performed daily at 2.30 P.M. Post-graduates are allowed to stand close to the table and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations. Instruction is given in the administration of anæsthetics by the anæsthetists on the operating days and post-graduates are allowed to administer anæsthetics under their superintendence. Post-mortem examinations are performed at 12 noon, and demonstrations on recent pathological specimens are given on Mondays at 12 noon during each session in the pathological laboratory. Practical lectures and demonstrations are given each afternoon (except Saturdays), at 5 P.M., during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums. The college is licensed for the teaching of operative surgery. The fee is £4 4*s*. each member in a class of four. The practice of the hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal

Army Medical Corps who have obtained leave for further professional study, and the certificate of attendance at the college during such leave is recognised by the Admiralty. The college is recognised by the University of London for hospital practice before the M.D. degree and by the Royal College of Surgeons for the necessary work before the Fellowship examination. The pathological laboratory has just recently been completely reorganised and placed in the hands of the pathologist, Dr. G. C. Low, who attends there during the whole day and gives instruction in Bacteriology and Microscopy and Tropical Medicine. A special class meets on three mornings a week from 11 to 1, and post-graduates joining the class can work in the laboratory at other times under the guidance of the pathologist. A class consists of 12 meetings and commences at the beginning of each month. The fee for this class in bacteriology and microscopy is £3 3*s*. The fee for the hospital practice, including all ordinary demonstrations and lectures, is £1 1*s*. for one week, £2 2*s*. for one month, £5 5*s*. for three months, £8 8*s*. for six months, £12 12*s*. for one year, and £25 for a life ticket; all fees to be paid in advance. A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1s. A vacation class is held each year in August, the fee being £2 2*s*. for the course of one month, including hospital practice, or a ticket for a fortnight's hospital practice, including the lectures, can be obtained for £1 11*s*. 6*d*. The fee for a three months' course of instruction in the administration of anæsthetics, including a special class, is £3 3*s*., or without the class, £2 2*s*. A ticket for any of the above courses will be issued at any date. Arrangements can be made for gentlemen working for higher university examinations to be coached. The Winter Session commences on Monday, Oct. 7th. All communications to be addressed to the Dean, Mr. L. A. Bidwell, Post-Graduate College, West London Hospital, Hammersmith-road, W.

*Hospital for Diseases of the Nervous System*, 73, Welbeck-street, W.—A course of post-graduate lectures on diseases of the nervous system will be given at this hospital on Thursdays, at 5 P.M., as follows.—Oct. 17th: Dr. Harry Campbell, Selected Cases. Oct. 24th: Dr. T. D. Savill, Cases of Brachial Neuritis and Similar Conditions Involving the Arms. Oct. 31st: Dr. Purves Stewart, Cranial Motor Nerve Palsies. Nov. 14th: Dr. Dundas Grant, Some Forms of Nerve Deafness. Nov. 21st: Mr. Laming Evans, The Indications for Arthrodesis of the Shoulder Joint. Nov. 28th: Dr. F. S. Palmer, the Differential Diagnosis of Some of the More Common Types of Paralysis. Dec. 5th: Dr. E. Macnamara, Epilepsy.

*North-East London Post-Graduate College*.—This post-graduate school is established in connexion with the Prince of Wales's General Hospital, Tottenham, N., which is recognised by the University of London as a place of post-graduate study for the M.D. and M.S. degrees and by the India Office for purposes of study leave. Facilities are there afforded to qualified medical practitioners for taking part in the work of an active general hospital of 125 beds and for attending demonstrations of various branches of medicine, surgery, and gynæcology, with opportunities for clinical instruction in diseases of the eye, ear, throat, nose, skin, in fevers, psychological medicine, the administration of anæsthetics, and dentistry. Cliniques, lectures, and demonstrations are given by members of the teaching staff in the lecture room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed every afternoon of the week except Saturday. Special classes, the attendance at which will be limited, are arranged in gynæcology, the surgical diseases of children, including orthopædic surgery, diseases of the throat, nose, and ear, diagnosis of diseases of the chest, diagnosis of diseases of the nervous system, ophthalmoscopy and refraction, analysis of gastric contents, clinical examination of the blood, diseases of the skin, abdominal surgery, radiography, bacteriology, and medical electricity. The fee for a three months' course of study, which may be begun at any time, in any single department, is one guinea. A fee of three guineas admits to the whole practice of the hospital for a similer term (one month two guineas), and a perpetual ticket for the practice of the hospital may for the present be obtained on payment of a fee of five guineas. Medical practitioners who have attended a three months' course in any departments are eligible for appointment as clinical assistants in those departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A pathological museum and a pathological laboratory are available. A reading- and a writing-room, containing a reference and lending library, is provided, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham).

The lecturers are as follows:—In General Medicine: Dr. Percy Kidd, Dr. R. Murray Leslie, Dr. G. P. Chappel, Dr. A. J. Whiting, Dr. A. G. Auld, Dr. T. R. Whipham, and Dr. D. Forsyth. In General Surgery: Mr. John Langton, Mr. Walter Edmunds, and Mr. H. W. Carson. In Gynæcology and Obstetrics: Dr. Arthur Giles. In Diseases of the Eye: Mr. R. Philip Brooks. In Diseases of the Ear, Throat, and Nose: Mr. H. W. Carson. In Diseases of the Skin: Dr. G. Norman Meachen. In Fevers (at the North-Eastern Fever Hospital, St. Anne's-road): Dr. Frederic Thomson. In Diseases of Children: Dr. G. F. Still. In Diseases of the Chest (at the Mount Vernon Hospital and the Northwood Sanatorium): Dr. J. E. Squire. In Tropical Medicine: Mr. James Cantlie. In Radiography and Medical Electricity: Dr. A. Pirie. In the Administration of Anæsthetics: Mr. A. de Prenderville. In Pathology and Bacteriology: Dr. Macdonald. In Clinical Pathology: Dr. Basil Price.

The opening lecture of the winter session, in conjunction with that of the North-East London Clinical Society, will be given at the hospital at 4 P.M. on Oct. 3rd by Dr. W. Hale White. Further information, with prospectus and syllabus of lectures and demonstrations, may be obtained from the Dean of the School, Dr. A. J. Whiting, 142, Harley-street, London, W.

### PROVINCIAL.

*Birmingham*.—At the University of Birmingham special courses for post-graduates have not yet been instituted, except in the subject of Advanced Bacteriology (January to March) and Clinical Pathology and Bacteriology (April to June), but the various departments of the University are open to graduates who can attend any of the systematic courses on payment of a fee. Graduates may also work in the laboratories under the supervision of the professors for a small fee to cover the incidental expenses. Applications for information should be made to the Dean.

*Bristol*.—Courses of post-graduate instruction adapted to the requirements of those proceeding to the M.D. degree of the Universities, each lasting about 12 weeks, will be held at the Bristol Royal Infirmary and General Hospital. The course will consist of: (*a*) clinical demonstrations on cases selected from the wards and from out-patients in medicine, obstetrics, dermatology, and laryngology; and (*b*) tutorial classes in medicine, obstetrics, pathology, laryngology, bacteriology, and dermatology. Classes in clinical medicine will be held twice a week—once at the Infirmary and once at the Hospital—by Dr. J. E. Shaw and Dr. F. H. Edgeworth at the Infirmary and by Dr. J. Michell Clarke and Dr. J. O. Symes at the Hospital. Classes in obstetrics will be held once a week on alternate weeks at the Infirmary and Hospital by Dr. Walter C. Swayne and Mr. D. C. Rayner respectively. A class in pathology will be taken once a week in the museums of the Infirmary and Hospital on alternate weeks by Professor Walker Hall and Dr. Carey Coombs respectively. Six demonstrations on dermatology will be given by Dr. J. A. Nixon and Dr. W. K. Wills at the Infirmary and Hospital. Six demonstrations on laryngology will be given by Dr. Watson Williams at the Infirmary. A practical course in bacteriology consisting of six demonstrations will be held by Professor Stanley Kent at University College. A tutorial class in medicine will be held on one evening a week by Dr. G. Parker, Dr. Newman Neild, and Dr. J. R. Charles in rotation and a similar class in obstetrics will be taken once a week by Dr. Walter Swayne and Mr. Rayner alternately. The fees are as follows:—For the whole course, £7 7*s*.; for classes in clinical medicine, pathology, laryngology, and bacteriology and tutorial class in medicine, £5 5*s*.; for classes in obstetrics, pathology, and bacteriology, £3 3*s*.; and for clinical medicine and obstetrics only, £3 3*s*. Applications to attend the classes should be made to Dr. Walter Swayne, 56, St. Paul's-road, Clifton, Bristol.

*Cambridge*.—Long vacation courses are held at Cambridge during the month of July and the first fortnight in August. This year the course included lectures and demonstrations on general and special pathology by Professor G. Sims Woodhead, Professor Nuttall, Dr. Louis Cobbett, Dr. W. Malden, and Dr. G. S. Graham Smith on phagocytosis, toxins and antitoxins, methods of standardisation, the blood, diphtheria, tuberculosis, agglutinins and agglutination methods, precipitins, and hæmolysins. If a large enough number of names are sent in a course in pharmacology (Dr. W. E. Dixon) and a series of lectures and demonstrations on protozoal diseases (Dr. G. H. F. Nuttall) can also be arranged. The pathological and pharmacological laboratories are open to advanced students and graduates. Applications for information should be made early in the year to Professor Sims Woodhead.

*Leeds.*—For the past two years a course of post-graduate demonstrations has been held by members of the staff of the Leeds Public Dispensary. The course has been well attended, but the desire being that the instruction should be eminently practical and demonstrative rather than didactic, the attendance has been fixed at a maximum of 20. On each occasion the number of applicants to attend the class has been in excess of this, and the class will in consequence of this encouragement be continued and developed. Very great facilities are afforded in the pathological and physiological departments for work in connexion with the D.P.H. diploma and for private research, and there are always some qualified men dissecting in the anatomy department. During the summer a class on applied anatomy is held by the professor of anatomy and this forms a useful means of qualified men keeping up a knowledge of anatomy.

*Liverpool.*—At the University of Liverpool the department of Bio-chemistry is devoted entirely to post-graduate teaching and research upon chemistry in relationship to biology and medicine. The laboratory is open daily for research, and courses of laboratory instruction in those parts of the subject most closely related to medical work are given for medical practitioners by arrangement with Professor B. Moore. A course of lectures and demonstrations in comparative bacteriology and parasitology is given during the autumn and Lent terms by Professor H. E. Annett, who also conducts a course of lectures and demonstrations in comparative pathology during the summer term. By special arrangement a practical course in clinical bacteriology and hæmatology is given twice weekly during the summer term by Dr. W. B. Warrington and Dr. E. E. Glynn. The Thompson Yates and the Johnston laboratories are open for post-graduate research in pathology and physiology during the winter and summer sessions under the supervision of Professor Sir Rubert Boyce and Professor C. S. Sherrington. A course of lectures in cytology is given in the summer and another in the winter by Mr. C. E. Walker. These are free to post-graduates. Courses on special subjects are given by other lecturers of the University during the summer session by arrangement with medical practitioners. At the Liverpool Royal Infirmary special arrangements exist whereby medical practitioners can keep in touch with the most recent methods adopted in hospital practice. Three courses annually are given in Tropical Medicine and Parasitology in the Liverpool School of Tropical Medicine in the University, and a Diploma in Tropical Medicine is granted.

*Manchester.*—The plan adopted a few years ago of having special courses of lectures on medicine and surgery for qualified medical men has since that time been considerably modified. Classes are now held and lectures given on various special subjects, as, e.g., diseases of the heart, diseases of the respiratory organs, of the kidney, and so on, and the same obtains as to surgical matters. These lectures are designed to meet the wants of senior students and practitioners. The public health department, presided over by Professor Delépine, is largely attended by medical men, as are also the lectures on bacteriology given in the College course by Dr. Sidebotham. There is no difficulty in Manchester in the way of any practitioner who wants to have his recollections revived or his knowledge enlarged and brought up to the present standard in accomplishing his wish.

*Sheffield.*—At the University of Sheffield post-graduate courses are held annually. The subjects vary from time to time and include bacteriology, physiology, applied anatomy, surgery, operative surgery, ophthalmic surgery, diseases of ear and throat, dermatology, &c.

*Newcastle-upon-Tyne.*—At the University of Durham courses of instruction are given in chemical and physical laboratory work and lectures are delivered on comparative pathology and practical bacteriology for the Diploma in Public Health and the Degree of Bachelor in Hygiene.

### SCOTLAND.

*Aberdeen.*—Although there is no special provision at Aberdeen for post-graduate study such as exists in London, still there are some facilities for doing work of this nature at the University. There are fully equipped laboratories in anatomy, anthropometry, bacteriology, botany, chemistry, pharmacology, physics, physiology, public health, and zoology. Graduates or others desiring to engage in special study or research may be admitted by the Senatus to prosecute such study or research in any of the laboratories in accordance with certain provisions. Research students are exempted from payment of laboratory fees but are required to matriculate each year, paying the ordinary matriculation fee (£1 1*s.* for winter and summer; 10*s.* 6*d.* for summer). Forms of application for admission as research students may be had from the secretary of the Senatus. The fees are £3 3*s.* for six hours per week in winter or nine hours per week in summer, 10*s.* 6*d.* and 7*s.* being charged for every extra hour per week in winter and summer respectively. The fee for the Public Health Laboratory for six months is £6 6*s.*, and for the bacteriological laboratory for three months is £4 4*s.*, £3 3*s.*, and £1 11*s.* 6*d.* being respectively charged for a half course or any less time. At the Royal Lunatic Asylum, accommodating above 700 patients (fees, £2 2*s.* for three months), arrangements are made for extra teaching in the higher departments of medical psychology and cerebral pathology for graduates who desire it or wish to obtain the certificate of the Medico-Psychological Association of Great Britain and Ireland. Clinical work may be done at the following places:—(General Hospital): Aberdeen Royal Infirmary (accommodating 200 patients, perpetual ticket £6, or first year £3 10*s.* and second year £3, thereafter free); Sick Children's Hospital (75 patients; first year £2 2*s.*, then £1 1*s.*); City (Fever) Hospital (100 beds; £1 1*s.* for three months); General Dispensary and Lying-in and Vaccine Institution (10,000 out-patients per annum; perpetual fee, £3 3*s.*); and Ophthalmic Institution (16,000 patients per annum, fee £1 1*s.*). During the summer session (April to June) special classes, each costing £2 2*s.*, are held at the Royal Infirmary, the subjects being Diseases of the Skin, Medical Electricity, Dental Surgery, Anæsthetics, Ophthalmology, and Gynæcology. Lectures on Diseases of the Ear and Throat are given at the dispensary and on Tropical Medicine at Marischal College. In Tropical Medicine the course embraces attendance on (1) the ordinary course of Bacteriology (Systematic and Practical) as required for M.B., Ch.B., or D.P.H.; and (2) special course of 25 lectures on Tropical Medicine. A detailed account it given of malarial fevers, including hæmoglobinuric fever, yellow fever, plague, dengue, Malta fever, heat stroke, and other fevers found in the tropics, beri-beri, cholera, dysentery, sprue, tropical liver diseases, leprosy, yaws, oriental sore, filariasis, and parasites generally, and mycetoma.

*Edinburgh.*—The arrangements for this course have been completed. The course begins on Monday, Sept. 2nd, and lasts until Saturday, Sept. 28th. The composite fee for the four weeks' course is £5 5*s.*, or £3 3*s.* for either the first or second fortnight. A special additional fee of £1 1*s.* is charged for the following classes which will be limited in numbers: Diseases of the Blood (elementary and advanced); Bacteriology (elementary and advanced); Gastric Methods; Pathological Methods; Ophthalmoscopy; Errors of Refraction; Diseases of the Ear, Throat, and Nose; and X Ray and Electrical Work. Places in the limited classes will be allocated in the order in which the names are received. The other courses of instruction which will be supplied are: Applied Anatomy, Anæsthetics, Diseases of Children, Dietetics, Diseases of the Heart, Infant Feeding, Infectious Diseases, Neurology, Diseases of the Skin, Surgical Pathology, Surgery of the Urinary Tract, Tropical Diseases, Examination of the Urine, Venereal Diseases; while in addition Medical and Surgical Clinics will be given in the wards and some special lectures will be delivered. In addition to the foregoing an Operative Surgery Class has been arranged for, the fee for which is £5 5*s.* in addition to the composite fee for the course. The detailed prospectus of the course can be obtained by applying to the Secretary, Medical Faculty Office, University New Buildings, Edinburgh.

*Glasgow.*—At Glasgow the possibilities for post-graduate work are considerable and in almost every department graduates have opportunities for acquiring more special knowledge or carrying on original work. In pathology, courses in "Practical Bacteriology" and "Pathological Histology" for graduates will be commenced in the pathological department of the Western Infirmary on Monday, Oct. 21st. The courses will extend over eight weeks, each class meeting thrice weekly. The fee for either course is £3 3*s.*, and for both courses £5 5*s.* In the Pathological Institute there is a limited number of rooms specially fitted up for research work and arrangements can be made for graduates who are desirous of engaging in work of this nature. Those interested in embryology may take out the practical course, or if they desire to do special work may obtain the use of a table in the embryology laboratory with such guidance and help as the lecturer can give. The University also has the right of nomination to a table in the laboratory of the Marine Biological Station at Millport. This station is happily circumstanced as regards the richness and variety of the fauna which can readily be obtained and kept alive in the tank rooms under approximately natural conditions. It thus offers facilities for various kinds of biological study and particularly for physiological and pharmacological work on the marine invertebrates. Further information regarding the station can be got from the honorary secretary, Mr. Geo. Middleton, 83, Bath-street, Glasgow. Post-graduate instruction in public health laboratory work is given in the university laboratory during both winter and summer sessions, and opportunities are offered under prescribed conditions for original research work. In physiology and materia medica such facilities as are possible are afforded to those wishing to engage in original research work. A course of lectures on Physiological Chemistry will be delivered in the winter months by Dr. E. P. Cathcart, university lecturer on Physiological Chemistry. It may be noted that new laboratories for physiology, materia medica, and public health have just been erected. These laboratories are provided with rooms suitably equipped for research work, in which graduates will be able to work in absolute privacy except in so far as they may wish advice and assistance from the teaching staff. Post-graduate class in Glasgow Eye Infirmary on Ophthalmoscopy and Refraction Testing, conducted by Freeland Fergus, M.D., will meet on Tuesdays and Fridays during October and November and the first half of December. Fee £1 1*s.* A class will also be conducted by Dr. Fergus on the Physiology of Vision during October, November, December, January, and February. It is open to practitioners and senior students and will be held in the Western Medical School. At the Maternity Hospital courses in midwifery commence every month. The fee for the first month is £2 2*s.* and later is £1 1*s.* per month. Those taking out this course see all the work of the hospital and are allowed to undertake obstetric cases and minor operations, both in the internal and external work of the hospital. The opportunities thus afforded are exceptional when we consider that each year on an average 20 Cæsarean sections are performed and forceps are used in 250 cases. At Anderson's College Medical School a six months' course of laboratory instruction in public health is given which is recognised by the Scottish colleges and by the University of Cambridge as qualifying for their Diplomas in Public Health. Supplementary to the laboratory work a three months' course of lectures is given when required on "Physics, Meteorology, Practical Sanitation, Sanitary Law, and Vital Statistics." By attendance on this course candidates for D.P.H. are exempted from three months of the necessary six months' outdoor work. Graduates desirous of taking out a course of operative surgery can obtain the necessary facilities by arrangement with the Dean of Anderson's College. At the Royal Infirmary two terms have already been held during the year, one in January and a second in May and June. These have proved most successful. The experience of last year showed that the medical men who attended the winter and spring courses were drawn mostly from the city and surrounding districts, whereas those who selected the autumn courses not only included a large number of country practitioners from the West of Scotland, but also graduates from abroad or from considerable distances. In making arrangements for the autumn session, beginning on Tuesday, Sept. 3rd, the staff have tried to meet the requirements of the latter by concentrating the courses within the period of one month and as far as possible filling up each day, while at the same time the time-table has been carefully arranged so as to avoid the hours of meeting interfering with one another. The hospital, owing to the enormous crowd of patients seeking relief within its walls and the abundant opportunities the wards afford of studying disease in all its phases, is specially well adapted for the carrying on of Post-graduate medical classes.

The syllabus includes the following lectures and demonstrations:—Clinical Medicine: Dr. T. K. Monro and Dr. J. M. Cowan. Clinical Surgery: Mr. John Barlow, Mr. Rutherfurd, and Dr. A. N. M'Gregor. Hæmatology: Dr. Walter K. Hunter. Surgical Diseases of the Urinary Organs: Dr. David Newman. Clinical Examination of the Urine: Dr. John Henderson. Diseases of the Ear: Dr. J. Kerr Love. Demonstrations on Diseases and Injuries of the Eye: Dr. A. Maitland Ramsay. Diseases of the Throat and Nose: Dr. Robert Fullerton. Anæsthetics: Dr. J. King Patrick. Gynæcological Pathology: Dr. W. D. M'Farlane. Electro-Therapeutics: Mr. James R. Riddell. Gynæcology: Dr. Balfour Marshall. Operative Surgery: Mr. Peter Paterson. Bacteriology: Mr. David M'Crorie.

The opening lecture will be given on Tuesday, Sept. 3rd, when the Honourable the Lord Provost of Glasgow will occupy the chair, and an address will be delivered in the dispensary hall by Sir Almroth Edward Wright of St. Mary's Hospital, London. Application for these classes and demonstrations should be made to Dr. J. Maxtone Thom, the superintendent of the infirmary, who will enrol members, supply copies of syllabus, and give any further information desired. Some of the classes must necessarily be limited as to number, it is therefore to be noted that enrolment to these will be made in the order of application.

### IRELAND.

*Belfast.*—At Queen's College a course in clinical pathology, consisting chiefly of practical instruction, is given during the summer session, and, should a sufficient number desire to attend, a post-graduate course of practical work in the application of methods of chemical physiology to clinical investigation is also held. A course in clinical pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in this department for the public health committee of the Belfast corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, and the diagnosis of cases of infectious diseases. Subject to the number of students presenting themselves, arrangements are made for the necessary practical instruction (1) in the chemical laboratories; (2) in the pathological and bacteriological laboratories; and (3) for outdoor sanitary work under the medical officer of health of Belfast. These courses have been approved by the Privy Council in connexion with the degree of M.D. in State Medicine in the University of London. The certificates of these courses are also accepted for the diploma in public health granted by the Royal University of Ireland, the University of Cambridge, and the various licensing bodies.

*Dublin.*—Under the auspices of the Royal Colleges of Surgeons in Ireland arrangements have been made for conducting two courses of post-graduate study during each year in the months of June and September respectively. The instruction is given in the general and special hospitals of the city. A fee of £5 5*s.* is charged for each course. Particulars of these courses can be obtained from the Dean of the Medical School of the Royal College of Surgeons in Ireland.

In connexion with the Catholic University School of Medicine post-graduate courses are also held during the months of June and September. The fee for each course is £5 5*s.*, and application for particulars should be made to the Registrar of the Medical School of the Catholic University.

---

THE CONGRESS ON SCHOOL HYGIENE. — The French Minister of Public Instruction has accorded to Miss Alice H. Brunton, the daughter of Sir Lauder Brunton, the diploma of Officier de l'Instruction Publique in recognition of her services to the recent Second International Congress on School Hygiene.

REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.—The medical referees for Lanarkshire under the new Workmen's Compensation Act, which came into force in the beginning of July, have just been appointed. Under the old Act there were seven medical men appointed for the sheriffdom of Lanarkshire, but on this occasion the number has been reduced to five. They are as follows: Dr. James Barras, Dr. D. Macartney, Dr. D. Newman, Dr. J. C. Renton, and Dr. D. C. McVail.

# THE
# BRITISH MEDICAL ASSOCIATION.

## MEETING AT EXETER.

## THE SECTIONS.

### PATHOLOGY.

THURSDAY, AUGUST 1ST.

THE proceedings opened with a communication on

*Experimental Chemotherapy in Trypanosome Infections*

by Dr. CARL H. BROWNING (Glasgow), who stated that the greatest promise of successfully combating diseases due to trypanosomes seemed to lie in specific chemotherapy, hence the value of experimental investigation on this subject. He referred to the results which he had obtained in the laboratory of Professor Ehrlich at Frankfort-on-the-Main. The scope of his very extended series of experiments was considerable and embraced the treatment of highly virulent nagana infections in mice by means of the acetyl and paroxybenzaldehyde derivatives of para-amidophenylarsenic acid (of which acid, as had been shown by Ehrlich and Bertheim, atoxyl was the sodium salt), and in this part of the investigation a remarkably high percentage of permanent cures was ultimately obtained. Dr. Browning proceeded to discuss an extremely interesting phase of his experimental work, the gradual development, during the administration of these drugs, of chemo-resistant strains of trypanosomes which are no longer susceptible to the influence of the drugs employed. He then showed amongst other further properties of these chemo-resistant strains that the resistance to any one or more specific drugs was transmitted almost without diminution to succeeding generations of parasites, but that trypanosomes which had been immunised, so to speak, to one *group* of chemo-therapeutic agents remained susceptible to other groups; in other words, each group of chemotherapeutic agents combined with different chemo-receptors of the protoplasm of the parasitic trypanosomes, thereby establishing the reason for the efficiency and the efficacy of the combined treatment by a variety of groups, as compared with the results obtained when only one group was exhibited. These observations were received with great interest by the members present, and in reply to a query from the PRESIDENT (Professor R. MUIR of Glasgow) Dr. Browning stated that his opinion was that the resistance exhibited by the trypanosomes to drug groups was a natural, though but slightly marked, characteristic which was merely accentuated by certain methods of treatment.

Dr. H. BAYON (London) read a paper on

*Endotheliomata and Peritheliomata and their Position in Oncology.*

He said that the conclusions drawn from the study of endothelial and peritheliomatic growths were that the name "endotheliomata" ought to be exclusively reserved for those growths which really showed similarity in disposition, position, and general morphology to the genuine endothelium which was the lining membrane of blood-vessels and lymphatics, and that from a purely morphological standpoint it was inadmissible to make use of the expression "peritheliomata" to designate growths of a peculiar class. The simple morphological expression "perithelioma" (in order to mark the principal peculiarity in the appearance of the growth) was alone requisite, because, with the single exception of growths of the carotid body, a somewhat indefinite cellular element was the subject of investigation. Among the growths which might be called of a definite cell type—that is, growths which showed the smallest degree of anaplasia—the hypernephroma or growth peculiar to the adrenal body must be accorded the most prominent place. Growths which appeared to originate from the lining membrane of the pleural, the pericardial, or the peritoneal cavity could with exactitude be considered as endotheliomata, but required to be classed by themselves. Similar treatment should be accorded to growths peculiar to the hypophysis, thyroid, so-called parathyroid glands, and adrenal bodies. Dr. Bayon concluded that though his attitude remained unchanged so far as concerned the opinion that carcinoma was carcinoma from the very earliest beginning, he could not maintain a similar radical standpoint regarding sarcoma.

Dr. B. H. SPILSBURY (London) regarded peri- and endotheliomata as essentially similar histologically. The layer of structureless hyaline material which lay between the tumour cells and the endothelium lining the vessel in peritheliomata, and which alone served to distinguish them from endotheliomata, varied considerably in thickness and often could only be distinguished with difficulty. Endotheliomata and peritheliomata were probably closely related to sarcomata, into which they exhibited a marked tendency to merge, and this change was well illustrated by the development of congenital pigmented nævoid tissue in the skin into melanotic sarcoma.

Dr. BAYON in his reply disagreed *in toto* with these views.

The previously arranged discussion on

*Phagocytosis and Bactericidal Action*

was then introduced by Dr. GEORGE DEAN (London), who, having first alluded to the great importance of Metchnikoff's theory of phagocytosis, remarked that even while upholding the cell as the essential factor, Metchnikoff and his pupils could not long overlook the part played by the body fluids in the processes of protection. The work of Nuttall, Pfeiffer, and others showed that the blood serum alone in the absence of cells had powerful bactericidal properties. It soon appeared, however, that bactericidal effects of serum due to bacteriolytic action could not be demonstrated in the case of all organisms—e.g., staphylococcus and streptococcus. According to Metchnikoff this bactericidal action did not play an important part in the living body under normal conditions, and the bactericidal substance had its origin in the phagocyte and was set free by its death during the process of clotting or, in the case of the living animal, when phagolysis was produced by an excessive dose of bacilli injected experimentally. Bacteriolysis, therefore, was a secondary phenomena to phagolysis. On the other hand, in the case of immune animals there were present in the blood substances which played an important function in aiding phagocytosis. These latter bodies were thermostable, unlike the substance previously referred to, the cytase or complement, readily destroyed by a temperature of 56° C. Two forms of activity had been attributed by Metchnikoff and his pupils to these thermostable bodies: (1) a *stimulin* action; and (2) a *fixative* action. When a highly virulent organism was injected into a normal animal the leucocytes did not show any great disposition to attack the invader. The virulent organism tended to repel, or at least not to attract, the phagocyte. In an immunised animal, on the other hand, no sooner did the virulent organism find an entrance into the body than the leucocytes crowded to the site of infection, surrounded the invaders, and if the immunity was sufficient englobed and destroyed the enemy. Dr. Dean described experiments proving that this property was due to something in the plasma or serum and not to properties of the leucocytes acquired by education or otherwise. Substances which heightened the activity of the leucocytes Metchnikoff had designated "stimulins." In the second view the serum was conceived as acting primarily not on the leucocyte but rather on the microbe, on which a change was produced so that it no longer repelled but rather attracted the phagocyte; in other words, its negative chemiotaxis was converted into a positive chemiotaxis. Owing to the impossibility of detailing even the chief of the earlier contributions on the subject, the speaker referred the members of the section to a brief *résumé* which he had already published in a former paper, and continued that fresh interest in these questions had been awakened especially in this country by the work of Wright and Douglas, who had made a number of observations emphasising the importance of the serum in the mechanism of phagocytosis, and showing for the first time in an unequivocal manner the fact that normal serum as compared with other fluids such as normal salt solution had a powerful action in preparing the microbes for phagocytosis in cases where no bacteriolytic or bactericidal action was apparent. The substance in serum which had this action was found to be thermolabile and was designated by them "opsonin." Dr. Dean then proceeded to review the recent work on these lines, including its clinical application to vaccination for furunculosis, tuberculosis, &c., and detailed a number of his own experiments bearing on the subject. The bulk of the evidence as sifted from the literature and deduced from his own experiments along with those of others, drove him to the conclusion that *opsonin* was not a new substance having a separate activity. The opsoninising action was due, he believed, to the effect produced by two bodies acting together: the one thermostable, known variously as the fixateur, substance, sensibilisatrice, amboceptor, &c., which was the essential substance. Alone it was capable of opsoninising, but its activity was greatly increased by the presence of free complement, known as "cytase," "alexin," &c. The amboceptor was present in very small quantities in normal serum, hence the apparent thermolability of the "opsonin" in normal serum, whereas in an immune serum the amboceptor played a predominant part, and though heating resulted in a loss of activity this was only partial. In both cases the loss was due to the destruction of the complement.

The subject was next approached from a different standpoint in a communication entitled

"*Absorption from the Peritoneal Cavity*,"

in which Dr. B. H. Buxton (New York) referred to certain observations recently made in the laboratory of experimental pathology of the Cornell Medical College on the absorption of particles, such as typhoid bacilli, lamp black, and indigo, previously injected into the peritoneal cavity of the rabbit and the guinea-pig. In all cases there followed a rapid rush of the living or indifferent particles through the lymphatics of the diaphragm along the anterior mediastinal lymphatic trunks into the circulation. They were then rapidly deposited in various organs in such a way that they could not be removed by washing after bleeding the animal to death. Five minutes after injecting a large dose of typhoid bacilli into the peritoneal cavity the organism could be detected in considerable numbers in the peripheral blood of the ear in a free condition and not phagocytosed. At the site of inoculation the large mononuclear hyaline cells of Kanthack acted as macrophages and ingested particles with extreme rapidity. Polynuclear cells are largely absent from the normal peritoneal cavity and those present, usually eosinophiles, are practically inert, and it was not until a later stage that polynuclear phagocytes made their appearance. Dr. Buxton described the action of the macrophages in detail, especially with reference to those in the great omentum, and proceeded to say that from four to six hours after injection the bacilli in the deposited macrophages, unless polynuclear phagocytes had arrived in considerable numbers in the meantime, underwent multiplication and formed secondary centres of infection. Observations upon rabbits actively immunised by repeated doses of killed bacilli showed that their macrophages were capable of dealing with larger numbers of bacilli than those of the normal rabbit, and the contention was advanced that the increased resistance of the immune rabbit was entirely due to increased phagocytic activity. The immune animal possessed no greater bacteriolytic power than the normal one; it was further found that the bacilli were mainly destroyed extracellularly in the latter in contrast to the intracellular digestion of the bacilli in the former. These facts suggested that the rapid death of the normal animal was due to the action of the endotoxins set free by the extracellular destruction of the injected bacilli; while in the case of the rabbit that did not succumb so rapidly the fatal termination was due to generalised septicæmia. Here the number of endotoxins liberated from the fewer bacilli destroyed, while insufficient in amount to produce a rapidly fatal toxæmia, sufficed to inhibit the polynuclear invasion of the peritoneal cavity and so permitted the rapid multiplication of the undestroyed bacilli. It was concluded that the omentum played the chief rôle in the protection of the peritoneum against bacterial infection, partly by mechanical interception, partly by the vital activity of its macrophages.

Dr. J. Charlton Briscoe (London), who followed, confined his remarks chiefly to

*The Character of the Cells concerned in Phagocytosis and the Source of Opsonins*,

and said that the cells which acted as phagocytes could be divided into two classes, the wandering cells and the fixed cells. The most important group of cells in the former class were the polymorphonuclear neutrophiles. Arnette had divided these cells into five groups, basing his simple classification on the form of the nucleus, or rather on the number of the component masses of nuclear protoplasm. The most vigorous phagocytes were found in the third of these groups which comprised cells with nuclei divided into three portions and considered by Arnette to be the adult form. More than four-fifths of the organisms ingested in an opsonin preparation were found in the cells falling under groups 1 to 3. Where leucocytosis occurred following an infection the increase was found in the cells of groups 1 to 3. The alveolar cells of the lungs, the large mononuclear cells found in the peritoneal cavity as the result of an injection of salt solution, some cells of the spleen, bladder cells, and endothelial cells of blood-vessels also acted as phagocytes in the presence of an opsonin. Dr. Briscoe then quoted experiments to show that opsonin was found in the fluid of the peritoneal cavity which normally contains no phagocytes, and that both in this fluid and in the blood the opsonin was considerably weaker if clotting was prevented. He drew the conclusion that opsonin and complement did not arise from the injury or death of phagocytes, as was held by Metchnikoff and his school, but that they existed in the circulating blood in an inactive form (? opsinogen) and that activation occurred as the result of clotting or shedding the fluid and suggested an analogy with fibrin formation. In support of this theory a further series of experiments was quoted. Certain clinical facts also lent support to this view. 1. The opsonic index in a case of septic endocarditis could be kept up by means of vaccine inoculations between 1·5 and 2 without any improvement occurring. 2. The cases which were most successfully treated by means of vaccine injections were those in which the lesion was localised—i.e., staphylomycoses. Here necrosis and fibrin formation occurred. 3. In a case of pulmonary tuberculosis under treatment by vaccine injections controlled by the opsonic index, in which a small hæmoptysis with formation of clot occurred, the bacilli in the sputum were found to be ingested by the alveolar cells and leucocytes. At other times the bacilli were free. Finally Dr. Briscoe quoted another experiment to show that when the serum of an immunised guinea-pig was injected into a normal guinea-pig the amboceptor or immune body could be detected in the urine. This indicated that the amboceptor was a foreign substance and probably the alteration had occurred as the result of clotting.

Dr. T. Houston and Dr. J. C. Rankin (Belfast) communicated a paper on

*The Opsonic and Agglutinative Power of the Serum with Reference to the Meningococcus of Cerebro-Spinal Fever occurring in the Belfast Epidemic*,

in which they gave an account of their work with the meningococcus and its relation to cerebro-spinal fever. Using Wright's method they found that the blood of cases of cerebro-spinal fever, occasionally before, and almost invariably after, the fifth day showed a high opsonic and agglutinative effect with the diplococcus intracellularis of Weichselbaum. They pointed out that this method of agglutination as a test for meningococcic infection was perfectly satisfactory and gave results free from error. Of 114 different cases 40 were examined during the first five days of the disease; ten were positive—i.e., gave a high opsonic index and showed marked agglutinative power—and 30 were negative. Of the 74 cases examined from the sixth day onwards four were convalescent; of the remaining 70 examined from the sixth to the 133rd day of disease 68 gave a positive and two a negative reaction—that is, of the cases examined by this method after the fifth day 97·1 per cent. gave the positive double reaction. As a rule, this reaction disappeared soon after the fever subsided. While the opsonic power was largely destroyed by heat and rapidly diminished on keeping the serum the agglutinative power was much more stable. Their results showed, too, that the cerebrospinal fluid always exhibited much lower opsonic and agglutinative powers than the blood serum collected at the same time. From a study of races of meningococci obtained from Great Britain, Germany, and America, and their reactions with the blood of undoubted cases of cerebro-spinal fever, they came to the conclusion that this disease was due to a meningococcus having invariably the same opsonic and agglutinative reactions. They also brought forward evidence to show that at least one variety of Gram-negative coccus corresponding closely in cultural characters with the diplococcus intracellularis of Weichselbaum was capable of producing meningitis. This coccus differed from the meningococcus of epidemic cerebro-spinal fever both in its opsonic and agglutinative reactions.

Dr. David Lawson (Banchory) then detailed some observations upon

*The Elimination of Opsonins by the Excretory Organs*

which had been carried out in the Banchory Laboratory in conjunction with Dr. James Miller. He said that in considering the phenomenon of the negative phase three explanations suggested themselves—viz., firstly, for the moment there might be a diminished output of opsonic substance; secondly, an undiminished output might be associated with an increased consumption due to more active phagocytosis; and thirdly, the opsonic substance might be eliminated by the excretory organs. The results of his experiments, so far as they related to patients suffering from pulmonary tuberculosis, showed that tuberculo-opsonic substances were eliminated in the urine in amounts capable of estimation; that the amount present in the urine of an inoculated person is for the most part less than that found in the same person's blood; that in fully 40 per cent. of the cases in which systematic observations were made during the negative phase the amount of opsonin present in the urine varied inversely as the amount present in the blood; and, finally, that tuberculo-opsonic substances were eliminated in the sweat. The obvious conclusion suggested by these results was that the fall in the index recording the amount of opsonic substances in the blood was due to an increased activity on the part of the various excretory organs in removing these substances from the blood. One practical outcome of this work related to the treatment of the "sweating" of pulmonary tuberculosis which Dr. Lawson suggested should no longer be allowed to go on unchecked, but which should be controlled, as it used to be some years ago, by the exhibition of atropin, &c.

After some remarks by Dr. L. C. PEEL RITCHIE (Edinburgh),

Dr. F. G. BUSHNELL (Brighton) communicated some observations on

### *Phagocytosis in Myelocythæmia.*

He stated that he had been attempting to determine the essential features of the rôle played by the leucocytes in the phagocytosis of bacteria. His experiments showed that there was a distinct and practically constant diminution of the power of phagocytosis of the patient's leucocytes from a patient suffering from myelocythæmia when estimated under comparable conditions to those of several workers in the Ralli Memorial Laboratory, and myelocytes had a still lower phagocytic power. He concluded that leucocytes differed in their phagocytic power in a functional sense.

Professor J. M. BEATTIE (Sheffield) next discussed

### *The Source of Antibacterial Substances in the Blood.*

Referring to the presence of substances which were injurious to bacteria in the inflammatory exudates met with in the peritoneal cavity and the coexistent increase in polymorphonuclear leucocytes in the same situation he considered that there was no proof of such a close correlation of these factors as would suggest that the anti-substances were the products of the leucocytes. On the contrary, certain reactions pointed to the mononuclear cells—the endothelial cells of the omentum, &c.—as being the ultimate source of these substances. Further, he pointed out, phagocytosis was much more active in "citrated" blood 12 hours after its removal from the body than it was at two hours, greater still at 24 hours, and asked where, then, did that substance which assisted phagocytosis arise? The only conclusion he could offer was that it was derived from the cells, either by secretion or by phagolysis, which latter, it should be remembered, was diminished only and not by any means avoided entirely by the process of citration.

## FRIDAY, AUGUST 2ND.

There being no pre-arranged subject for the morning's discussion, the attention of the section was directed to the reception of several highly interesting communications. The first of these was a paper on

### *The Relations between the Thyroid and the Parathyroid Glands,*

by Dr. DAVID FORSYTH (London) who, after detailing the history of the study of the parathyroid glands, said that the investigations on which the present paper was based began with a series of operations on rabbits and cats. This line of research, however, was abandoned as the fallacies of the operation were found to be great. No conclusive data were available as to the number of parathyroids or their anatomical positions. Further, it was found to be a matter of great difficulty to identify these structures on the operation table from accessory thyroids, lymphatic glands, or thymic residues. A detailed investigation was therefore made of the glands in man and in more than 70 different species of animals (mammals and birds). As a result it was discovered that the parathyroids normally secreted a colloid material resembling thyroid colloid both physically and microchemically. Histological examination of the thyroid and parathyroid glands showed that while there was, as a rule, no difficulty in distinguishing the two structures, not a few instances were met with where the thyroid possessed in part or wholly the features of a parathyroid, and intermediate stages between the two bodies were comparatively common. Dr. Forsyth gave examples of several animals possessing thyroids with parathyroid characters, which pointed strongly to the identity of the two organs.

Immediately following the reading of his paper Dr. FORSYTH demonstrated a striking and convincing series of lantern slides prepared from sections of the various structures he had already referred to, showing the gradual transition from the vesicular formation of the thyroid to the glandular structure without colloid-filled vesicles of the parathyroid.

In the discussion which ensued Dr. BAYON held that Dr. Forsyth's conclusions were not supported by the evidence of clinical observations and quoted five cases of congenital absence of the thyroid where the parathyroids had certainly not assumed the functions of the missing gland as the patients all exhibited the typical symptoms of cretinism.

The PRESIDENT of the section referred to the severe and serious immediate results of the experimental removal of the parathyroids as contrasted with the comparatively trivial symptoms following experimental thyroidectomy as militating against identity of function of the two structures.

Dr. FORSYTH, in a brief reply, reminded the members of the section of the difficulties attending removal of the parathyroid and attributed the severe effects following parathyroidectomy to *injury* of the thyroid (in which gland the parathyroid was imbedded) during the operation.

Dr. A. R. FERGUSON (Cairo) then gave an exhaustive lantern demonstration of

### *Lesions produced by Bilharzia in the Genito-Urinary Tract,*

which was arranged in two parts. The first, comprising some 19 slides, illustrated the naked-eye changes resulting in the ureter (five slides), bladder (seven slides), liver (one slide), and colon (six slides) from invasion of the tissues by the ova of the parasite and the inflammatory response on the part of the tissues affected, in the case of the bladder and the colon, to the secondary septic infection of the ulcerated mucosæ by bacteria. The second part of the demonstration illustrated the histology of the earlier stages of bilharzia infection of the ureter (three slides) and of the bladder (five slides). Particularly interesting were those longitudinal sections of ureter showing the adult sexually mature worms *in situ* in the veins, the male inclosed in the gynæcophoric canal of the female, and illustrating the progress of the worms towards the lumen of the ureter.

Next followed a lantern demonstration of microscopical preparations and schematic drawings upon which were based a somewhat remarkable

### *Account of the Life History and Development of Spirochætæ,*

by Dr. ALEXANDER MCLENNAN (Glasgow). The series included photographs of the spirochæta of yaws and of the spirochæta refringens showing what was stated to be spore formation. Many of the contentions put forward by Dr. McLennan and the interpretations which he placed upon many of his observations appeared alike open to question.

Dr. MCLENNAN then read a paper on

### *The Place the Spirochæta Pallida occupies in the Diagnosis of Syphilis,*

in which he stated that the recognition of the spirochæta pallida was considered to amount to a diagnosis of syphilis. The discrepancy between the intensity of the disease and the numbers of the spirochætæ was held to be due to the probability of the protozoa causing syphilis assuming forms other than the spirochæta type at some stages of their life cycle. The methods available were by examination of a smear, either in the fresh state or after staining, and the examination of sections after the tissue had been treated by Levaditi's method. The presence of a single typical spirochæta in the stained smear went a long way towards making a diagnosis. It was considered that the recognition of the pallida was the difficulty, and in the living state it was not possible to differentiate the pallida from certain types of the refringens. If the presence of the spirochæta pallida were accepted as diagnostic then their demonstration before the appearance of secondary symptoms made the institution of active treatment essential. Silver spirochætæ were held to be definitely proved to be real, and the various reasons for this view were referred to. This method was most useful when the smear method failed. By its aid spirochætæ and syphilis were proved to be associated, but that the spirochæta pallida was the actual cause was still awaiting proof. The inoculation experiments were referred to as strengthening the position of the spirochæta pallida and as proving the reality of the silver spirochætæ.

Dr. BUSHNELL read a paper describing

*A Case of Mycosis Fungoides in its Relation to Infection and Malignant Disease,*

in which he said that the case of mycosis fungoides which he referred to had been studied as one of a series of examples which showed the close and important interrelationships existing between inflammation and malignant neoplasm. In the premycotic stage as well as in the later evolutionary period the disease was a granuloma characterised by diffuseness and absence of capsule formation. In the evolutionary stage when rapid tumour formation supervened it bore a close resemblance to sarcomatosis as evidenced by its rapidly fatal course and the arrangement of its cells and fibres quite comparable to lymphosarcoma.

Dr. CAREY COOMBS (Bristol), described

*The Myocardial Lesions of the Rheumatic Infection.*

He declared his intention of confining his remarks to an account of his own observations on the earlier acute phenomena of rheumatic myocarditis in preference to the residual lesions of later years. First referring to the macroscopical changes he recapitulated the dilatation of the ventricles and the consequent stretching of the auriculo-ventricular rings; aggravated and perpetuated by the atony of the myocardium combined with the associated pericardial adhesions often associated with, but not essential to, the establishment of more or less extensive hypertrophy. The post-mortem records of some of the Bristol hospitals included 89 cases of rheumatic carditis occurring in patients under the age of 16 years. In 51 of these cases the weight of the heart and the age of the patient were both recorded and when analysed showed that in patients with pericardial adhesions the age averaged 11 years and the heart weighed 15 ounces; with valvular sclerosis the age was 14½ years and the heart weighed 12 ounces; with established lesions of both serous layers the age was 15 years and the heart weighed 30 ounces; with early lesions of both serous layers the age was 11½ years and the heart weighed ten ounces. Next, dealing with microscopical changes, the only trustworthy one was fatty changes in the parenchyma, shown in sections along the fibres as irregularly quadrilateral areas scattered through the myocardium, the earliest globules at the poles of the nuclei, the largest at the centre of the cell, and best demonstrated by staining with Sudan III. or Herxheimer's Scharlach R solution. In the opinion of Dr. Coombs the most characteristic of the interstitial changes was the formation of knötchen or submiliary nodules situated in the subendocardial and subpericardial tissues and in the vicinity of the medium-sized and smaller arteries, in some cases in such intimate association as to appear to arise from the adventitia of the arteriole. These nodules contained characteristic cells, arranged in more or less regular whorls, spindle-shaped or oval, the long axis measuring about ten times the diameter of an erythrocyte and containing more than one nucleus. The nuclei stained deeply with Weigert's hæmatoxylin: the cytoplasm, relatively small, stained deeply with thionin. The nature of the cells was obscure, but they were probably the product of connective tissue proliferation in response to an irritant.

Dr. J. J. S. LUCAS (Bristol) then detailed his

*Notes on a Case of Pericardial Calcification*

which had been observed in the Bristol county asylum. The entire pericardium, with the exception of a small area at the apex some two inches square, was completely calcified, but no signs of ossification could be detected throughout its extent.

Next came two communications from Dr. ALDO CASTELLANI (Ceylon) which in his absence were read by the Secretary of the Section (Dr. R. V. SOLLY of Exeter). The first,

*A Note on the Spirochæta of Yaws (Spirochæta Pertenuis),*

described the morphological characters of the spirochæta associated with this disease and its minute histological structure, from a consideration of which Dr. Castellani stated his opinion that the spirochætæ of yaws and of syphilis were totally separate and distinct species. With regard to the incidence of spirochæta in patients suffering from yaws and in monkeys experimentally inoculated, Dr. Castellani's results can best be appreciated when presented in tabular form.

| Material examined. | Man. | | Monkey. | |
|---|---|---|---|---|
| | No. of cases. | Positive findings. | No. of cases. | Positive findings. |
| 1. Primary lesion ... ... ... | 6 | 6 | 16 | 15 |
| 2. Unbroken papules of the general eruption ... ... | 76 | 73 | 3 | 2 |
| 3. Ulcerated papules of the general eruption ... ... | 76 | 52 | | |
| 4. Blood of general circulation ... ... ... ... ... | 20 | *Nil.* | 15 | *Nil.* |
| 5. Spleen juice ... ... ... | 5 | 3 | 4 | 3 |
| 6. Lymphatic glands ... ... | 11 | 6 | 11 | 6 |

From the facts relating to the practically constant association of spirochæta and yaws, the successful results obtained by inoculating the monkey with material containing spirochæta only, and the failure to infect the monkey when similar material had been freed from spirochæta by filtration, the author concludes that yaws must be considered a form of spirochætosis or treponemosis, and that the specific causal agent was in all probability spirochæta (or treponema) pertennis.

Dr. CASTELLANI also communicated a

*Note on a Bacillus found in a Case of Gangrenous Appendicitis,*

in which he detailed observations that led him to believe that the organism was causally associated with the disease.

The proceedings of the section were concluded by two communications by Dr. A. F. DIMMOCK (Harrogate) and Mr. F. W. BRANSOM, F.I.C. The first,

*A Note on a Method of Estimating Creatinin in Urine,*

described a modification of Folin's picric-acid test and was performed by adding to 10 cubic centimetres of the urine 15 cubic centimetres of a saturated solution of picric acid and then 5 cubic centimetres of a 10 per cent. solution of sodium hydrate. After standing for five minutes the mixture is made up to 500 cubic centimetres by the addition of distilled water and its colour compared, in an instrument termed a "chrometer," with that of a standard solution of potassium bichromate. (This standard solution contains 24 54 grammes $K_2Cr_2O_7$ per litre and the colour value of 8 milligrammes of potassium bichromate is stated to be equivalent to 10 milligrammes of creatinin.) The chrometer consisted of a dark chamber with an eye-piece inserted in the top. On looking through the eye-piece two discs of light were visible in the floor of the dark chamber. Inside the chamber and directly over the discs of light were two glass tubes, the one containing the solution to be tested and the second the standard solution, each connected with a levelling tube placed outside the dark chamber. By raising or lowering the levelling tubes the columns of liquid in the tubes in the chamber were raised or lowered until the colour of the test liquid matches that of the standard solution as observed over the disc of light. Finally, the estimation of the amount of creatinin in the specimen was estimated by reading off the height of a pointer outside the apparatus on an attached scale.

The second communication by the same authors,

*A Note on a Method for Determination of Sugar in Urine,*

also involved the use of the chrometer. The process is as follows:—To 50 cubic centimetres of urine add 12·5 cubic centimetres of a 50 per cent. solution of sodic hydrate; boil for one minute, filter and cool; pour the mixture into one of the tubes of the chrometer and into the other tube fill a standard solution of glucose similarly treated; match up the colours in the two columns of fluid by adjusting the levelling tubes and read off the amount of sugar on the attached scale by means of the pointer.

## TROPICAL DISEASES.

### FRIDAY, AUGUST 2ND.

### *Discussion on the Hæmoflagellates.*

Professor E. A. **MINCHIN** (London) introduced the subject of the Hæmoflagellates by remarking that the duty of zoologists was to study animals and animal life with a view to establish their place in nature and their affinities and relationship with other organisms. Medical men were, however, interested directly only in those departments of zoology which appertained to disease, so that a clue to methods of treatment or prevention of disease might be evolved. The naturalist and physician, however, found a common interest in studying the life cycle and development of parasites. Hæmoflagellates were comprised under that class of protozoa which had as organs of locomotion one or two flagella and were parasites in the blood of vertebrated animals. The two most prominent genera of hæmoflagellates were the trypanosoma and the trypanoplasma, the former characterised by possessing an undulatory membrane along the edge of which runs a flagellum projecting at one end, whilst the trypanoplasma has an additional free flagellum. The trypanosomes were parasites of vertebrates, the trypanoplasmata of fish; the former caused serious diseases in men and animals, the latter were looked upon as harmless. In the digestive tracts of insects were found two genera at least, herpetomonas and crithidia; they possessed flagella, but the undulating membrane was either absent or rudimentary. Of insects it was especially amongst the blood-suckers that these genera were met with, a circumstance which was highly suspicious, pointing to their being possibly only stages in the life-history of trypanosomes. It must be noted, however, that the Herpetomonas muscæ domesticæ—i.e., the parasite as met with in the domestic fly—was an independent species. Its presence in the fly had given rise to the theory that the house fly was at one time a blood-sucker. The question of including the spirochætæ amongst the hæmoflagellates and not amongst bacteria is still being debated, but the weight of evidence was now towards the belief that they were really protozoa. It must be noted, however, that a trypanoplasma might become a trypanosoma by the loss of the flagellum which was not connected with the undulating membrane, and a trypanosoma might be derived from a herpetomonas by shifting backwards the origin of the flagellum. The occurrence of herpetomonas forms in the developmental cycle of many species of trypanosomes might be interpreted as an indication of descent from a herpetomonas-like ancestor. Professor Minchin traced the life cycles of hæmoflagellates. Dealing with the herpetomonas of the house fly, he stated that the parasite lived in the intestine of the fly and became encysted in the hind gut, whence the cysts escaped and contaminating the food of other flies were swallowed by them, germinated, and were finally set free as parasites which at once commenced to feed and multiply. He called this the casual or contaminative method of infection as distinct from the direct and indirect transmission methods of infection as accomplished by blood-sucking flies. In direct transmission the parasite was taken up and handed back by the blood-sucking fly without having undergone any change or development; examples of this method were seen in nagana disease of horses and cattle and sleeping sickness in man. Indirect transmission signified that the parasite in the body of the blood-sucking insect underwent a series of changes before being given back again to a new vertebrate host; the malarial parasite in its passage from man to mosquito and back again from mosquito to man was the best known example.

Professor **HANS ZIEMANN** (Cameroons) stated that the fresh trypanosoma infections amongst animals in Lower Guinea were met with only during the rainy season. It was highly probable that the greatest number of fresh trypanosomal infections must be produced by the young brood of the blood-sucking flies which came out in the rainy season. Professor Ziemann said that as the enlarged spleen served as a basis for formulating the malarial index in man, so palpating the glands of animals, such as sheep, goats, and cattle, when possible would serve as a trypanosomal index in countries where trypanosomiasis prevailed; he found also that where sleeping sickness existed there would animals be found infested with trypanosomes, at any rate in the countries with which he was acquainted.

Dr. **ANDREW BALFOUR** (Khartoum) pointed out sources of error in insect examination as evidenced by the discovery of crithidia when looking for an extra-corporeal stage of the hæmogregarines of jerboas in fleas; he also mentioned Christophers's discovery of what was probably a coccidial cyst when searching for a similar stage of the hæmogregarine of Indian jerbils in lice; he stated that similar cysts had also been found in fleas in the Soudan. Dr. Balfour found a typical herpetomonas in Tabanus socius, the commonest serut of the Nile, and one which might possibly be the carrier of the trypanosome of the camel, at least in certain parts of the Kordofan Provinces. The stomoxys might not, according to recent evidence, prove to be the carrier of trypanosomiasis in the Soudan.

Sir **PATRICK MANSON** (London) considered that parasites evolved *pari passu* with their hosts and when these hosts diverged into species, genera, and families the parasites adapted themselves to the altered conditions; the genesis of parasites requiring two hosts dated, therefore, possibly from ancestors which in the history of evolution antedated the differentiation of the arthropods from the vertebrata.

### *Classification of the Hæmoprotozoa.*

Sir **PATRICK MANSON** brought forward a Classification of the Hæmoprotozoa drawn up by Dr. Sambon. Dr. Sambon divided the hæmoprotozoa into four families: I. Hæmogregarinidæ, with one genus hæmogregarina. II. Plasmodidæ, with two genera, (*a*) plasmodium and (*b*) laverania. III. Spiroschaudinniidæ with three genera, (*a*) leucocytozoon, (*b*) spiroschaudinnia, and (*c*) treponema. IV. Hæmoproteidæ: (1) sub-family Hæmoproteinæ, with one genus hæmoproteus; (2) sub-family Trypanosminæ, with four genera, (*a*) babesia, (*b*) leishmania, (*c*) trypanosoma, and (*d*) trypanoplasma. Dr. Sambon based his classification upon the changes in the oökinete. In the hæmogregarinidæ and plasmodidæ the oökinete encysts, but in the spiroschaudinniidæ and hæmoproteidæ the oökinete remains free.

Dr. **LOUIS W. SAMBON** maintained that in sleeping sickness Glossina palpalis acted as a true alterative host and not merely in a mechanical way as suggested by Colonel D. Bruce, R.A.M C., and Professor Minchin. Reproduction of the disease by inoculating the blood from the fly's gut, notwithstanding the presence of many active trypanosomes, had failed, proving that forms in the gut of the fly were gametes that must undergo a special development and were unable to reproduce by schizogony. In the clear fluid in the bulb of the proboscis Koch had found numerous trypanosomes; these were evidently the forms ready to be inoculated into a fresh vertebrate host, leaving by the proboscis and not by the intestine. Brumpt and Leger had shown also that trypanosomes of fish went through a sexual cycle in leeches and each species had its specific leech host. Until the part played by Glossina palpalis was thoroughly worked out it was impossible to formulate an efficient prophylactic system.

Dr. W. C. **PROUT** (Liverpool) contributed a paper on

### *Blackwater Fever.*

In blackwater fever a history of repeated attacks of malaria fever was to be obtained. Amongst the signs and symptoms it would be found that during the stage of hæmoglobinuria the quantity of urine passed was increased, but diminished as the urine cleared. Dr. Prout instanced cases of acute nephritis with hæmaturia mistaken for blackwater fever. Bilious remittent fever and jaundice had also been diagnosed as blackwater fever. The prognosis was not so universally unfavourable as was generally supposed. In regard to treatment the first indication was to get rid of the morbid products by means of the various excretory organs of the body. Calomel was the best purgative. Intravenous injection of normal saline solution was the most efficacious of remedies in very bad cases. The second important step was to counteract the malarial element in the attack; quinine should be given when malarial parasites were found, at least in one dose, watching effects. Supporting the strength and alleviating any distressing symptoms by every available means were urgently called for in all cases of blackwater fever.

Dr. F. W. **MOTT** and Dr. **HELEN G. STEWART** (London) contributed a paper entitled

### *Some Further Observations on the Cell Changes in Dourine and Sleeping Sickness.*

After sketching the work already done in elucidation of the nervous system changes in sleeping sickness the writers stated that from further investigations of the tissues already examined and reported upon they had found in a dourine gland a curious cell with two nuclei apparently encapsuled, and subsequently abnormal cells of diverse types. Reference was made to a new species of trypanosome found in the blood of an Indian bullock at Singapore in which cell forms were found resembling those occurring in sections made by Dr. Mott and Dr. Stewart taken from glands of dogs inoculated nine months previously with the blood of a horse suffering from the secondary stage of dourine. A microscopic section (shown) demonstrated in a dourine gland that the lymph spaces were filled with vacuolated cells, in some of which granules occurred which stained blue with a modified Giemsa stain. Many of them appeared as structureless chromatin particles or even as small masses of pigment, but some consisted of a nucleus and a cell protoplasm with a staining reaction of somewhat different shade from the containing cell; and in the majority of cases there was a small chromatin body resembling a micro-nucleus occurring either as a minute round dot or as a short rod-shaped particle. Within these large vacuolated cells also were found elongated protoplasmic bodies with two or more nuclei. Yet another cell type was met with as an inclusion, consisting of a crescentic chromatin body with some pink staining protoplasm attached to the concave margin. The interpretation of the various observations recorded was not attempted; further investigations were requisite to determine whether the bodies noted were minute abnormal lymphocytes or arose from endogenous cell formations, or whether, on the other hand, they were resting or protoplasmic forms of the trypanosomes.

Dr. Balfour described

### *A Peculiar Blood Condition, probably Parasitic, in Soudanese Fowls.*

When investigating the spirillosis of fowls in the Soudan Dr. Balfour found a spirillum identical with the Spirillum gallinarum and that the parasite was communicated by the fowl tick, the Argas persicus. He observed during these investigations that many fowls exhibited a very curious condition affecting the red corpuscles, and that although the fowls so infected presented symptoms very similar to those exhibited by fowls suffering from spirillosis the temperature curve and the post-mortem findings markedly differed. The temperature, which was normally about 108° F. in the rectum of healthy Soudanese fowls, fell during the illness to 102° or lower just before death. In blood corpuscles when stained by Borrel blue and eosin or by Leishman and Giemsa stains the bodies in question were found in the extra-nuclear portions of the red blood corpuscles. They might be close to the nucleus or at the outer edge of the corpuscle and they varied in number from one to seven in each corpuscle as well as in size and shape. These bodies did not exhibit the stains usual in hæmatozoa and there were appearances which suggested the presence of chromatin either as a single dot at the pointed end of a plume-shaped form or as a series of dots arranged usually at fairly definite intervals round a spherical or diamond-shaped body; or scattered irregularly about a spherical form. By artificial light these dots showed the true chromatin-red colour. In addition, there were masses or streaks of the same material. The intra-corpuscular bodies were unpigmented and very resistant. Post-mortem findings showed no gross lesions. Dr. Balfour believed the bodies he described to be hæmatozoa belonging either to a new class or as identical with the piroplasm of the bird. He based his conclusions on the appearance of the fresh blood, the results obtained by the modified Ross method of staining, the general arrangement of the stained parasites in the corpuscles, the possible formation of tiny spores, and the association of the bodies with a definite disease.

Captain S. R. Christophers, I.M.S., contributed a paper on

### *The Development of Piroplasma Canis in the Tick.*

In previous communications Captain Christophers had described in the tick R. sanguinens fed on dogs infected with piroplasma canis the club-shaped bodies of Koch and had given a description of developmental stages of piroplasma canis leading up to the formation of swarms of sporozoit-like bodies in the salivary glands of the nymph and adult of the second generation. In the present communication Captain Christophers had filled up gaps and corrected certain errors of interpretation, so that now the cycle of development could be clearly followed. One feature in the developmental processes of the parasite in the tick noted was that after reaching a certain size an achromatic line divided the parasite into two parts of almost equal size, one containing the chromatin mass whilst the other contained no chromatin. These portions separated except at one point and became arranged so that the chromatin half became the anterior portion. The club-shaped bodies thus formed became vermicular in appearance at the anterior end, left the gut, and occupied the ovary and oviducts. In many ways the piroplasma resembled the development of the malarial parasite, but in the former the zygotes seldom went through division into sporozoits in the cell originally invaded, and the sporozoits when formed were more or less disseminated through the tissues. The concise history showed that a parasite in the gut of the adult tick enlarged and became a motile club-shaped body which left the gut and penetrated an ovum where it became a zygote. The zygote enlarged and broke into sporoblasts which disseminated in the tissues of the larva. In the glands of the nymph miniature sporozoits had collected and in the glands of the adult mature sporozoits were found.

Dr. George A. Williamson (Cyprus) contributed

### *A Further Note on Bilharzia (Schistosomum) Disease in Cyprus.*

In 1902 Dr. Williamson reported a case of bilharzia in Cyprus and from the same district of the island three persons came under his notice during March, 1907. At Morphou he found an endemic centre of the disease; of eight children at the local school five were found to have blood and ova in their urine; the villagers at Morphou stated that the disease occurred in persons who bathed, waded, or fished in the water in the bed of the river Syrianokhori. Amongst females who did not frequent the river no infection was found.

Lieutenant-Colonel C. Birt, R.A.M.C., from observations during eight years in South Africa related his experiences of

### *South African Diseases.*

Enteric fever was widely prevalent and differed in no detail from that met with in Europe. Kaffirs suffered severely from typhoid fever. Abortive typhoid fever causing fever lasting for from two to 10 days had been proved to exist not infrequently, the Widal reaction in each case proving positive; these mild cases were dangerous, as the patients frequently went about and thus disseminated the disease by infecting watercourses. Flies and ants no doubt served also to spread enteric fever. Lieutenant-Colonel Birt spoke favourably of Wright's typhoid vaccine; not only was the incidence of the disease reduced by half but when typhoid fever did occur the mortality of the inoculated was just half that of the uninoculated. The use of inoculations during typhoid fever was also advocated. Dysentery and diarrhœa caused nearly one-fourth of the total number of deaths in Johannesburg. Shiga's bacillus was found in half the cases examined; amœbic dysentery was proved in one of the 55 cases reported upon. Multiple hepatic abscesses were found in 28 out of 58 necropsies of dysenteric fatalities. Lieutenant-Colonel Birt found anti-dysenteric serum efficacious in many cases of dysentery. Pneumonia was very prevalent amongst Kaffirs and tuberculosis was responsible for about one-sixth of the total mortality among Kaffirs. Bilharzia was endemic in Northern Nigeria. Mediterranean fever was endemic in many districts of the Orange River Colony where goats provided the milk-supply. Malaria was rarely met with in Harrismith, Bloemfontein, or Pretoria.

Lieutenant-Colonel Birt also contributed a paper on

### *Mediterranean Fever in South Africa.*

He regarded subcutaneous inoculation of minute doses of micrococcus Melitensis vaccine as highly beneficial in Mediterranean fever and quoted several other observers who supported its efficacy.

Dr. Charles Begg (Bath) sent a paper on

### *Complications Found in Chronic Cases of Sprue.*

He regarded sprue as an invasion of the mucous membrane of the intestinal canal by microbes causing a chronic form of destructive inflammation and considered pancreatitis a frequent complication. Careful analysis of the fæces and urine showed that the pancreas was the cause of the intestinal disturbance and the pancreas could often be felt to be enlarged, more especially in the left hypochondrium. A second frequent complication was chronic appendicitis, and in a third the liver and gall-bladder became involved.

Mr. James Cantlie (London) said that he found ipecacuanha a most trustworthy and efficient remedy in sprue. The drug was given as for dysentery and ipecacuanha sine emetina seemed well-nigh as efficacious as the ordinary drug. With ipecacuanha he expected by the third day to find the tenderness of the tongue, the ulcers on the tongue and mouth, the febrile state when present, and the bulk and frothiness of the stools to disappear. As an intestinal injection he used warm sea-water one pint every second day. The lactic acid treatment recommended on theoretical grounds by Metchnikoff was detrimental, as it increased the acid fermentation already present. Mr. Cantlie advocated entire exclusion of milk from the diet, and found meat and fresh vegetables, such as vegetable marrow, stewed celery, and seakale, with fresh or cooked fruit the suitable diet in sprue.

Dr. P. J. CAMMIDGE (London) stated that in 14 cases diagnosed as sprue he had found pancreatitis in six. The urine gave well-marked "pancreatic" reaction. Urobilin and indican were present in abnormal quantities. The fæces were acid as a rule. In cases of sprue associated with pancreatitis there was, as a rule, a somewhat higher proportion of unsaponified fat than in uncomplicated cases. It would seem that in almost 50 per cent. of cases of sprue the disease spread to the duct of Wirsung, causing first a catarrhal and subsequently an interstitial pancreatitis.

Dr. W. H. DE SILVA (Ceylon) gave

### *An Account of the Climate of Ceylon,*

and claimed that as a winter resort for invalids, especially those suffering from bronchial troubles and those requiring a thorough rest, Ceylon offered many advantages. The best months to spend in Ceylon were from December to March. There could be no doubt that in the upland districts of Ceylon there were most desirable places of residence, where climate, scenery, and environment had many attractions.

Dr. H. RADCLIFFE CROCKER (London) contributed

### *Some Observations on the Cases of Tropical Skin Diseases*

which had come under his observation. He stated that tropical ringworm was not always of the same type, and that in Britain the signs and symptoms apparently disappeared in winter and recrudesced in summer. Discussing elephantiasis, Dr. Crocker said that in the tropical variety the trunk lymphatics were blocked and the skin was smooth and unchanged, whereas in the streptococcic elephantiasis the surface was affected with granulation growths and epidermic thickenings.

Mr. CANTLIE gave

### *An Account of 100 Consecutive Cases of Liver Abscess*

which he had operated upon. Of the number, 82 recovered and 18 died. 90 of the cases he had operated upon transthoracically by the trocar and cannula and syphonage method of treatment. 47 of the cases were of the class suprahepatic, three subhepatic, and the remainder intrahepatic.

Mr. CANTLIE also read a paper on

### *The Anatomy of the Sigmoid Flexure,*

showing that at the upper and lower end of the sigmoid flexure there existed normally a pylorus or gate of entrance and of exit respectively. Here the circular muscular fibres were thickened and the longitudinal bands of muscular fibres approached each other constituting an anatomical and physiological gate, pylorus, or valve. In chronic lesions of the lower bowel these were the seats of congestion, ulceration, granulation growths, and stricture of a fibrous type. The conditions which these lesions caused were: mucous casts, mucous colitis, chronic diarrhœa, and a condition resembling, or identical with, chronic dysentery. Mr. Cantlie treated cases of the kind by dilatation with rectal bougies introduced through the sigmoidoscope, applying the principles of treatment of urethral stricture to sigmoid stricture. The treatment had proved eminently successful.

---

## NAVY, ARMY, AND AMBULANCE.

### WEDNESDAY, JULY 31ST.

Inspector-General J. PORTER, R.N., the President of the Section, delivered

### *The Introductory Address.*

He said: I feel I cannot let this occasion pass without warmly congratulating the Army Medical Service on the vast, the revolutionary, strides it has made in recent years towards complete efficiency. This appears to have been rendered possible by a happy combination of many fortunate circumstances. 50 years ago a great War Minister, Sidney, Lord Herbert of Lea, planned and strove with all his might for most of the reforms which have only now been introduced. He fought a brave fight, but the forces arrayed against him prevailed. His biographer tells us how the Treasury, the bureaucracy of his own department, soldiers, and medical men, hide-bound in tradition and seniority, obstructed in their several ways and hastened this noble statesman's end. The service rolled on in the old grooves undisturbed till 1882 when our little wars in Egypt began. History repeated itself; a medical breakdown led to an outcry in the country. The usual official inquiry was held and with the old result. No one was to blame except a few medical small fry who failed to show initiative or to take responsibility under a system which had given them no authority over, or training in, war duties during peace. Once more things went to sleep, and so it came about that South Africa told practically the same sad medical tale. But at last the hour had come and with it the men who were to translate Sidney Herbert's work, and much besides, into reality. Conspicuously to two War Ministers (Mr. Brodrick and Mr. Haldane), to Earl Roberts, and to Sir Frederick Treves the country and the army owe the medical position of to-day. Promotion by merit has been established through all ranks of the Army Medical Service. Its officers have been given a career. The paralysing blight of seniority has been swept away and healthy development has been assured. There is no room for the idle, the ignorant, the incompetent—the man now exists for the office and not the office for the man. Already in all around the strenuous life is in evidence. To take two examples: The monthly *Journal of the Royal Army Medical Corps* is a publication of which any body of professional men might be justly proud. The corps specialists, too, are forging ahead. The detection by Colonel Bruce of the micrococcus Melitensis has, to quote a recent newspaper article, led up to the crowning discovery of Major Horrocks "that goats and their milk are the chief means by which Mediterranean fever is spread." Thanks to the magic effect of this revelation Malta and the Mediterranean, for long our deadliest foreign stations, are becoming exceedingly healthy. A few months ago the Secretary of State for War took a step of the first importance when he ordered that the principles of sanitation and hygiene should become an integral part of the training and essential qualifications of all combatant officers. In the medical service of the Royal Navy many improvements have been made during the past decade. New hospitals have been built and old ones extensively reconstructed. Modern fittings and equipment have been supplied afloat and ashore. Dental surgeons have been attached to the great hospitals at our principal home ports, and, what is of the highest value, medical officers in steadily increasing numbers are being given courses of study at civil hospitals. (The President referred to the recent war in the Far East and after describing the hopeless inefficiency of the Russian medical service under the old system and its deadly effect on the health and morale of the forces, proceeded:—) Let us turn from this to the other side and we see what years of careful study, judicious outlay, and patient practice accomplished for Japan. The lucid articles of Surgeon-General Suzuki, Admiral Togo's principal medical officer, are a perfect gold mine of information. Nothing was left to chance. Did time permit they contain much that one would love to dwell upon. Tsushima was won by our allies at the small cost of 113 killed and 424 wounded, many due to burns. At the recent Red Cross Congress in London Dr. Nagas Ariga stated that the Japanese in their late war had to deal with 220,812 wounded and 334,073 sick soldiers, exclusive of 77,809 Russian prisoners—that is, roughly, for every three sick there were two wounded, a very different ratio compared with anything we have ever known. To quote an example within my own experience, in 1884–85 I was for a year in the field on active service with a battalion of marine infantry. It was maintained at a strength of about 500 officers and men, and during the year approximately 1500 joined. The enemy accounted for less than 100 in killed and wounded; the remaining 900 were accounted for by deaths and invalidings. We owe it to our sailors and our soldiers, it is our duty to our country, to strive with all our might after the standards of medical efficiency with which our gallant allies have surprised civilisation. My brother officers, I know, realise that we cannot afford to, we simply must not, have medical blundering in our next war. South Africa showed us that to some extent the soldier can be replaced by the Empire in arms, but with the sea service it is otherwise. Press-gang, conscription, merchant service, which filled the gaps a century ago, are now of no avail. A simple man-of-war's man in the making costs the country hundreds of pounds and years of laborious training. Even humble lower deck ratings rise in value with startling rapidity. The skilled marksman is an asset who any day may be priceless to his country. Once lost he cannot be replaced while a modern war is in progress. How he is put out of action—whether by the enemy or by disease—matters not; he is gone all the same. Our bluejackets are our heart's blood. When it must flow, it is surely our sacred duty to see to it that we at least shall not be responsible for wastage.

Fleet-Surgeon A. Gaskell, R.N., communicated a paper on the

### *Treatment of Wounded in Fleet Actions.*

He contended that a hospital ship should be built during peace time so that experiments could be made and the men trained. Two types of hospital ships would be probably wanted—an ocean-going type and one for coasting service. A dry antiseptic large dressing was required for a first aid dressing for use in the navy; it should consist of a pad of modified Gamgee tissue nine inches square, with a four-inch roller bandage made of Lister's carbolic gauze, and a large safety-pin, the whole being wrapped up in a calico envelope. The ordinary brown haversack of the gunner's stores was suitable for holding a supply of first-aid dressings, and one of these sacks should be hung behind each gun and in other convenient places. In regard to medical preparations for battle he suggested, if time allowed, that everyone in the ship should receive a hot antiseptic bath and should have served out to him a complete war clothing consisting of non-inflammable flannel impregnated with double cyanide salt. As much as possible of the body surface should be covered, even to the extent of wearing flannel masks with openings for the mouth, nose, and eyes. That war clothing could be sterilised and stowed away for use in war time. The Japanese in their last war ordered the men to bathe and to wear clean clothing before going into action. He thought that the ideal station for medical officers was an armoured receiving room capable of holding 6 per cent. of the ship's company. Such a receiving-room would have to be thought of during the time of constructing the ship. In ships already built he suggested that a large space should be cleared near the bottom of the ship and approached through one or more large armoured tube-like hatchways. During a fierce action the wounded should not be moved. The details of moving the wounded when feasible should be settled at the time by the principal medical officer.

Lieutenant-Colonel A. M Davies, R.A.M.C., contributed a paper on

### *Enteric Fever: its Spread by Personal Infection, and Preventive Measures on Active Service.*

He discussed the spread of enteric fever by personal infection and quoted from Osler, who admitted that "the possibility of direct transmission through air from one person to another must be acknowledged." If that assumption were granted it would be found to explain a large proportion of the incidence of enteric fever under active service conditions. In regard to preventive measures, *the stools and urine being the obvious channels of infection*, the chief care in regard to disinfection and disposal should be directed to the excreta. But the date of commencement of infectivity was not known with certainty in the case of urine or stools, nor was it known precisely when they ceased to be infective. To deal with a convalescent so as to insure that his stools and urine were not a danger to others might be tedious but it was not very difficult. It was not intended that there should be any relaxation of the means at present acknowledged to be necessary for safeguarding or purifying water and food supplies and keeping the camp clean. There were, however, certain special lines on which rational enteric prophylaxis should be carried out on active service, and these he summarised as follows: No enteric case and no man suspected to be suffering from enteric fever should remain in camp—that is, under "at the front" conditions (even in field hospitals) if enteric epidemics were to be stopped at their commencement. All concerned should be constantly on the look out for a suspicious case; all such cases should be immediately segregated, and a diagnosis should be arrived at as quickly as possible with the modern methods now at their disposal. All diagnosed cases and all suspicious cases should be removed to an environment where thorough treatment such as would prevent their being a source of infection to others could be carried out.

Fleet-Surgeon P. W. Bassett-Smith, R.N., read a paper on

### *The Frequency of Aneurysms in the Royal Navy.*

He furnished statistics and details of the aneurysms he had noted at Haslar Hospital during the last seven years, and observed that the greatest frequency in incidence was found in the stoker ratings and next in the petty officers, who were predisposed by their more advanced age and by the strenuous life led in attaining their positions. He remarked that although it was generally held that syphilis and alcoholism were common predisposing causes of aneurysm, nevertheless in the histories of his series of cases he had been unable to find any definite proof of the constant occurrence of either one or the other. It was evident that the conditions of life under which men worked in the navy favoured very markedly the development of aneurysms and it was to be hoped that the system of developing the body by means of the Swedish drill under medical inspection might have a beneficial effect.

Staff-Surgeon G. E. Duncan, R.N., gave a demonstration of a Form of Oral Filter to be worn during operations.

## Thursday, August 1st.

Surgeon C. K. Bushe, R.N., read a paper on the

### *Treatment of Syphilis Afloat.*

He described the system which he had introduced into the Royal Naval Barracks at Devonport. He observed that in the majority of cases of recent venereal sores it was not possible to make a definite diagnosis of constitutional syphilis and the appearance of further signs had to be awaited before a diagnosis could be made. The patient was placed on the sick list and the sore was treated with a non-specific local application, usually iodoform. The patient received no specific treatment internally. If the sore healed without constitutional manifestations appearing the patient was discharged to duty but continued under weekly observations for three months, his name being entered on the syphilis observation list. Men on that list had to present themselves each week for examination by the medical officer. If men on that list were drafted elsewhere they were followed up by a reference sheet addressed to their commanding officer with the request that the men might be brought to the notice of the medical officer and a few particulars of the case were also furnished. It was admitted by most of the leading syphilographers that the plan of waiting for secondary symptoms to appear did not influence detrimentally the subsequent cure of the disease or detract from the chances of a cure being effected. All men placed on the syphilis observation list were warned of the reasons for their being kept under observation. When a diagnosis of constitutional syphilis was made the man was put on the sick list under specific treatment and on an unstinted diet until all active signs of the disease had disappeared, when they were discharged to duty; but they remained on the syphilis treatment list. The men were made acquainted with the nature of the disease and the necessity for continuous treatment over a long period. When iodide of potassium was given it was administered by the mouth with ammonia largely diluted and in conjunction with mercurial intramuscular injections.

Staff-Surgeon H. L. Norris, R.N., communicated a paper on

### *Wireless Telegraphy and Hospital Ships,*

in which he pointed out that the necessity of hospital ships for naval warfare had been widely recognised and these ships could be fitted out so quickly on the outbreak of war that the various navies would be well provided with them in the next naval war. For the thorough performance of her duties a hospital ship must be on the scene of action as soon after a battle as possible, so that it was essential that she should be furnished with some means for keeping in touch with the fleet. In consequence of the provisions laid down by the Hague Conference it was advisable that hospital ships should carry a wireless telegraphy installation, but such means of communication might on the outbreak of war be declared contraband. It was to be hoped in case of war that this means of communication would be granted to hospital ships, otherwise their efficiency would be seriously impaired.

Lieutenant-Colonel R. Caldwell, R.A.M.C., read a paper on

### *Enteric Fever during Active Service.*

He declared that the causation of epidemics of enteric fever was closely connected with the faulty disposal of excremental matter. He described how in an outbreak of enteric fever in the 17th Lancers at Meyrout, the dry earth latrine system was discontinued in the regimental lines and a 2 per cent. solution of crude carbolic acid was substituted, a supply being put into each pan to receive the fæces. As a result of this the flies at once disappeared from the latrines, although neighbouring native latrines where dry earth was still used contained as many as ever. Bearing the above facts in mind the extreme importance of covering fæcal matter could be appreciated, especially if some system of latrine accommodation was used which comprised the reception of such matter in a liquid medium. The realisation of such a system would appear to be found in the latrine of the United States army which consisted of a portable latrine trough of galvanised iron. The trough was partly filled with milk of lime, solution of carbolic acid, or other liquid of like nature, and emptied when required into an air-tight cart by means of a suction pump. The official report of the United States Government stated that medical officers were aware of the fact that that method of disposing of fæcal matter would be attended by increased cost, but they were confident that it would greatly lessen the number of cases of typhoid fever. It was evident, according to Lieutenant-Colonel Caldwell, that the advantages of that system would not find their limitation in the disposal of solid excreta, but would also go far to eliminate the danger of the spread of enteric fever by infected urine. In regard to the spread of the disease by contact with the sick they found themselves confronted by the possibility that men who were not thought ill enough to be put on the sick list might be acting at the time as wholesale disseminators of epidemic disease.

Surgeon-Colonel P. BROOME GILES, V.D., communicated a paper on

*The Position of the Volunteer Stretcher-Bearer.*

He defended the retention of the present unit system of regimental stretcher-bearers for the following reasons: 1. In war the actual fighting zone, where the first line of medical assistance was immediately wanted, was not protected by the rules of the Geneva Convention. The exhibition of the honoured Red Cross flag was not respected under fire. If it were so the temptation of temporarily exhibiting it upon strategical positions would be irresistible. 2. All the other lines of medical assistance were protected under the Geneva Convention. They could not have the Royal Army Medical Corps protected one moment and liable to be fired upon the next. 3. There was the sentimental but not the less true idea that men fought better when they knew that should they fall they would be as speedily as possible succoured by their own comrades; that comrades would at all risk help each other. 4. Recent wars, especially those in South Africa and Manchuria, had amply proved: (*a*) that the frontal area of their attack had enormously extended and at the commencement of an action the ranks were not so crowded as formerly but that the persistent fire was far more effective, each ridge of ground being bullet-riven for hours; (*b*) that often in battle hours, even days and nights might elapse before the fight passed by or was ended. To use trained men of the Royal Army Medical Corps as regimental stretcher-bearers would be a waste of material. They were too valuable to be exposed in the fighting line. No doubt in the future men of the Royal Army Medical Corps would be attached to units for sanitary duties. In his opinion the regimental stretcher-bearer must continue to exist, and if they used stretcher-bearers such as were contemplated to complete the war establishment of the field ambulances they could only be employed efficiently after the battle was over.

## FRIDAY, AUGUST 2ND.

Major N. FAICHNIE, R.A.M.C., read a paper on

*Water-supply in Camps, on the Line of March, and in Battle.*

He was strongly of opinion that to prevent the occurrence of typhoid fever it was necessary to have a pure water-supply for at least two objects—namely, for drinking and for washing up. Any form of analysis required time; it was impossible even for an expert to say merely by looking at it whether a water was good or bad. There were certain facts about water which every officer and every soldier must understand, the most important being that all water must be considered bad and none that had not been purified should be used. The usual rules for protecting water must be strictly enforced, but in addition all water must be purified, not for drinking only, but for washing up as well. Every time a water-bottle or water-cart was filled with unsafe water it became impure and remained unfit for use till sterilised. In Major Faichnie's opinion the regulation water-bottle could not be properly cleansed inside, and because of this in hot climates it became offensive; the outer covering of felt of the bottle should be attached to the sling, so that the bottle could be drawn out and put directly on the fire, thus providing an alternative method of purifying both water and bottle; further, the mouthpiece became coated with dust, which was removed by an unwashed hand or a dirty handkerchief. These defects, the speaker contended, could be removed by the employment of the water-bottle which he had devised. It was made of aluminium and the lid containing the neck lifted off completely, so that the inside could be thoroughly cleansed by the hand when necessary. The bottle could be put on the fire. It had been refused by the War Office as unsuitable, but Major Faichnie still believed that the existing regulation water-bottle could be improved by the adoption of all or any of the advantages which his water-bottle possessed.

Lieutenant-Colonel E. M. WILSON, R.A.M.C., read a paper on

*The Necessity for Trained Male Personnel in the Medical Services on Mobilisation for War.*

He said that of all things the most important to a general was to get his fighting line cleared of sick and wounded and it was essential that the personnel should be trained, as a trained team would carry a patient twice the distance with less fatigue and less suffering to the injured man than would otherwise be the case. The nursing staff and all medical officers would gratefully bear witness to the splendid work performed by sisters and nurses in military hospitals in peace and in war, at home and abroad, but there were other duties which must be performed in all hospitals if the administration was to be satisfactory. The lines on which it was hoped that the medical services might be organised in future expeditions were: (1) to place a sufficient number of non-commissioned officers and men with the units in the field, trained in the first principles of sanitation, and with some knowledge of the means and appliances for the purification of water, and thus to prevent disease; and (2) to increase the number of bearers with field ambulances, and thus more rapidly to remove non-effectives from the front. In this way it was believed that the percentage of sick would be decreased and the number of hospitals required proportionately diminished. The provision of these trained medical subordinates was, of course, a question for the War Office, but he thought that medical men in all parts of the United Kingdom might do something to assist. A scheme was under consideration for the St. John Ambulance Brigade to take over the charge of military hospitals at home on mobilisation when the Royal Army Medical Corps officers and men were withdrawn for active service. That could not be done successfully unless medical men resident in the locality would take an interest in the scheme and assist in the instruction.

Major R. J. BLACKHAM, R.A.M.C., read a paper on

*The Teaching of Hygiene in the Army.*

He said that the lines along which the teaching of hygiene might be further extended in the public military schools might be these: The training of quartermasters in hygiene and the institution of examinations in sanitation for officers of this class prior to promotion; the teaching of hygiene to soldiers in army schools as an essential subject for the various military certificates of education, and the adoption of hygiene as a compulsory subject for pupil schoolmasters at the Duke of York's School and for all steps in the schoolmaster's promotion; the training of army schoolmistresses in infant hygiene at military families' hospitals and the instruction of elder girls in army schools in the care of children; the opening up of certain staff appointments involving executive military duties to military medical officers; and the extension of the system of hygienic training adopted for regular troops to the voluntary or territorial forces and the appointment of regimental medical officers as sanitary rather than surgical experts.

Surgeon P. T. SUTCLIFFE, R.N., read a paper on the Treatment of Burns and Scalds Afloat, in which he advocated the use of a 5 per cent. solution of picric acid in place of carron oil.

## THE PATHOLOGICAL MUSEUM.

A wise mountaineer pauses from time to time to survey the prospect, to examine his immediate surroundings, and to take his bearings in relation to the path already traversed and the best route by which to reach his objective. So also is it wise for a seeker after truth to pause occasionally, to take stock of his position in relation to established facts, to grasp the bearing of his researches upon the practical workaday world, and the lines best suited for future investigation. The annual Pathological Museum of the British Medical Association affords an unequalled opportunity for such a survey of the situation. Moreover, to many practitioners this is the one occasion each year when they can refresh their early teaching, keep in touch with the recent advances of medical science, and bring these advances to fruition by improved methods of treatment in their own practice. We have repeatedly dwelt on this aspect of the museum and cordially congratulate the medical profession in Exeter, the museum committee, and the honorary secretaries (Dr. R. V. Solly and Dr. G. P. D. Hawker) on the excellence of this year's museum. The labour involved in collecting, classifying, and labelling material from distant parts is far greater than the uninitiated would imagine, and greater than that in any other section of the Association. The special subjects selected for demonstration this year were diseases of the breast, the brain and spinal cord, the liver and gall-bladder, tropical diseases, cancer, and radiograms of fractures and dislocations. Of the first named there were 90 specimens (60 from St. Bartholomew's Hospital, London, and 30 from the Cancer Hospital, London, Cambridge, Bristol, and other places), the finest series we have seen in one place outside the Hunterian Museum, collected and classified mainly by the energy of Mr. E. H. Shaw and Mr. W. S. Handley. The other series were also very good. Some years ago we advocated informal demonstrations of the specimens by their exhibitors and this year fixed demonstrations were given by Dr. F. W. Mott and Dr. E. F. Bashford on syphilitic lesions and on cancer respectively. Several of the exhibitors were at hand to describe their specimens and we believe it would add to the interest of visitors if all exhibitors could be urged to attend and give informal demonstrations as far as their other engagements would permit.

### *Syphilis and Parasyphilis of the Central Nervous System.*

On Thursday at 9.30 A.M. Dr. Mott demonstrated this exhibit. The first case was one of multiple gummata of the brain in a woman, aged 35 years, with symptoms resembling general paralysis of the insane. Histological lantern slides exhibiting the granulomatous deposits of syphilis and syphilitic endarteritis were shown. Specimens were also demonstrated from a case of syphilitic gummatous meningitis in a girl, aged 16 years, who presented Hutchinson's teeth and other signs of congenital syphilis. Attention was drawn to the likeness of the lymphocytic and plasma-cell infiltration in these cases to the infiltrations met with in sleeping sickness in man and dourine in horses, a point of much interest when it is remembered that syphilis is coming to be regarded as due to one form of protozoon, the spirochæta pallida, and the two last-named diseases to another and closely related protozoon, the trypanosoma. Specimens from cases of juvenile general paralysis of the insane, which has been shown by Dr. Mott and others to be a parasyphilitic disease (i.e., a disease due to the remote effects of syphilis), were next exhibited, and the characteristic changes in the cerebral cortex were demonstrated. The pyramidal and other cortical cells become gradually destroyed and the peripheral processes become corkscrew-shaped by reason of their severance from the attachments at their cortical surface. Tabes dorsalis is another parasyphilide, and cases of tabes in the husband and of general paralysis of the insane in the wife were shown on the screen. It was mentioned that it had been shown that the antibodies of the syphilitic toxin are present in the cerebro-spinal fluid of patients suffering from both of these diseases.

### *Cancer.*

On Friday Dr. Bashford demonstrated the specimens and charts exhibited in the museum. Clinical, pathological, and histological investigations had defined the essential characteristic of cancer to be the power of proliferation possessed by circumscribed groups of cells. These methods of investigation had failed to solve the problem they had defined and resort to experiment became necessary. The starting point of experiment was the transference of cancer from one animal to another and the determination of how it was effected. There was no doubt that the experimental transference of cancer simply meant the continuation of the growth of the cells transferred and not the development of cancer *ab initio*. The method of transference was explained in detail. A chart of the clinical course of a primary (spontaneous) tumour of the mamma was exhibited. It showed that recurrence had followed two attempts to remove it completely. After the first, recurrence took place within a fortnight, after the second only after three months. Owing to the short duration of life in mice the relief thus afforded represented a period of many years' freedom in the case of the longer-lived human subject. Dr. Bashford explained that it was only by surgical means that relief could be given to mice suffering from spontaneous or implanted cancer.

The results of implanting the tumour removed at each operation and at death were also exhibited on the same chart. This showed that in some mice the implanted fragments progressively increased and ultimately attained enormous sizes. In other mice they grew for a time, after which growth ceased either temporarily or permanently (spontaneous cure). In yet other mice the implanted fragments did not grow at all. The tumours which developed were represented in natural size so that a marked contrast was evident between the amount of growth which took place in the inoculated animals and that which occurred during the same time in the original mouse. The chart brought out very clearly the enormous proliferation following the distribution of fragments of a tumour over a large number of normal animals. Dr. Bashford explained that the experimental study of cancer resolved itself really into the study of growth which was the only property common to malignant and benign tumours. Features in growth which pointed to the alternation of phases of increased and diminished energy of proliferation of the cells were described, and their apparent bearing on the clinical course of cancer in man was alluded to, attention being especially directed to the sudden manifestation of enhanced degrees of malignancy in the case of tumours previously growing slowly. The fact that spontaneous cure certainly occurred in mice was not to be used as implying that mouse cancer and human cancer differed materially, but to be taken as implying that the reports of the disappearance of malignant tumours in man were worthy of more credence than had usually been given to them.

A number of slides were shown illustrating the features of cancer of the mamma in mice in cases of spontaneous and experimental tumours. Particular attention was directed to slides of an epithelioma capable of transplantation from mouse to mouse with retention of its typical epitheliomatous structure. It was claimed that the parallel in the behaviour between the two groups of tumours dissipated all doubts that the mammary tumours were not cancerous. For the rest Dr. Bashford's demonstration covered the ground of a paper by himself and Dr. J. A. Murray in our columns of March 23rd of this year,[1] together with a discussion of the nature of cancer and of the protection which can be conferred on mice, reported in our columns on July 6th.[2]

In a corner of the museum, too late for cataloguing, were six microscopic specimens and coloured sketches bearing on experimental production of cancer and its histological transformations after transplantation, exhibited by Professor Ehrlich (Frankfort): (1) Chondroma nine times transplanted from mouse to mouse; (2) a carcinoma transplanted 56 times from mouse to mouse; (3) fusiform-celled sarcoma produced by transformation of a mammary carcinoma in a mouse; (4) colonies of a sarco-carcinoma in process of transformation by artificially treating the inoculating media; (5) sarco-carcinoma; and (6) mixed-celled sarcoma produced by transformation of a mammary carcinoma of a mouse. It has long struck pathologists that the histological divisions of the carcinomata and sarcomata are artificial and these specimens emphasise this view. No wonder histologists differ as to the precise nature of a microscopic specimen and may even be unable to agree whether a certain growth is malignant or non-malignant.

---

[1] Carcinoma Mammæ in the Mouse.

[2] Cf. also Natural and Induced Resistance of Mice to Cancer, Proceedings of the Royal Society, Dec. 10th, 1906.

### *Trypanosoma.*

The important economic bearings of pathological researches were well illustrated by Mr. H. G. Plimmer's exhibit of trypanosoma. This protozoon has for many years been found in the blood of the natives of Africa and for a long time was thought to be quite harmless. This view was due to the length of the latent period and the chronic progress of that lethal disease "sleeping sickness" which is now known to be produced by the trypanosoma which invades the cerebro-spinal fluid in large numbers. The organism, which is a fusiform one with flagellated ends, has been found by Bruce in the blood of 75 per cent. of the natives of Uganda, one of our youngest protectorates, and "sleeping sickness" is now spreading from Uganda to the natives of the Soudan and of Egypt. It is almost certainly communicated by the bite of some insect, some fly or mosquito —which is not yet certain. At first regarded as innocent, various forms of trypanosoma are now found to be extremely deadly both to man and animals. To their ravages have been traced the following diseases: the "tetse-fly disease," which decimated our horses in the South African war; dourine (mal de coit), a disease in horses producing mucous plaques on the penis and vagina closely resembling syphilis and communicated in the same way; and surra, a disease which in India destroys thousands of agricultural animals annually. In India immense tracts of land lie uncultivated year after year owing to the lethal epidemics of surra which have destroyed every horse, sheep, and camel in certain districts. Apart from their scientific value it would be difficult to overestimate the economic potentiality of such researches. Investigations into the realms of the protozoa have recently made wonderful progress. Apart from the undecided question of a protozoon being the parasite of cancer, there are at least two species of protozoa which are now known as most ubiquitous and lethal, trypanosoma and spirochæta pallida (of syphilis), both of which, as above noted, give rise to an almost identical granulomatous lesion.

Several observers sent in their names to demonstrate the spirochæta pallida at this museum but they failed to exhibit them. There was only one specimen, a very good specimen, shown by Dr. H. Bayon (London) from the liver of a syphilitic child impregnated with silver nitrate.

It will already be understood from the foregoing that this annual museum affords an excellent opportunity for us in Great Britain to see what is being done by our professional brethren in Greater Britain, and many instances might be given. Professor A. R. Ferguson (Cairo) and Professor W. St. Clair Symmers (Belfast) showed an interesting series of specimens illustrating the lesions produced by the bilharzia hæmatobia, a nematode worm associated with hæmaturia. The bilharzia is almost confined to Egypt, South Africa, and the West Indies, and its pathological first cousin, the Chistosomum japonicum, is found only in China, Japan, and India. They both produce similar symptoms and lesions and it could be readily understood from the specimens shown how the papillomatous lesions of the bladder, the rectum, and the great intestine might easily be mistaken for carcinoma or for dysentery not only during life but after death even by the most competent observers. Without searching carefully for the characteristic monopolar eggs of the bilharzia it would be impossible to distinguish bilharziasis from these conditions with certainty. Bilharziasis is probably more common than is generally believed and many cases are certainly mistaken for these conditions. Specimens from the liver in such cases show a special and distinctive kind of cirrhosis—viz., islets of fibrosis presenting the appearance of a pipe-stem thrust through the liver substance involving the portal areas and not the hepatic veins. It is not the worm that harms the patient so much as the eggs, and Professor Ferguson's specimens showed that the sexually mature worm migrates from the subserous layer of the viscus and deposits its eggs in or upon the mucous surface. Apropos of the polypoid growths produced by the bilharziasis, it was interesting to see, in an exhibit shown by Professor J. M. Beatty (Sheffield), that a sporozoon (the precise nature of which could not be determined) was capable of producing an aural polypus in a patient from India.

Space prevents our referring to more than a few of the many excellent exhibits. A series of brains and cords illustrating cerebro-spinal meningitis were shown by Professor Robert Muir (Glasgow) and Professor Symmers, drawings of motile filaments in the cerebro-spinal fluid by Dr. Frank C. Eve (Hull), and an interesting series of cerebral tumours shown by Dr. T. Grainger Stewart (London), deserve mention. In the domain of gynæcology Mr. E. H. Shaw and Dr. R. V. Solly showed examples of that curious condition syncytioma malignum, and Dr. Cuthbert Lockyer the results of Wertheim's abdominal hysterectomy. In point of artistic merit and method of preparation nothing could be better than the series of subserous fibroids of the uterus, fibroids and carcinoma of the uterus, and fibroid cysts with inflamed appendages, with chronic metritis and other complications shown by Professor Strassmann (Berlin). These we imagine were mounted in gelatine; the arrangement of the parts and the oval or watch-glass front admirably revealed the characteristics of the diseases and preserved the colours of the tissues. The pathology and surgery of the gall-bladder were well illustrated by a series of 63 specimens exhibited by Mr. J. Bland-Sutton (London), Mr. B. G. A. Moynihan (Leeds), Mr. G. A. Wright (Manchester), and others. A series of seven specimens illustrating cirrhosis of the liver, associated with primary carcinoma, was shown by Professor Muir, who also included a specimen showing one of the consequences of neglected appendicitis—namely, necrotic areas in the liver due to a highly septic portal pyæmia supervening on appendicitis. Those who make post-mortem examinations only at long intervals in their practice would have been pleased to see the numerous small (sponge-like) cavities which may be produced in the liver by the bacillus aërogenes capsulatus in another specimen shown by this gentleman. Dr. William Hunter (London) exhibited a series of specimens illustrating his well-known views of the origin of pernicious anæmia in gastro-intestinal sepsis and consequent hæmolysis. His specimens showed, as he has elsewhere pointed out, that the inflammatory condition of the alimentary canal is overlooked on account of the bloodlessness of the gastric and intestinal walls. In this series were included also several tongues taken from subjects of pernicious anæmia, showing the rawness and denuded condition of the tongue which he mentions amongst the earliest symptoms of the disease.

Dental surgery was unusually well represented in this year's museum. The microscopic specimens and cultures of various spirilla and bacilli found in the mouth (Mr. K. W. Goadby); irregularities of teeth in man and animals (Mr. J. F. Colyer); tumours of the jaw (from University College, Bristol); and specimens illustrating dental diseases in children (from the Royal Dental Hospital, London) were all well worthy of study. Apropos of dental surgery, one of the magnificent series of x ray photographs shown by Mr. E. W. H. Shenton had a practical bearing of the highest importance. Facial neuralgia is one of the most troublesome maladies which we are called upon to treat, and in a case of this kind a radiogram had revealed the presence of stumps, hitherto unsuspected, imbedded in the lower jaw; upon removal of these the patient after years of suffering was completely relieved.

Messrs. Leitz of Wetzlar and London kindly lent 75 microscopes, most of which were fitted with a rack-and-pinion fine adjustment. This novelty may or may not prove to be advantageous but the excellence of the lenses was quite up to the high standard of these well-known optical instrument makers.

We cannot close this notice without mentioning that Mr. Jonathan Hutchinson, sen., was an exhibitor and a constant visitor to the museum. It was Mr. Hutchinson who founded this Annual Museum over five-and-thirty years ago and he must have been very pleased with the effort this year at Exeter. Several of the coloured sketches which he exhibited illustrated melanotic lentigo of the lips and mouth, a condition which Mr. Hutchinson believes may be a "family disease" allied to that lethal disorder lentigo juvenalis maligna (xeroderma pigmentosum). The collection of so many apparently bald facts in one place often evokes the criticism of *cui bono* from those who do not remember that no carefully and truthfully recorded fact is ever quite lost. Counting the stars might seem to be a profitless proceeding, nevertheless it was the minute and patient records of the heavenly bodies made by Bradley and Groombridge in the eighteenth and nineteenth centuries which have recently enabled the astronomers of the present day to deduce several important facts and amongst others that one set of stars moves one way and another set in another direction. Minute, truthful, and patient observations still remain the basis of all scientific progress.

THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 7, 1907.*

# The Royal Commission on Human and Animal Tuberculosis.

SINCE the late Sir MICHAEL FOSTER and his colleagues on the Royal Commission which is investigating the relation between human and animal tuberculosis made their well-known second report at the beginning of the present year certain developments of the question have arisen to which attention may usefully be drawn. In a leading article in THE LANCET of Feb. 9th we pointed out that although the Commission continues to be engaged on further inquiries which are of the utmost importance, their second report is of itself sufficient to put beyond any doubt the serious danger of contracting tuberculosis to which the community is daily exposed by means of the milk of tuberculous cows; and we insisted that in this important respect the way is now clear for the adoption of practical preventive measures. The matter is one which requires Government action in the interests of the country as a whole. The fact that certain municipalities have obtained some powers under "tuberculous milk clauses" in local Acts to protect the inhabitants of their own districts, and that in the session just concluded the London County Council has obtained similar powers, in no way lessens the obligation which rests on the Government to take comprehensive action in the interest of the whole population. The degree of security which individual municipalities can obtain is at best small, and has to be secured by methods which are necessarily cumbrous and costly. When the public health department of London or Liverpool has succeeded in finding out that a cow is giving tuberculous milk at a farm 100 miles away, their powers only enable them to exclude the milk from the town concerned. The same milk thereupon may go elsewhere and imperil the lives of children in localities which are less fortunately situated.

The findings of the Royal Commission have caused a widespread desire for reform. During the past six months the agitation in favour of purer milk has grown considerably in force. The question has been raised by medical officers of health in almost every part of the country. It has been freely written about in the lay press and discussed at public meetings and sanitary conferences. Various other considerations besides the prevention of tuberculosis have been imported into these discussions, such as the necessity for "clean" milk as a means of lessening infantile mortality, the importance of securing more wholesome methods of storage and transit of milk, and the need for applying the Sale of Food and Drugs Acts to milk in such a way that the interests of the consumer receive as much consideration as the interests of the producer. From the statement lately made on behalf of the Government in the House of Lords it would appear that the various questions of legislation and administration which have arisen in regard to the wholesomeness and quality of the milk-supply are to be considered during the recess by the Local Government Board in consultation with the Board of Agriculture. The fact that the principal medical officer of the Local Government Board, Mr. W. H. POWER, is also chairman of the Royal Commission on Tuberculosis should be of great advantage to that department in devising administrative measures to deal with the milk question. Legislation will no doubt be needed and we trust that Mr. BURNS, who has already given substantial proof of his desire to secure better protection to the public where dangerous foodstuffs are concerned, will see that the necessary measures are formulated and pressed upon Parliament without delay.

With one exception, all the promised supplementary volumes to the second report of the Royal Commission are now available. They leave no room for questioning the thoroughness and comprehensiveness of the work which has been undertaken during the past five years, under the Commission's direction, by the several investigators at the Commission's farms in Essex. The volumes relate to the following subjects: (1) The Pathogenic Effects of Bovine Viruses, by Dr. A. STANLEY GRIFFITH; (2) (published in two parts) the Pathogenic Effects of Human Viruses, by Dr. L. COBBETT; (3) (yet to be issued) on various comparative observations; and (4) Comparative Histological and Bacteriological Investigations, by Dr. ARTHUR EASTWOOD. To attack these five bulky Blue-books is a task from which the ordinary reader may well shrink, and in a brief series of articles, one of which appears in this issue, we have endeavoured to select some of the more salient observations in each. But we trust that no one will be deterred from obtaining and studying these volumes from consideration of their size. In each instance the material has been so skilfully arranged that the scheme and method of the volume can be apprehended at once. The principal observations and conclusions of each investigator are appropriately grouped, and tabular statements are given by means of which the reader who is in doubt regarding the evidence on which particular conclusions are based, or who wishes independently to study some special branch of the subject, can at once find his way to the facts. It may be noted that the Commission has left no uncertainty as to the meaning of negative results. In describing pathological appearances, for example, they are not content with such general phrases as "other organs normal;" the accounts given show in each instance what appearances were ascertained and what organs were examined. The volumes should find a place in every pathological library, and it is satisfactory to find their price moderate by comparison with some other Government publications which include many diagrams and illustrations.

Readers of the Commission's second report who also study these supplementary volumes can hardly fail to realise how many important questions connected with the etiology of human and animal tuberculosis have been opened up by these researches. These questions call for further investigation, either by the Royal Commission, if its members are able to continue for a sufficient period to give their ungrudging and unpaid assistance to the State, or directly by the Government on the lines which the Commission has already so well laid. The question of latency may be mentioned as a single example. The Commission's work brings out, time after time, the fact that in order to produce progressive tuberculosis in the experimental animal by feeding, even when virulent strains of bovine bacilli are in question, it is necessary to see that a considerable dose of infective material reaches the alimentary tract. From this point of view it might be concluded that the occasional ingestion of small doses of tubercle bacilli in milk is comparatively unimportant. But it is maintained by many authorities, especially in France, that tubercle bacilli localised in lymphatic glands and other tissues in childhood may remain "latent" there for many years until some intercurrent disease or special conditions of adolescent or adult life cause them to take on a new activity which results in progressive tuberculosis or pulmonary phthisis. Clearly, if "latency" and all its possibilities have to be considered, a small dose of bovine virus taken with milk in childhood, although it may produce no immediate obvious effects, may yet be attended by most serious consequences. On a matter of this kind it would be possible to speculate indefinitely; the need is to put the matter to experimental proof under conditions in which prolonged investigations and systematic records are possible.

## The Increase of Anthrax.

The annual report of the Chief Inspector of Factories and Workshops for the year 1906 contains, as is usual, the report made to him by the medical inspector, Dr. T. M. Legge, on the industrial diseases of the year and on the steps which have been taken to bring them under control. Dr. Legge, of course, deals with a variety of topics, and his narrative is full of interest; but we must content ourselves to-day with calling attention to his account of the increased prevalence of anthrax among workers engaged in the manipulation of hides, hair, wool, bones, and other products of possibly diseased animals. In 1905 there were in this country 59 cases of anthrax, with 18 deaths; and in 1906 these numbers rose respectively to 67 and 22, the highest recorded in any year since notification became compulsory in 1896. Dr. Legge calls attention to the excellent work that is being carried on by the Anthrax Investigation Board of Bradford and declares that the close investigation of individual cases by Dr. F. W. Eurich, bacteriologist to the board, with reference to diagnosis, to the nature of the material upon which the infected person had worked, to bacteriological examination of suspected material, and to experimental inquiry as to the possibility of so treating such material as to minimise danger without interfering with fitness for manufacturing purposes, has been of "most material assistance" to the department, and is bringing certainty to bear where before there was only surmise. As one result of the Board's activity Dr. Legge is enabled to report the cases which occurred in the Bradford district with an amount of detail and a degree of confidence previously unattainable, and contrasting strongly with the meagreness of information regarding cases outside the sphere of the Board's influence. In "seven of the 14 cases occurring in the Bradford district" the disease is said by Dr. Legge to have assumed the internal form, and in only one of these was there recovery after the injection of 200 cubic centimetres of Sclavo's serum. The words quoted occur in the letterpress of the report, but in the appended tables only 12 cases, of which five were fatal, are referred to the Bradford district. We cannot decide between the two statements, but the detailed tables seem the more likely to be accurate, especially as we have noticed in the report one or two examples of what appears to have been hasty proof-reading.

The question of disinfecting the materials in which the bacillus of anthrax is conveyed to the workers is being actively investigated at Bradford, and we may reasonably hope that success in this direction, by the use either of heat or of chemical agencies, will ultimately be attained. Dr. Eurich has found that a 1 per cent. solution of formaldehyde is an efficient disinfectant of bales opened under the liquid, and that this efficiency is not lost even when the liquid has been used three times. In the case of bales that had been steeped unopened disinfection was found to be imperfect on three occasions. The question derives much additional importance from an aspect of it to which attention has been called by Dr. J. Sinclair Holden, medical officer of health of the Melford Rural District, who, in reference to the danger arising from a horse-hair workshop in his district, states that valuable cattle have died from anthrax in the immediate vicinity. Waste water from the works had been discharged through a drain into a brook which flows through meadows used for grazing. Between August, 1904, and May, 1905, four bullocks, one milch cow, and one colt having access to these meadows and to the brook died from anthrax; and in November, 1905, a fifth bullock died from the same cause. The waste water was then conveyed to a pond within a walled inclosure, and it was found after a time not only that the water in this pond was abundantly infected with anthrax bacilli, but also that they had passed by percolation through soil to another pond on the other side of the wall. If we remember the experiments of Pasteur and the manner in which anthrax bacilli from buried carcasses were brought to the surface after a long period of time, presumably by earthworms, and communicated the disease to animals suffered to graze over the spot, we shall not view with equanimity the existence of such arrangements as those which Dr. Holden describes. At the place he mentions the waste water is now conveyed to pits sunk in the middle of a field with a subsoil of gravel, and is said all to be absorbed, but we cannot think it impossible that the bacilli with which it is loaded may still assert their presence, possibly at some comparatively distant place and in some unexpected and exceedingly unpleasant manner. We should be much inclined, before permitting the absorption of the subsoil, to add formaldehyde with a sufficiently liberal hand.

The detailed tables of cases which form part of the report describe or mention the treatment in each case. In many of them "serum" is said to have been used, in some "Sclavo's serum" is specified, and the quantity and the number of administrations are mentioned. An account of Sclavo's serum was given by Dr. Legge in 1904 to the Bradford Medico-Chirurgical Society and a report of his paper will be found in The Lancet of the 9th of July in that year, p. 89. The serum is obtained from asses after they have been subjected to a combined active and passive immunising treatment—that is, to a simultaneous inoculation with serum and with virus. After many experiments on other animals Dr. SCLAVO found the ass to be the most suitable and his process was fully described in 1897. Dr. LEGGE, in the paper above referred to, said that Sclavo's serum had then been used in 158 out of 164 cases which had come to his knowledge, and that the mortality in these cases had been 6·09 per cent., as contrasted with 24 per cent. of all cases occurring in Italy, or with 26 per cent. in 211 cases in this country. Dr. IVO BANDI has since published the histories of two cases of great severity which recovered after injections of the serum; and Dr. G. SULLI, of Palermo, has reported a similar experience in the number for Jan. 20th last of the *Gazetta degli Ospedali e della Cliniche*. It would seem, indeed, as if the efficacy of the serum were fairly comparable, in anthrax, to that of antitoxin in diphtheria, an efficacy which Sir ALMROTH WRIGHT has told us recently is much in excess of the ordinary results of serum treatment. It seems evident, however, that, pending the attainment of some trustworthy and harmless method of disinfecting raw materials, an effort should be made to protect the workmen employed about such materials by immunising injections; and after the experience of PASTEUR in protecting sheep and cattle it is remarkable, not only that so little should have been even attempted in this direction, but also that the little in question should have been attempted in India. PASTEUR, it will be remembered, protected sheep and cattle by inoculation with anthrax cultures grown at from 42° to 43° C. and attenuated. In the years 1892 and 1893 he reduced the previous anthrax mortality among French cattle from 5 to 0·34 per cent. and that among French sheep from 10 to 0·94 per cent. Dr. LEGGE now quotes from a report by Dr. LINGARD, Imperial bacteriologist to the Government of India, a statement that a severe outbreak of anthrax having occurred among prisoners working in wool in the Bareilly jail the medical superintendent at his suggestion undertook to use anti-anthrax serum both to treat the persons affected and also to confer immunity upon those exposed to the contagium. Although the serum treatment of those affected was not employed with sufficient promptitude its effects appear to have been decidedly beneficial, for out of 60 men who had been in contact with the contaminated wool, and to each of whom it was thought desirable to administer five cubic centimetres of serum subcutaneously as a prophylactic, no untoward symptoms occurred in 59. 14 days after the injections the sixtieth man contracted the disease and recovered, all the 60 having in the interval been much exposed to danger, as they were employed in cleansing the woolsheds in which the infected material was stored. It would surely not be impossible for the Bradford board and Dr. EURICH to induce some of the more intelligent workmen of the district to submit to preventive inoculation, and thus to set an example which in time might be extensively or universally followed among those who are exposed to infection. It would also seem as if there were room for a very strong recommendation from the Home Office with regard to the kind of "serum" which should be used in the treatment of occurring cases, and with regard to the necessity for promptitude in its employment. The details given in the report appear to show that valuable time was lost in more than one instance, and they render it only too apparent that time thus lost is not easily regained.

# The Council of Southend-on-Sea and their Medical Officer.

THE municipal council of Southend-on-Sea has just engaged in a conflict with the medical officer of health of the district, Dr. J. T. C. NASH, of such a nature that its issue may not impossibly exert an abiding influence upon the conditions of municipal sanitation. Dr. NASH, who is M.D. and C.M. of the University of Edinburgh and holds the D.P.H. of Cambridge, has been medical officer of health of Southend for more than six years, having been appointed and reappointed for a triennial period; and he has been eminently conspicuous for the thoroughness with which the duties of his office have been discharged, as well as for the amount of skill, care, and knowledge which he has brought to bear upon them. Southend is a large and growing health resort with a population of something like 60,000, this figure being based on the estimated residential population of over 50,000, which is swelled by a constant influx of trippers and tourists. Here we have an inevitable tendency towards the establishment and multiplication of influences injurious to health. Among these influences not the least has been the existence of oyster and cockle beds in situations not sufficiently protected against contamination; and these were said not only to have been causes of typhoid fever in Southend itself but also to have occasioned outbreaks in places where the molluscs had been sent as presents by visitors, or where those partaking of them on the spot had returned. There have also been transactions concerning the sale of food-stuffs and concerning the existence of premises unfit for their purposes, in connexion with which persons of local influence have not on all occasions set an entirely creditable example to their neighbours. The general result of the conditions has been that Dr. NASH, as an active and zealous officer, although his work has been fully appreciated by the right-minded, has incurred a good deal of ill-will in quarters in which the existence of such a feeling is the highest possible testimonial to his merits.

At the ordinary meeting of the town council on August 20th, the term of Dr. NASH'S appointment having expired on the preceding evening, a motion for its renewal had been placed as a matter of routine on the agenda, apparently with no expectation that it would be opposed. His enemies, however, had been on the alert and, possibly availing themselves of the circumstance that several of the members of the council were absent on their holidays or from other causes, one, Councillor WRIGHT, moved as an amendment that the reappointment should be for one year only and at a salary reduced from £600 to £500. This amendment was carried, and was afterwards carried as a substantive motion, nobody seeming to know that it was *ultra vires*. The council had a perfect right to re-elect Dr. NASH for the old period and on the old terms, but it could not alter either the terms or the period without an intimation to the Local Government Board, and could not appoint under the altered terms without first announcing the vacancy by advertisement. Dr. NASH refused to accept the altered appointment, but inasmuch as his term of office had expired and there was no possibility of a valid election, he consented to the urgent request of the council that he would hold office for three months at the former salary in order to give time for permanent arrangements to be made. In the meanwhile the affair has been reported to the Local Government Board and the Board has applied to the Southend council for an explanation of the grounds of its action, an explanation which so far, we believe, has not been furnished.

The local newspapers contain reports of the proceedings of the council, which throw a glaring light upon the fitness of some of the persons composing it to be entrusted with the sanitary administration of a populous district. It would be difficult to determine whether some of the speakers on the different occasions were more remarkable for the simplicity of their manners, for their ignorance of conditions important to the public welfare, or for the malevolence which they displayed towards an officer whose duties had brought him into collision with themselves or their friends. Some councillors wished to "rub in" certain considerations upon others, and it did not seem to be disputed that, as one of Dr. NASH'S supporters alleged, the medical officer of health had "prevented people who came to Southend from being poisoned by bad food," had "shown fearlessness in carrying out what is right, although it may not have suited the pockets of some here," and "had been the means of stamping out typhoid fever from the town." A continental critic 50 years ago thought that he had indicated the extreme limits of incongruity when he described the British forces in the Crimea as "an army of lions led by asses," but the incongruity is surely greater still which permits such people as the councillors who opposed the re-election of Dr. NASH to sit in judgment upon gentlemen of scientific knowledge, of education, and of integrity. We virtuously congratulate ourselves upon improvement since the time when it was said "and wretches hang that jurymen may dine"; we none the less suffer the sanitary condition of great towns, the health of the rising generation, and the physical efficiency of the race to be dependent upon the greed or the caprices of persons elected to positions of municipal authority by voters often as ignorant as themselves.

It need hardly be pointed out that the position of a medical officer of health, who devotes his whole time to his duties and is debarred from private practice, is one of peculiar difficulty and hardship, and that reasonable security of tenure is essential to the proper discharge of the duties of the post. Every conscientious medical officer of health must now be prepared for martyrdom, and a continuous supply of martyrs is not to be expected from even the most unselfish and disinterested of professions. The medical officer of health who is displaced by such a body as the Southend council loses his professional livelihood. He has no practice and probably no local connexion of a kind likely to lead to one, and although he may in time have opportunities of becoming a candidate for similar office elsewhere, the electors before whom he has to appear will possibly contain some of the same type as those who have dispensed with his services elsewhere, and they will be little likely to regard the conscientious discharge of duty in the past as a recommendation for the future. TALLEYRAND'S famous injunction to the clerks of the French Foreign Office, "Surtout, messieurs, pas de zèle," will become the customary advice of medical officers of experience to those who desire to engage in their branch of the profession, unless before long some adequate guarantee of safety in the discharge of duty be conferred upon them. Boards of guardians long ago gave conclusive evidence of their unfitness to be intrusted with the dismissal of medical officers under the Poor-law, and were deprived of the power accordingly, with great advantage alike to the medical profession, to the poor, and to the public. But the time has clearly arrived at which the caprices of municipal bodies should be subjected to independent and impartial control. The present President of the Local Government Board has on many occasions displayed an eminent degree of impartiality and independence of mind, and there are few ways in which he could more advantageously signalise his term of office than by the introduction of a measure for extending adequate protection to the officers upon whose reports his department is so often called upon to act. To render such a measure complete, it should also be enacted that any councillor, or other municipal authority, who was convicted of an offence against the laws which it was part of his duty to administer should forfeit his official position and should, for some specified time, be ineligible for re-election. By such a provision, and, we fear, by such a provision only, the councillor who seeks office for the purpose of practising adulteration with impunity, or for the protection of insanitary property, would be gradually eliminated from the bodies of which he is at present a dangerous and numerically not an inconsiderable element.

# Annotations.

"Ne quid nimis."

## THE EARLY NOTIFICATION OF BIRTHS.

THE Early Notification of Births Bill has become an Act in circumstances which will provoke much comment. As to the utility of such a measure there can be no question and members of the medical profession were amongst the first to call attention to the great good which is likely to follow on its adoption. It is unfortunate, therefore, from this point of view that the Act has not been made compulsory on all county councils to adopt. Although we cordially approve of the principle of this measure and agree that adequate steps cannot be taken to preserve the life of children of whose very existence the local authorities only too often are quite ignorant, yet we are far from approving of the manner in which it is proposed that the necessary notification shall be carried out. It has been made incumbent, failing notification by the father, that whoever may be in attendance on the mother at the time of the birth, whether it be a midwife or a medical man, shall undertake this duty. Not only this but it is further enacted by the Act that a penalty shall be imposed for any failure to carry out such notification. No one, not even the most bitter enemy of the medical profession we venture to think, would be found to accuse the members of the medical profession of a tendency to discourage any measure intended to promote the saving of human lives, and Mr. Burns, who has commented on the profession's action in this matter adversely, has not understood the point at issue. The earlier notification of births will do much towards the saving of life and the lowering of the present high infantile mortality, but we protest against the obligation of notification under the pain of a penalty being thrown on the medical man, as it undoubtedly will be in a large majority of the cases. That a medical man should be called upon to perform, under pain of a penalty, what is essentially a civil duty and above all a duty which should be incumbent especially on the parents, is a condition against which we consider the profession is quite justified in protesting. That the State should demand from a medical man what is a public duty without providing any adequate remuneration for such a service is hardly equitable. That medical men would undertake such a duty voluntarily we believe, but that they should be required to do this under compulsion is a different matter. Nor, indeed, is this the only objection to the Act as it relates to the medical profession. Cases may well occur from time to time in which the professional relationship between the medical man and his patient may well render him loth to send such a notification even if he does not feel it his duty actually to keep silence. The amendment which was moved by Lord Robert Cecil in unfortunate terms to relieve medical men from the obligation to notify under the Act would have been passed if its supporters had made the professional view clear.

## THE DUTY OF GIVING PUBLIC MEDICAL ADVICE.

IT is a penalty of belonging to the medical profession that each member adopts responsibilities of a gravity far exceeding those of most other walks in life. We individually and collectively owe duties not only to our patients but also to the world at large. Directly or indirectly we are the arbiters of the health of the people, and we are responsible for their education in those matters of personal and public hygiene upon which their health depends. It is true that much has already been done and is being done by the profession in this respect, but it cannot be denied that much yet remains to be done, more particularly in educating the public to saner views upon the treatment of minor ailments, many of them the result of the strain of modern civilised life. We are too prone to shirk this responsibility and to leave the laity, ignorant in these matters, to obtain instruction from dubious sources. Hence the prevalence of quackery in its protean manifestations, many of them insidious in their quasi-religious features, others openly unashamed, and all flourishing like a green bay tree. It may be some consolation to us to condemn these things in the medical press and elsewhere when opportunity arises, but permanent benefit can be assured only by educating the public to realise for themselves the fallacies and absurdities of the claims of charlatans. We may agree with Carlyle that the population is composed chiefly of fools, but if so it is the duty and the privilege of our superior knowledge to make every effort to relieve their ignorance. That many are willing and anxious to learn is shown by the avidity with which they absorb the tainted medical pabulum provided for their gratification by the lay press. Like the average English schoolboy who acquires his knowledge of sexual physiology from obscene sources, often to his lifelong regret, the public learn their pseudo-medicine from catchpenny paragraphs and old wives' tales. Is it any wonder that the vendor of preposterous nostrums flourishes whilst the general practitioner starves or is ill-requited for his services? It is difficult to suggest remedies for this state of affairs. Those best qualified to deal with the matter shrink from the publicity involved, dreading above all things the stigma of self-advertisement even if they are willing to devote the necessary time without hope of remuneration. It is true that occasionally the acknowledged leaders in the profession are heard upon the philanthropic platform on questions of school hygiene, and so on, and sometimes their opinions, veritable or alleged, find their way into the lay press. Rarely, indeed, is an accurate and sensible book or pamphlet written without *arrière pensée* purely for the instruction of the laity. A collection of such papers on "Eye Strain and Eyesight" has recently been published by Messrs. J. and A. Churchill, written by Dr. J. Grimshaw,[1] a general practitioner. The material is excellent on the whole, but while the author is inclined to inveigh against the specialist, some minor errors would not have crept in if the articles had been written by an ophthalmologist. Nevertheless, we cannot but think that such a book will do good, and we hope that the general public will read it, and mark, learn, and inwardly digest its contents. The fact, moreover, that the author is not a specialist has its significance; the censorious cannot suggest that the work was published with self-interested motives. An ophthalmic surgeon might have improved the text in a few details, but he would have been compelled to withhold from the book the authority of his name.

## THE CIGARETTE HABIT.

THE smoking of cigarettes is increasing and the reasons why this form of indulgence in tobacco is outstripping the use of pipe or cigar are interesting to the medical man. A really good cigar is expensive and to be appreciated it must be smoked at leisure. However good the cigar may be the smoke is strong, heavy, and lingering compared with that of the cigarette. Medical men have not much time and often not much money to spare, while the less permanent the odour of their tobacco is the more convenient for them. The pipe, of course, can be taken up at any time, but the use of the pipe involves some preparation and entails also a larger armamentarium. The pipe-smoker must carry with him besides his pipe his tobacco in a pouch. Before he can smoke the pipe must be carefully filled and even then something may go wrong with the combustion, smouldering may proceed irregularly or some difficulty may be found in keeping the "fill" well alight. All these sources of trouble are avoided in the cigarette. The cigarette is at once ready to smoke, it only requires lighting, and, as a rule, once alight it burns regularly. The smoker of the cigarette reaches his aim more quickly and with less trouble than does the smoker of the pipe, and if smoking is to be a soothing habit there must be nothing mentally irritating connected with it. It is thus that the cigarette habit is encouraged and eventually established among medical men just as much as among the public, and once that is so the habit becomes confirmed and both cigar and pipe are neglected. The worst of the cigarette habit is that the smoker consumes more tobacco in that form than he would in any other. The cigar and pipe soon satisfy the tobacco craving, the cigarette smoker is rarely warned in time of his excess. The cigarette appears as a mild form of smoking of which the smoker never tires and cigarette replaces cigarette with practically little intermission throughout the whole day. Few can deny that such a practice is very injurious to the health and the slaves to it find it hard to break the chain which binds them. The ready-made cigarette is largely responsible for the enormous growth of this servitude, and to those who are conscious of having acquired an injurious habit of indulgence which they honestly are anxious to reduce, if not to abandon altogether, there is one piece of advice which we would urge upon them—we have hardly known it to fail. Let the inveterate cigarette-smoker give up the ready-made cigarette; let him buy pure paper and good tobacco; let him make his cigarette just before he smokes it; and he will find that he will smoke consequently fewer cigarettes and be all the better for it. Such a method, if honestly adopted, would make an end to the "chain" smoker who, when he has nearly finished a cigarette, immediately proceeds to light another from the expiring ember, and ends the day with an appalling consumption of 50 cigarettes or more.

---

[1] Eye Strain and Eyesight. By John Grimshaw, M.D., B.S. Lond., D.P.H. Cantab. Written for the General Public, but especially for the Parent, Teacher, and Publicist. Pp. 77. Price 1s. net. London: J. and A. Churchill.

## THE STUDY OF EPIDEMIOLOGY.

THE study of epidemiology is not only fascinating but must be also one prolific of good results. So, much still remains to be done. Formerly in many lands, and more especially in India, outbreaks of cholera and enteric fever, for instance, were held to be due to the epidemic constitution of the air, a term aptly criticised by Dr. Billings of America as one merely expressive of ignorance. To seek for the causation of specific diseases in the air—that is to say, to try to search for the first cause of a specific disease in the air *per se*—is, of course, a futile proceeding, but, on the other hand, to study the condition of the atmosphere, of the temperature, or of the other natural conditions that form the environment of the organisms of the specific diseases—such a proceeding must be fraught with advantage. It is well known how these specific diseases occasionally burst out in aggravated form; often the reason of this can be recognised, as witness the outbreak of measles in Fiji in a population hitherto not having had experience of this affection; or the outbreak of small-pox at Leicester, of a comparatively recent date, due entirely to the foolish abstinence for years of the population from the beneficent operation of vaccination. But, on the other hand, the specific fevers may be seen to fluctuate without these or similar factors. Take scarlet fever as an example. Graves showed how in Dublin it was of a very benign type from 1804 to 1831, and then began to increase in severity, until in 1834 it assumed the form of a destructive epidemic. Considerable fluctuations in this disease have again occurred from 1859 to 1892. What are these fluctuations due to? The influence of isolation hospitals will hardly explain them. Diphtheria is another disease exhibiting these variations in virulence and prevalence, appearing at one time in widespread and fatal epidemics and at another in mere local outbreaks. In the East we are able to explain more fully the seasonal appearances of the epidemic diseases; this explanation rests on the vital peculiarities of the special organism. Thus as regards cholera extensive epidemics do not, as a rule, occur during the long dry season in the Punjab and Central Provinces of India for the reason that the cholera organism is rapidly destroyed by drying. The enteric fever organism, again, is much more able to resist drying than the cholera vibrio, and hence it is not so distinctly a seasonal disease as cholera. The study of epidemiology should include, therefore, besides the characteristics of the various specific bacteria and micro-organisms also the influence of temperature and humidity on their growth, the methods by which they are brought into the human organism, and the personal condition determining the furtherance or the decline of epidemics. Epidemiology is essentially that branch of natural history which treats of the micro-organisms to which the microbes of epidemic diseases belong. This definition emphasises the distinction between the old unreasoning aspect of epidemiology, that of the "epidemic constitution of the air," and the more enlightened modern view which, recognising the prime essential force of the micro-organisms as the originators of disease, seeks to determine the nature of the external environment influencing these organisms. Such a study as the latter must in the end reap a golden harvest.

## MEDICAL EDUCATION IN THE UNITED STATES.

THE *Journal of the American Medical Association* of August 17th is the yearly educational number, and makes valuable reading for all of us who are interested in the enormously important subject of medical education. The very numerous medical schools of the United States are tabulated in alphabetical order in this issue. The total number of American medical colleges is 161. Illinois, with a population of 5,319,000, has 14 medical colleges, all of which are situated in Chicago; Missouri, with a population of 3,320,000, has 11 medical colleges, seven of which are situated in St. Louis; Nebraska, with a population of 1,000,000, has four medical colleges; while New York, with a population of about 8,000,000, has 11 medical schools, eight of which are in New York city. The total number of medical students in the United States for the year ending June 30th, 1907, was 24,276, a decrease of 928 below the year 1906 and a decrease of 1871 below the year 1905. Of this total number, 22,303 were in attendance at the regular medical schools, 1039 at the homœopathic schools, 545 at the eclectic schools, 97 in the psycho-medical, and 292 in nondescript schools. The number of medical students at the regular schools is the smallest since the year 1900, the decrease in students seeming to be at the expense of the scientific men, whose curriculum is properly standardised. The total number of graduates for the year ending June 30th, 1907, was 4980, a decrease of 384 below the year 1906, 626 below 1905, and 767 below 1904. The number of medical graduates in the United States this year is the lowest since 1890. The number graduated from the regular schools was 4591, or 250 less than in 1906. During the past year there were 928 women studying medicine in the United States, or 3·8 per cent. of all medical students, as against 3·5 per cent. in 1906. There were 211 women graduates this year, or 4·2 per cent. of all medical graduates. During the past year five medical colleges have ceased to exist, while five new ones were added to the list. Of the 161 medical schools in the United States 131 are regular schools, 17 are homœopathic schools, and the remainder are eclectic and nondescript schools. Of the 152 medical colleges in the United States which have graduates 97 are situated in cities of 100,000 or greater population, and these schools had 3730 graduates, while the 55 schools situated in cities of less than 100,000 population had 1250 graduates. The standard of medical education in the United States varies very considerably in different States, each State making its own laws in this respect. In New York State the supervision of all departments of education is in the hands of the regents of the University of the State, a body established in 1784. The regents have full control of the practice of medicine. A four-year course of high school education is required for admission to medical study and a four-year course in medicine is also required before an individual can be admitted to the examination for licence to practise. The State Board of Medical Examiners is appointed by the regents from the licensed medical practitioners of the State and the regents have the power of removing any member of this Board. There are nine medical schools which require for admission one or more years of work in a college. Of these colleges Johns Hopkins Medical School and Harvard University Medical School require a degree in arts before commencing the study of medicine. According to the

*Journal of the American Medical Association*, the worst flaws in the system of medical education in the United States are the generally prevailing low standards of preliminary education and the down-grade competition of bogus systems of medical education. "It is," says our excellent contemporary, "as much the duty of the medical profession to demand laws protecting the public from the ignorant and poorly prepared physicians which are being turned out each year by the number of low grade institutions which are parading as medical colleges as it is for them to decry the adulteration of foods and the designs of advertising quacks. To fulfil that duty requires that a public demand be created for laws which will insure the adoption and enforcement of higher standards." On the whole it would appear that a decided advance has been made in medical education in the United States during the past few years. An immense amount of money has been forthcoming for purposes of research and for erecting hospitals and other buildings connected with medicine. It is a most hopeful sign, too, that during the past year no less than 40 medical colleges have voluntarily raised the standard of entrance requirements, while three State examining boards have taken similar action. It may be stated that there are in the United States very nearly 130,000 medical men. The following ten States have the largest number of medical men in proportion to their population: District of Columbia, 1 to 258; Oklahoma, 1 to 284; Colorado, 1 to 351; California, 1 to 388; Vermont, 1 to 510; Washington, 1 to 516; Indiana, 1 to 519; Illinois, 1 to 521; Missouri, 1 to 531; and Ohio, 1 to 544. North and South Carolina and Minnesota have the least number of medical men in proportion to their population. Criticism from outside sources is not easily borne by those countries against which it is directed, and we are glad to find ourselves recording the views of Americans. In the case of medical education in the United States it seems that the medical profession as a whole and all the responsible medical papers are agreed that the standards are too low. Some of the States have a very good system of medical education but other States are very backward, and while there are medical schools in America which are equal to any in the world there are others in which the education given is almost farcical. In a few cities the multiplication of medical schools is carried to an absurd extent, as in Chicago and in St. Louis. All who have considered these points admit that an equally high standard of medical education in all the States of the country would be the only complete remedy, but it is clear that such a remedy is not yet attainable.

## THE MEDICAL EXPLORER.

ZONE after zone in Central Africa is in course of annexation under the civilising imperialism of Great Britain, the latest being that just south of Lake Bangweolo, now occupied by the Livingstonia Mission on the invitation of the administrator of N.E. Rhodesia. An appeal in the February of last year to the United Free Church of Scotland for funds required for the new station met with the substantial response of £3000 and in the October following the mission work was started under Mr. Malcolm Moffat (grandson of the well-known Dr. Moffat and nephew of Dr. Livingstone), with Dr. Alexander Brown, an Aberdeen graduate, as his coadjutor. Having reached Chitambo, the scene of their labours, in May last, they settled provisionally at Serenje, the Government station, and in June made a pilgrimage to the monument erected on the spot where, on Mayday, 1873, was laid to rest the mortal part of David Livingstone. There they had an interview with the local chief, Chitambo by name, who narrated what he had heard from his father of the last hours of the "Engelesa" (Englishman) as the great medical explorer was called, details too extended for citation here, but redolent of the love and veneration he had inspired among the native tribes. "He was sick," said Chitambo; "he was here just one day and another day. His boys built him a 'msasa' (booth or hut) under the 'mupundu' tree and it was there that he died. His men took his body; they buried the heart and other parts; but his body they kept. They buried them under the mupundu tree; the body they dried in the sun. They stayed three moons drying the body; and the old Chitambo called the people from all the country round and they brought forth the drums, and they wailed the Engelesa. ...... Three months his men stayed in the village and they dried his body and put it in a box, and they tied it round and round, and Chitambo said, 'Engelesa has died here; it is his country now.' Then Engelesa's men brought forth much cloth, and gave it to the people, and they went away with the body to the north." Mr. Moffat, from whose graphic letter this narrative, quite Hebrew in its simplicity and power, is taken, has more to tell us of the reverential love in which Livingstone's memory is cherished in those regions; as, for instance, how the present Chitambo added: "I was a young boy when the old men brought me to the tree and told me of 'Engelesa,' and they said, when the white people came, take them to this tree and tell them about Engelesa." Livingstone's conquests were more than those of science; they were conquests of humanity. "This is his country now," said the old Chitambo who witnessed his death and burial. It is indeed "his country"—a country which, like its first explorer and occupant, knows no distinctions of race or creed or colour, but belongs to the ever-extending area of liberty and enlightenment whose pioneers, from the Portuguese missionaries downwards, have made the healing art a first weapon of conquest and the arts of peace a second.

## INTESTINAL OBSTRUCTION.

THE *Johns Hopkins Hospital Bulletin* for August contains an important article on intestinal obstruction by Dr. Joseph C. Bloodgood, the result of a careful clinical and pathological summarising of the experience of Dr. Halsted's clinic. Two forms of obstruction are recognised—strangulation ileus and obturation ileus. In strangulation ileus, in addition to obstruction to the lumen of the intestine there is also interference with the mesenteric blood-supply; in obturation ileus there is no interference. In obturation ileus the period of survival from the onset of obstruction to operation is longer than in strangulation ileus, but in both forms early operation gives the best results. Dr. Bloodgood insists that intestinal obstruction from its onset should be looked upon as a surgical condition and that no conservative treatment should be adopted except washing out of the stomach and high rectal enemata. These should be used only in the early hours and if relief is not immediate laparotomy should be performed. All food, liquid or solid, and cathartics by the mouth are contra-indicated from the onset. Morphine should not be given unless operation has been decided upon. These rules, which are now generally taught, simple as they are, are not always followed in the cases of patients admitted into hospital. Too often drastic purgatives are given and symptoms are masked by opium. In strangulation ileus it is interference with the blood-supply that causes the acute symptoms of onset—intense pain, peritoneal shock, and primary reflex vomiting. Secondary vomiting, fæcal in character, and distension are due to the obstruction of the lumen of the intestine and are late symptoms which should not be waited for in order to make the diagnosis. As shown by Lennander[1] the intestine is insensitive and the pain of intestinal obstruction is due to stretching of the mesentery. Hence the pain is not always referred to the position of the strangulated gut. In two cases of volvulus of the sigmoid flexure Dr. Bloodgood found that the pain was referred to the region of the left kidney which corresponds to the origin of the nerves supplying the meso-sigmoid. When peristalsis takes place the pain becomes intermittent or colicky. Thus the most characteristic symptom of strangulation is sudden intense abdominal pain. If situated in the right iliac fossa it may suggest appendicitis; in the gall-bladder area, gall-stones; in the region of the kidney, renal colic. In the two cases of acute volvulus of the sigmoid flexure just mentioned the pain could not have been differentiated from that due to renal calculus, and in one it was referred to the testicle. A patient who complains of sudden abdominal pain of such intensity that he begs for relief should be examined critically and the possibility of an acute lesion demanding early operation should be considered. In the pain of strangulated ileus the shock is more marked than in that of appendicitis or of hepatic or renal calculus, but usually is not as severe as that of acute hæmorrhagic pancreatitis. The primary nausea and vomiting are not at all characteristic of obstruction and may be present in any acute abdominal lesion. In obstruction there are symptoms of shock, rapid pulse and pale face. The patient may say that he feels weak, as if he had been kicked in the abdomen, whilst the moment before the attack of pain he may have been in the best of health and strength. If the abdomen is carefully examined the localised tenderness and rigidity of early appendicitis and cholecystitis are not found but more general muscular rigidity without tenderness. Occasionally the distended loop above the strangulation can be palpated (von Wahl's sign). If this is situated in the pelvis it may be felt per vaginam or rectum. A palpable distended loop is pathognomonic of strangulation ileus, but it can be distinguished only in the early hours before general distension obliterates it. Another sign of strangulation is peristalsis. How often it can be made out cannot be said; it always is absent in the late stages when the intestines are distended. An important early sign of strangulation, first described by Cushing in Dr. Halsted's clinic in 1898, is leucocytosis. In a case of acute volvulus mentioned the count was 34,000 three hours after the onset. In obturation ileus the acute primary symptoms are frequently absent. The abdominal pain is more a general discomfort than an acute agony. Constipation first attracts attention, then distension, and then vomiting, which may in a case of delay be fæcal. If the obturation is in the small intestine peristalsis is a constant early symptom; if it is high, distension is slight or absent and fæcal vomiting is early. In obturation of the colon the distension may be extreme before vomiting takes place.

---

[1] THE LANCET, August 17th, 1907, p. 465.

## THE NEED FOR PUBLIC MORTUARIES.

Dr. Lovell Drage, the coroner for Hertfordshire, is a gentleman of extensive knowledge and of scientific caution, so that he is probably correct in the assertion which he is reported to have made, at an inquest held last week upon the body of Arthur Beaumont, to the effect that in a place where there is no public mortuary, the police are entitled to take a corpse to the private house of the overseer, and to deposit it there, in the drawing-room if they can find no place more suitable, pending the formalities which would precede interment. We are not surprised that a contemporary should speak of the coroner's announcement as embodying "a new terror to overseers," and the reported declaration of Police-Sergeant Defeher, the senior police officer at New Barnet, that in future he would "see that bodies were taken to the homes of the overseers pending inquests" reminds us of the well-known story of the commissariat officer in the Peninsula who angrily complained to the Duke of Wellington that General Picton had threatened to hang him if certain provisions were not forthcoming at an appointed place and time. The Duke sympathised, but advised the complainant to use all possible diligence because "General Picton was very likely to keep his word." Sergeant Defeher speaks as if he were not to be trifled with, and Hertfordshire overseers must clearly be prepared for the worst. With all deference to Dr. Drage we should have fancied that the provision of a mortuary was the duty of the district council or other local sanitary authority and that the overseer could not be held personally responsible for neglect, but we sincerely hope he may be right and that the law may indeed be such as to afford to overseers the strongest possible inducements for keeping sanitary authorities up to the performance of this most necessary duty. There are discrepancies between different reports of the inquest as to the nature of the place to which the body of Arthur Beaumont was actually conveyed, one report describing it as a railway tank-house, and another as "a stable infested by rats," but, even without the last-mentioned additional horror, the place was clearly unsuitable for the purpose to which it was applied. We have on many occasions spoken strongly with regard to the necessity of proper mortuary accommodation in all parishes, and, wherever the responsibility may rest, there is at least no doubt that every sanitary authority has full power to make the necessary provision. We would suggest that the houses of the chairmen of authorities in default would be even more suitable temporary resting-places for dead bodies than the houses of the overseers, and if the police have any discretion they might advantageously exercise it in the indicated direction.

## THE HOME OFFICE AND FACTORY ELECTRICITY SUPPLIES.

THE Home Office has recently issued a draft copy of regulations which apply to the generation and transformation as well as the distribution and use of electrical energy on all premises under the Factory Act at pressures above 130 volts on a continuous circuit and 60 volts on an alternating circuit. Regulations were issued in 1904 having reference to the use of electrical energy at medium pressure. It was found, however, that although the requirements had been in force for some years as Board of Trade regulations many difficulties arose in regard to their enforcement under the Factory Act. In issuing the present regulations the Secretary of State, while realising that there may be danger at pressures below those we have quoted, has been guided by the fact that the serious accidents from shock which have come to his notice have been at pressures generally exceeding the limits now laid down. It appears that while in many electrical installations the utmost care has been taken to prevent unnecessary danger there are striking exceptions to this rule even in works recently carried out. In drafting the regulations the Home Office rules for the use of electricity in mines, the various Board of Trade rules, including those for the use of electrical energy at medium pressures, the rules of the Institution of Electrical Engineers, and those of the fire insurance offices have been consulted. Some of these prescribe details to a greater extent than would be possible in regulations applicable to such a wide field as now dealt with, and in many points it has been considered, in view of the rapid development of electrical engineering, more expedient to indicate broadly the dangers to be avoided and the nature of the precautions required, than to define particular means of insuring safety. The view apparently prevails that where the supply of electrical energy is at low pressure there is no danger of shock, whereas such is not the case. Fatal cases of shock at low pressures are by no means of rare occurrence. They may occur, for instance, by a person making contact simultaneously with two live conductors at different pressures, but more usually they result from the victim merely touching one conductor whilst being in contact with the ground. Momentary contact may not produce a serious shock, but a person who happens to grasp the conductor may be quite unable to release his hold and the shock is prolonged until assistance comes. In such circumstances a shock may prove fatal in a few seconds. The dividing line between conditions which on the one hand will render the shock trifling and on the other fatal is so narrow that it is necessary to provide that no shock will be received at all. The regulations are subject to further consideration and for the most part provide for efficient insulation and for the fencing off of "live" wires, terminals, switchboards, and so forth.

## BRONCHIECTASIS ASSOCIATED WITH THE INFLUENZA BACILLUS.

THE causal relation of the influenza bacillus to certain chronic pulmonary affections is not sufficiently recognised. In 1903 Dr. Lord of Boston isolated the influenza bacillus in a large number of cases of subacute and chronic "cough." In 1905 Dr. Boggs, house physician to Professor William Osler at the Johns Hopkins Hospital, reported six cases (in two of which there was a necropsy) which ran a course like that of chronic pulmonary tuberculosis, but the repeated examination of the sputum showed absence of the tubercle bacillus and the presence in large numbers of the influenza bacillus. In the *Montreal Medical Journal* for August Dr. E. T. F. Richards and Dr. F. B. Gurd have reported the two following cases. A Russian, aged 45 years, was admitted into the Montreal General Hospital complaining of pain in the left side and epigastrium, cough, expectoration, weakness, and loss of appetite. These symptoms were of some weeks' duration. On admission he was found to be poorly nourished. The skin was moist and he perspired frequently. There was severe cough with profuse, fœtid, yellowish-green, watery, purulent sputum. The cough was most marked in the morning and upon change of position, especially when he turned from his back to his right side. The chest was very emphysematous. Over the left lung posteriorly from the fifth rib downwards the percussion note was impaired and metallic blowing breathing, accompanied by loud blowing moist râles, was heard. Throughout both lungs the breathing was very harsh and there were numerous loud moist râles. At times the blowing quality of the breathing over the left lung was absent and was replaced by distant breath sounds. After violent attacks of coughing and expectoration the blowing breathing became more distinct. Repeated examination of the sputum showed no tubercle bacilli. The patient gradually failed and died, extremely emaciated, six weeks after the beginning of the illness. The necropsy showed firm adhesions over the posterior and external surface of the left lung and thickening of the pleura on the posterior surface. On section the lung tissue was airless and friable. The cut surface was of a reddish-grey colour, studded with small greyish-white nodules which were surrounded by a zone of hyperæmia. Many of the nodules had broken down into small abscesses. In the posterior part of the lower lobe, just above the root of the lung, were several small irregular cavities communicating with one another and with the large bronchi. These cavities were found to be sacculated dilatations of the bronchi, and they communicated with smaller cavities in the upper lobe. The posterior half of the right lung was consolidated. The surface was studded with innumerable small irregular nodules varying from three to six millimetres in diameter and surrounded by a wide dark red zone. Many of the larger nodules were broken down into abscesses. Examination of the lungs for the tubercle bacillus was negative but the bacillus influenzæ was found. Other organisms—staphylococcus aureus and albus, streptococcus, pneumococcus, and the micrococcus catarrhalis—were also found. Microscopic examination showed no evidence of tuberculosis but the characteristic lesions of broncho-pneumonia and miliary abscesses. In the second case a poorly nourished man, aged 52 years, came under observation. He had suffered from cough and fever for eight months. The lungs showed signs of consolidation and cavity formation. There was severe cough, especially on change of position. The sputum was fœtid and nummular, the small masses being suspended in watery pus. Repeated examination showed absence of the tubercle and presence of the influenza bacillus. There was dulness from the fifth dorsal spine and seventh rib in the posterior scapular line to the base. Over this area breath sounds were diminished and accompanied by numerous loud moist râles. That the influenza bacillus was the cause of the lesions in these cases cannot be stated definitely. However, its presence in large numbers in chronic pulmonary conditions is usually taken as suggestive of its being the primary infecting organism. The course of these cases and of those previously recorded in which the influenza bacillus was found is in many respects the same as that of chronic pulmonary tuberculosis. There is usually much fœtid sputum, hæmoptysis is not uncommon, and there may be a history of chills and sweats, with progressive emaciation. The physical signs are those of acute bronchitis with cavity formation and consolidation.

## A TUBERCULOSIS EXHIBITION.

WE congratulate the Women's National Health Association of Ireland, established in March last by Her Excellency the Countess of Aberdeen, who is the first President of the society, on the very practical step it has taken in founding the Tuberculosis Exhibition referred to in the letter from our Irish correspondent. The object of such an exhibition in the present universal campaign against tuberculosis is to spread abroad among the people much-needed information in reference to the means for preventing, as well as the measures for securing the arrest of, the disease, especially in its early stages. The exhibition, through its various sections, aims at educating the people, by objective teaching and demonstrations, as to the prevalence, distribution, varieties (both surgical and medical), occurrence in men and animals, causes, cost, prevention, and cure of tuberculosis. By means of models, specimens (both human and animal), photographs, charts, diagrams, appliances, and so on, the main facts in regard to the disease, its prevention and cure, will be taught in a way that it is hoped will be vastly superior to leaflets, papers, or ordinary lectures. The plan has been adopted in Germany, but it has been specially successful in America, where apparently the first exhibition of this kind was held in Baltimore in 1904, under the auspices of the Maryland Public Health Association. In the next year, 1905, a tuberculosis exhibition was organised by the National Association for the Study and Prevention of Tuberculosis and by the Committee for the Prevention of Tuberculosis of the Charity Organisation Society of New York. During the last two years the Tuberculosis Exhibition has been sent all over the States in North America, local medical men in the various centres using the exhibition as a means of educating the public as to the prevention and cure of the disease. It is calculated that close on three-quarters of a million of people have visited these exhibitions in the United States of America. In a country like Ireland, where up to the present no decline whatever has taken place in the occurrence of the death-rate from tuberculosis resembling the decline in other countries such a step in the instruction of the people as this exhibition will afford is specially called for, but we believe similar aids would be most helpful in England and Scotland, especially in the great centres of population. We again congratulate the Women's National Health Association of Ireland on having inaugurated such an exhibition and we shall watch with great interest any further development in its progress.

### THE RISKS OF MEDICAL PRACTICE.

EVERY medical man knows that both he and his fellows run daily risks of which the average layman is quite ignorant, and it is only when a startling tragedy such as recently occurred in Leeds is reported that the populace at large is aware of how a medical man takes his life in his hands, when, for example, he is dealing with a patient of unbalanced brain. Dr. Walter Clapham Hirst, a young practitioner of Leeds, was on the morning of Saturday, August 31st, shot dead at his surgery door by one of his patients named John William Harrison, who immediately after the murder committed suicide. Dr. Hirst had recently been attending Harrison whose mental condition was obviously unstable, for only two days before the tragedy a friend of Harrison received a letter from him stating that he was suffering "all through calling in that doctor who struck me on both my knees which if you will enquire brings on terrific epileptic fits." It is quite evident from this that Dr. Hirst had been testing the patient's patellar reflexes. This apparently preyed upon Harrison's mind and early on Saturday morning he called at Dr. Hirst's house, who came down to answer the night bell. Nobody saw exactly what happened, but the neighbours heard gunshots, and when they arrived they found the two bodies lying close to one another. At the inquest held on Sept. 2nd the jury found that Harrison had committed murder and had afterwards committed suicide. The jury added a rider that in their opinion there had been neglect on the part of Harrison's friends in not looking after him better. One specially sad feature of the tragedy is that Dr. Hirst had only been married for two months, and to his widow we tender our respectful sympathy in her terrible trial.

### THE SOLUBILITY OF AIR IN FATS AND ITS RELATION TO CAISSON DISEASE.

THE view that the symptoms produced by withdrawing the body from high atmospheric pressure and restoring it to low or normal pressure are due to liberation of bubbles of gas is confirmed in an interesting series of experiments recorded in a paper which under the above heading we print elsewhere in our present number. The writer of the paper, Dr. Horace M. Vernon, experimented with olive oil, cod-liver oil, and lard, with the result that he found that in spite of the very different composition of these three fats the solubility of oxygen and nitrogen was practically the same, and, moreover, that this solubility is the same at temperatures of 37° C. and 15° C. respectively. It is therefore fair to assume that human fat would behave similarly and the proportion of unsaturated acids present in a fat appears to have little or no influence upon its solvent powers for oxygen and nitrogen. Taking a mean of all the values obtained with cod-liver oil and olive oil at 37° C. and with lard at 45° C., the solubility of oxygen was found to be 4·5 times greater than in water and that of nitrogen 5·3 times greater. It has been shown that blood plasma and blood dissolve distinctly less nitrogen than an equal volume of water, and hence it may be concluded that at body temperature the fat of mammals dissolves at least five times as much nitrogen as water or as blood and blood plasma. Dr. Vernon points out that the bearing of these results upon many phases of caisson disease is probably a direct one. Necropsies have shown softening of some inches of the spinal cord in the dorsal region, signs of myelitis, and irregular fissures in the mid-dorsal cord, probably produced by the escape of gas. Similarly divers have exhibited necrobiosis and hæmorrhages in the spinal cord and distension of the blood-vessels by air bubbles. The injury produced on fat-containing tissues is thus explained by the ready solubility of nitrogen in the fat of these tissues, and caisson disease would appear to have its origin in the liberation of gas bubbles from these fatty tissues which occurs when the high atmospheric pressure is withdrawn. Dr. Vernon may be congratulated on having made an interesting and important note on the causation of caisson disease.

### DANGER IN THE COFFEE URN.

MOST persons are familiar with the steaming urn which now is invariably to be found on the counter of refreshment-rooms, and the majority of these vessels cannot be a source of danger to the patrons of the café or restaurant, being merely open boilers, provided apparently with plenty of room for the escape of steam. While that description applies to the urn which is used for merely heating water it does not apply, it would seem, to the urn used for making coffee. The coffee urn consists of two compartments, the lower one containing the boiling water and the upper one the coffee, placed in a gauze strainer. As soon as the water boils it is forced up a narrow tube and distributed over the coffee. There is thus a more or less continuous process of hot percolation going on which is calculated thoroughly to exhaust the coffee. Doubtless the temperature of the liquid is also higher than ordinary boiling point on account of increased pressure. The vulnerable point in this apparatus is, however, the narrow tube which serves to convey the boiling water and to distribute it over the coffee. It is obvious that if this tube should get choked there would be no escape of steam and pressure would rise in the lower container until at last relief would be obtained by the urn bursting, and the result would be a miniature boiler explosion. This is not mere speculation, for a case of exactly this kind occurred recently at Bradford which unfortunately caused the death of a woman who happened to be present at the time of the explosion. Had the place been filled with customers the result would most probably have been still more serious. There is evidently danger in the coffee urn, and it seems to us that the Board of Trade might insist upon these much used appliances being fitted with some safety contrivance, or at any rate being so constructed that the great potentialities of steam in them may not be allowed to reach a dangerous point.

### HÆMOLYSIS IN TYPHOID FEVER.

THAT the typhoid bacillus can form a hæmolytic substance has been demonstrated *in vitro* by E. Levy for the blood of the dog. In the course of an instructive paper by Professor M. B. Schmidt of Zürich, published in the *Centralblatt für Allgemeine Pathologie und Pathologische Anatomie* of August 15th, some interesting observations are recorded which tend to show that a destruction of red blood corpuscles can occur in the course of the disease in man. In 11 out of 13 fatal cases examined for this purpose signs of hæmolysis were discovered. In the spleen an accumulation of cells containing red blood corpuscles or hæmosiderin was found in the pulp or even free pigment masses. In the liver free hæmosiderin granules were found in the lobules, usually in the liver cells or in Kupffer's stellate cells, and occasionally in the connective tissue of the liver. Pigment was never found in Glisson's capsule. Such a deposit of pigment in the liver in young children Professor Schmidt regards as physiological, since he has repeatedly observed it in cases when there was no ground for suspecting any pathological condition of the blood, but even in children it is not constant and in adults it must be regarded as pathological. A further interesting proof of the occurrence of hæmolysis in typhoid fever was afforded by the investigation of the lymphatic apparatus at the necropsy of a young man, aged 25 years, who died from a severe attack of typhoid fever, bacilli having been found in the blood during life. No intestinal hæmorrhage occurred and there were no indications of a hæmorrhagic diathesis, but in addition to an intense deposition of hæmosiderin in the liver and spleen a similar deposit was found in nearly all the lymphatic glands except the mesenteric, as well as in the tonsils. The hæmosiderosis was very marked in the retroperitoneal, parapancreatic, axillary, and cervical glands. The Berlin-blue method gave blue staining of the lymph channels throughout their course, the pigment being deposited in the large cells which crowded these channels and not in the actual parenchyma of the gland. That this formation of hæmosiderin was of recent date, and indeed in actual course of progress, was proved, since in addition to the cells containing that substance and others with iron-free pigment granules, red corpuscles and cells with ingested red corpuscles were abundantly present in the perifollicular lymph paths, especially in the cervical and axillary glands. These observations were confirmed in three cases subsequently examined. From these appearances Professor Schmidt infers that in typhoid fever the red corpuscles which have suffered damage in the general circulation are taken to the lymphatic glands either by the blood stream or lymphatic channels in order to undergo some further change. These observations are of considerable interest, not only from the light they throw upon the action of the toxins of the typhoid bacillus but also from their importance in connexion with the processes of hæmolysis in general.

## AFFECTIONS OF THE OPTIC NERVE.

THE oration before the American Academy of Ophthalmology and Oto-Laryngology, delivered in September, 1906, by Mr. R. Marcus Gunn, senior surgeon to the Royal London Ophthalmic Hospital, has recently been published.[1] Mr. Gunn's experience, with the special opportunities which he has enjoyed as ophthalmic surgeon to the National Hospital for the Paralysed and Epileptic, may be gauged by the fact that he has seen over 900 cases of choked disc. A paper which reviews all too briefly such ripe experience will be read with unusual interest and profit. The various causes of disease of the optic nerve are first enumerated, stress being laid upon peculiarities of structure and development which help to explain the lesions. It is suggested that the afferent pupillary fibres are collaterals of the visual fibres, a view which is supported by the loss of reflex constriction of the pupil in the Argyll-Robertson phenomenon, for it has been shown that in tabes the collaterals of the fibres of the posterior columns of the cord suffer first. Mr. Gunn agrees with many modern observers in thinking that primary destruction of the retinal ganglion cells is commoner than was formerly thought. Examples are to be found in amaurotic family idiocy, probably in tobacco amblyopia, and possibly in cerebral diplegia, abiotrophy, and so on. Primary affection of the myelin sheaths is instanced in disseminated sclerosis, the early visual signs of which are best explained by defective insulation and rapid exhaustion. The theories of the choked disc of intracranial disease are reviewed. As Mr. Gunn picturesquely remarks: "The field is notoriously slippery; there are occasional pitfalls, too, and false lights play upon what appears to be a path to the gateway of knowledge." He adheres to the original theory of von Graefe, which attributes the condition to disturbance of the circulation produced by increased intracranial pressure. He rightly emphasises the fact that the condition is primarily an œdema, true inflammatory signs being present only in later stages. The relative infrequency of choked disc in myopic eyes affords evidence of the importance of local anatomical factors, and the most likely one is the mode of ending of the intervaginal space. Obstruction to the return of blood from the papilla by pressure on the pial veins is a contributory cause of papillitis in these cases. We have sufficiently indicated the scope of the oration, and we hope that Mr. Gunn may elaborate his opinions and publish them in some more permanent form.

## EPIDEMIC CEREBRO-SPINAL FEVER.

IN London during the last fortnight a few cases of epidemic cerebro-spinal fever were notified from widely-separated districts, including Battersea, Shoreditch, and Woolwich. In Scotland during the week ended August 31st there were ten deaths from this cause registered in Glasgow, two in Dundee, one in Aberdeen, and one in Paisley. In Glasgow the weekly report issued on August 30th showed that there were at that time 38 cases under treatment. In Belfast during the week ended August 31st there were seven deaths registered as being due to this cause.

## LIQUID AIR IN DERMATOLOGY.

IN the *Journal of the American Medical Association* of August 3rd Dr. Henry H. Whitehouse gives his personal experiences in the use of liquid air in dermatology. A mild and short exposure of the normal skin to a spray of liquid air produces blanching, followed by a moderate congestion; a longer exposure freezes and anæsthetises the part. In applications by means of a swab of cotton wool the resulting inflammatory swelling varies in degree according to the amount of liquid air used, the pressure applied, and the location and character of the tissues. The pain produced is very slight and rarely lasts long. In pathological conditions liquid air relieves pain after a few applications and lessens discharge and odour; it diminishes tendency to hæmorrhage and encourages healthy granulation. It produces very little reactionary effect on scar tissue, hence it is of distinct diagnostic value in epithelioma. Dr. Whitehouse points out that extravagant claims were at first made for liquid air in the treatment of many disorders which may be more conveniently treated by simpler methods, including abscess, bubo, boils, carbuncles, ulcers, and warts. It is unnecessary, also, to resort to liquid air for the production of local anæsthesia. There are, however, many disorders in which better results may be obtained with liquid air than with other remedies, particularly in pigmentary, hairy, and vascular nævi, angiomata, lymphangioma circumscriptum, lupus erythematosus, lupus vulgaris, and epitheliomata. Dr. Whitehouse suggests that the secret of success with liquid air lies in the technique. The cotton swab is applicable to all conditions and with a little experience can be used with great precision. Pine sticks of sufficient length to reach the bottom of a Dewar bulb, and so shaped that the liquid may be applied in any quantity, are bound at the end with absorbent cotton to form a flat, round-pointed, or paddle-shaped pad. The excess of liquid should be shaken off and scabs should be completely removed from all lesions to be treated, a thin layer of gauze intervening between the applicator and all mucous or denuded surfaces, otherwise the scab will freeze fast. The factors governing the effect produced are the degree of saturation of the swab, the accuracy of contact, the amount of pressure exerted, and the duration of the exposure. The success of the treatment depends upon a thorough appreciation of these factors coupled with correct judgment respecting the interval allowed between exposures.

---

[1] Ophthalmology, January, 1907.

Dr. Whitehouse gives notes of 14 typical cases in which liquid air was variously applied, indicating the degree of pressure, the form of application, and other important points of the treatment. The use of liquid air is never likely to be very extensive in dermatology. Its action appears to be two-fold. It stimulates the part, producing a reaction, and it has an anæsthetising effect. It is possible, also, that it may have slight antiseptic power, but this is not great.

## "RHEUMATOID ARTHRITIS."

IN a leading article in THE LANCET of August 17th we discussed some of the principal points in the nature and treatment of rheumatoid arthritis which were raised in the discussion opened by Dr. A. P. Luff at the recent annual meeting of the British Medical Association. But little was said in reference to the dystrophic or neural theory of the origin of the disease, although some authorities still consider it to be the correct one. It may be remembered that some six years ago Dr. P. W. Latham contributed an article to our columns maintaining that the clinical symptoms in rheumatoid arthritis furnish undoubted evidence of pathological change in the nervous centres, and recorded the results of treatment directed specially to the nervous centres which had been followed by relief. He subsequently elaborated his views in a short monograph which he published in 1905. The treatment that he recommended was continuous counter-irritation over the section of the spine corresponding to the part involved. Other observers have adopted this method with success. In the *Medical Times and Hospital Gazette* Mr. W. J. Midelton, in writing on "Rheumatoid Arthritis and its Treatment by Counter-Irritation," mentions that he is an earnest advocate of the blistering treatment recommended by Dr. Latham and refers to other practitioners who have also employed it. That the suggestion is not new is proved by the reference made by Dr. Latham to a paper which appeared in the *American Journal of the Medical Sciences* in 1831 by Dr. J. K Mitchell, entitled "On a New Practice in Acute and Chronic Rheumatism"; the means chiefly employed were blisters, setons, and cupping to the region of the spine. Dr. Latham mainly recommends counter-irritation to the side of the cervical and lumbar enlargements of the spine in the earlier stages of the disease. When the disease is advanced, the ends of the bones are enlarged, and the cartilages are destroyed the normal condition cannot be restored by this method. Nevertheless, he thinks that in chronic cases where there are from time to time exacerbations of pain and swelling in some of the larger joints the application of leeches or cupping glasses, followed by the application of blisters to the spine, is of use. These therapeutic measures seem to be worthy of a more extensive trial than they have yet received, for few diseases are more rebellious to treatment than rheumatoid arthritis.

## ANTENATAL RIGOR MORTIS.

THE occurrence of antenatal rigor mortis is a matter of considerable interest, although it is probable that it occurs more frequently than would appear from the number of the recorded cases. The medical attendant immediately after the birth of the child usually is occupied with the mother and possibly the endeavours made to resuscitate a stillborn infant may overcome the rigidity which is present and these facts may lead to a failure to recognise this condition. Casper in his well-known text-book on forensic medicine stated that he had never seen an instance, but this rigidity has now been described by many competent observers and would no doubt be more often met with if it were more carefully looked for. In the *Zentralblatt für Gynäkologie* of August 17th Dr. Ulrich records a most interesting case in which antenatal rigor mortis occurred in one of twins. The mother, a primipara, was delivered spontaneously of twins, the first child being born dead and in a condition of rigor mortis. The skin was pale but there was no maceration and the fœtus preserved the normal attitude of general flexion. A further interesting point in this case was that the cord of the dead child split up on the membranes almost opposite the central point of the placenta, and from this insertion the vessels, some eight in number, spread out in a fan-like manner over the membranes. The second child was small but was born alive and lived. The labour lasted some 18 hours and unfortunately, as so often is the case, the exact time at which the child died could not be determined. It certainly appeared to be dead on the woman's admission to the hospital 12 hours before the confinement took place. The membranes had ruptured in one of the intervals between two of the ramifying vessels and no ante-partum hæmorrhage occurred. It is probable from the position of the umbilical vessels that there would have been injurious pressure on them during labour and had the child not been dead already that this would have such a result. There is no inherent reason why rigor mortis should not occur in utero and, as this case shows, it can occur in a healthy full-term child. As Ballantyne and Caruso, who have collected some 49 cases from the literature, have pointed out, the occurrence of rigor mortis is no proof of extra-uterine life and Dr. Ulrich's case shows that it is possible for a living child to be born and a dead child showing antenatal rigor mortis already well established, a combination which might well be considered as proof that the dead child had a separate extra-uterine existence.

THE Department of Public Health of Queensland in a bulletin dated July 20th states that for the week ending 12 o'clock noon on Saturday, July 20th, 1 case of plague was notified in Brisbane. The patient was a man, 18 years of age, notified on July 19th who died the same night. A further bulletin dated Saturday, July 27th, states that for the week ending on that date 1 case of plague occurred, the patient being a Kanaka, aged 21 years, who died suddenly on July 25th. A post-mortem examination proved that he had died from plague. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on August 31st states that for the week ending Thursday, August 29th, 1 case of plague was notified and no deaths from the disease.

THE second Norman Kerr memorial lecture, held under the direction of the Society for the Study of Inebriety, will be delivered by Dr. Robert Welsh Branthwaite, H.M. Inspector under the Inebriates Acts, on Tuesday, Oct. 8th, at 8.30 P.M., in the hall of the Royal Society of Medicine, 20, Hanover-square, London, W. The subject of the lecture will be Inebriety: its Causation and Control.

THE London County Council has issued an Order stating that Section 55 of the Public Health (London) Act, 1891, with respect to the notification of infectious disease, shall apply in the administrative County of London for a further period of 18 calendar months as from and including Sept. 13th, 1907, to the disease known as cerebro-spinal fever (epidemic cerebro-spinal meningitis).

---

A TIMELY RESCUE.—A lady visitor whilst bathing at Port Gaverne, Cornwall, was suddenly seized with faintness, and being unable to call for assistance tried to draw attention by waving her arms; she soon afterwards sank. Dr. Alfred Walker, who happened to be in the water, proceeded to the spot and succeeded in bringing the lady to the surface. She was unconscious when carried to the shore but eventually recovered.

# REPORTS OF THE ROYAL COMMISSION ON HUMAN AND ANIMAL TUBERCULOSIS.[1]

## I.

Dr. A. S. Griffith's report "On the Pathogenic Effects of Bovine Viruses" forms the first of five volumes which record in detail the work done by different members of the scientific staff of the Royal Commission on Tuberculosis at the farms and laboratories at Stanstead. Dr. Griffith had charge of the experimental work on bovine viruses which was carried out at the Walpole farm and kept strictly apart from that done on viruses of human origin at the neighbouring Royalcote farm. The main objects of the experiments described in the volume were (1) to provide a basis of comparison for the experiments with tubercle bacilli of human origin; (2) to ascertain whether the different viruses obtained by the Commission from naturally occurring bovine tuberculosis varied in virulence; and (3) to test the susceptibility of different species of animals to the bovine tubercle bacillus. The material employed was obtained from 30 different bovine animals. The cases were representative of the ordinary forms of natural tuberculosis met with in the ox and included cases of severe general tuberculosis, slight general tuberculosis, and tuberculosis limited to certain glands. Dr. Griffith's account of the experimental work is classified according as these bovine viruses were tested by inoculation or by feeding. The inoculation experiments are set out in the first portion of the volume, each virus having a chapter to itself, with its appropriate genealogical table showing the various animals which received doses of bacilli belonging to the virus in the course of the protracted series of experiments which were made in each case. Inoculations were made partly with emulsions of fresh tuberculous material and partly with cultures obtained either direct from the original material or from one of the animals (usually a guinea-pig) which had been inoculated with the virus. The culture medium was pure serum, usually ox serum.

*Estimation of the dose of tubercle bacilli administered.*—Approximate estimation of the bacilli in the infective material administered was, of course, essential to the work. The method of estimating the number of bacilli present in emulsions is described in detail by Dr. A. Eastwood in a preliminary chapter. The samples of emulsion were received in the laboratory in sealed test-tubes. A preliminary film is examined to see whether dilution with normal saline is desirable, a proceeding which in the case of tissue emulsions is rarely necessary. Five cubic millimetres are measured on to cover-slips by a Naharro's pipette. Each film is stained for at least 20 minutes and after staining is discoloured by 25 per cent. HCl. Counting by the method described takes from 40 minutes to two hours for each film. Dr. Eastwood has found it nearly always practicable to count the bacilli when these occur in clumps: groups containing from 50 to 70 bacilli have been common, but groups containing more than 100 have been very rare. In the case of cultures the emulsified bacilli are centrifugalised and their bulk is measured. A cubic millimetre of centrifugalised bacilli is reckoned as equivalent to a milligramme of tubercle bacilli. In the case of serum-grown bacilli a cubic millimetre, according to Dr. Eastwood, may be taken roughly as containing from 4000 to 5000 millions. The great majority of culture inoculations have been far richer in bacilli than inoculations with even the largest dose of tissue emulsions.

*Results obtained by inoculation of bovine viruses.*—The principal value of the large series of inoculation results obtained with each bovine virus consists in providing standards and contrasts with the results of corresponding series obtained from human viruses, which Dr. L. Cobbett describes in the second of the volumes now issued by the Commission. These contrasts have been fully brought out in the Commission's second report. Looking at the results of inoculation of bovine viruses by themselves it is seen that *cultures* (whether from the original material or from lesions in animals inoculated with the original material) produced in calves when given in 50 milligramme doses general tuberculosis of all the organs and glands of the body. This general tuberculosis is usually of a very acute type, and in the greater proportion of instances kills the animals within 50 days. Even five milligrammes of culture produced fatal general tuberculosis in a calf, although in one series of calves injected each with ten milligrammes, one case occurred in which inoculation produced only a "minimal" form of disease. The result of injections of *emulsions* of tuberculous lesions, in which the dose of tubercle bacilli was much smaller than when cultures were employed, was not dissimilar. Generalised disease was frequently produced in bovines so inoculated. Instances are noted in which, when a "minimal" lesion was produced in a calf by the injection of an emulsion, a virulent culture was afterwards obtained from this lesion. Injected into rabbits, cultures of the bovine bacillus produced general tuberculosis in doses of 0·1 milligramme; emulsions always produced general tuberculosis in whatever dose given. The contrast of these results with the effect of the human virus on the rabbit is a point on which the Commission laid special stress in their second report. Other animals—pigs, goats, and monkeys, readily acquired general tuberculosis by inoculation with the bovine virus. Rats, on the other hand, were highly refractory.

Dr. Griffith draws attention to instances where a virus taken direct from calcareous and retrogressive bovine lesions produced very much less effect than the same virus after it has been passed through the body of the guinea-pig, although in each case the number of bacilli inoculated has been the same.

*Immunity experiment.*—One of the calves inoculated with a tissue emulsion was made the subject of an immunity experiment. This animal made an apparently complete recovery after inoculation, at the age of 15 weeks, with an emulsion from the tuberculous prescapular gland of another calf, the dose being about 100,000 tubercle bacilli. The calf was reinoculated 159 days later with a large dose, 25 milligrammes, of culture from bovine material. After disturbances comparable to those produced by the inoculation of tuberculin into a tuberculous animal the calf again recovered. Subsequent inoculations of 50, 100, and 229 milligrammes of culture (enormous doses) at intervals of 215, 481, and 566 days after the primary inoculation respectively produced nothing more than a local swelling and transient illness.

*Excretion of bacilli in milk.*—A cow in which generalised tuberculosis was set up by inoculation of a large dose of culture was ascertained to excrete milk which caused tuberculosis in guinea-pigs, although the udder was normal to the naked eye. In this instance, however, Dr. Griffith concludes from the results that only a small number of tubercle bacilli were excreted with the milk, notwithstanding that the quantity of bacilli circulating in the blood stream must have been exceptionally large.

*Results obtained by feeding with bovine viruses.*—The feeding experiments made with bovine viruses described in the second part of the volume contain many points of interest. Dr. Griffith draws attention to various conditions which may influence the result of introducing tubercle bacilli in this way, particularly when the administration is effected by giving a single dose of infecting material. Among these are catarrh of the mucous membrane which, by hastening the expulsion of the intestinal contents, may result in the animal escaping infection; and structural differences in the alimentary canal of different species of animals. Bacilli can be very readily absorbed from the alimentary tract in pigs, for example, but much less readily in guinea-pigs. As a whole, the experiments bring out certain facts as to susceptibility of different species of animals which are confirmed by subcutaneous injection. The animals used in the investigation could be classified into three groups: (1) animals in which the bovine virus, however small the dose, almost invariably gives rise to general progressive tuberculosis—chimpanzee, baboon, rhesus monkey, lemur, rabbit, and guinea-pig; (2) animals in which general progressive tuberculosis can be set up but where its occurrence depends upon the dose of the infecting agent and the age of the animal—pig, goat, calf, cat, and dog—of these the young pig is the most susceptible and the adult dog the most resistant; (3) animals apparently insusceptible to tuberculosis by feeding—rats and fowls.

*The course of infection in feeding experiments.*—This is a matter of great importance in its bearing on human tuberculosis, and Dr. Griffith points out that tubercle bacilli often have been found to pass through the pharyngeal or intestinal mucous membrane into the nearest glands, leaving no trace of their passage. Furthermore, "it has been conclusively shown that tubercle bacilli which have been ingested may within a very short time find their way into the lungs, where they set up tuberculous lesions; pulmonary tuberculosis so induced may or may not be accompanied by lesions in the mucous membrane of the alimentary tract, or glands in connexion with it." The bronchial glands were found almost invariably to become affected *after* the lungs; in none of the experiments was there any evidence that the reverse had occurred. Different species of animals differ in regard to the anatomical lesions produced as a result of feeding with bovine tubercle bacilli. In the chimpanzee and various species of monkeys the mucous membrane of the alimentary tract is specially liable to infection and tuberculous ulceration; the tonsils, though not so liable to infection as the intestines, were frequently attacked, and in several instances entirely destroyed by caseation. The associated lymphatic glands in the case of either infection always become enlarged and caseous and frequently suppurate. In pigs, on the other hand, the intestinal mucous membrane often escapes infecfection; when local lesions appear they are usually few and inconspicuous. The tonsils and pharyngeal mucous membrane are more frequently affected than the intestines, and the glands in the neck are usually more extensively tuberculous than the glands of the mesentery. The bronchial and portal glands become tuberculous after the lungs and liver. In some pigs infection by feeding may be followed by a tuberculous pneumonia, but in at least one instance Dr. Griffith is disposed to attribute this to accidental inhalation of the infecting material at the time when the pig was fed. Calves are much less susceptible to infection by feeding than are pigs: dogs are specially resistant, and when tuberculosis has been occasioned by feeding in dogs the lesions have usually been found in the lungs without apparent disease of the alimentary tract or glands in connection with it.

---

[1] Volume I. of Appendices to the Second Report of the Commission: "On the Pathogenic Effects of Bovine Viruses," by Dr. A. Stanley Griffith. London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Cd. 3584. Price 9s. 3d.

## "LOATHSOME BED STUFFING."

NUMEROUS paragraphs have appeared in THE LANCET under the above heading and we continue to receive a number of letters from manufacturers of rag flock and others in which we are very generally commended for the attitude which we have taken in regard to this subject. That attitude is simply an expression of concern that an obviously insanitary and filthy proceeding in connexion with the manufacture of rag flock for bedding purposes should be allowed to exist in these days of high hygienic standards. It is hard to imagine anything more offensive than the filthy rags, the offal of clothes, the worn-out dust-laden carpets which form the raw material out of which flock mattresses and many upholstered goods are made, and without the slightest attempt to submit them to a process of scientific cleaning. We write "scientific cleaning" advisedly, for it must be obvious that such material may and does mostly contain pestiferous filth which no ordinary cleaning process can destroy. Such material should be absolutely sterilised in addition to washing before it should be allowed to fill the mattress or the cushion. It must be cleansed both macroscopically and microscopically. We enjoin such measures in the light of a full and practical knowledge recently gained on this subject.

A representative of THE LANCET has recently visited flock factories; he has seen for himself how offensive and disgusting this trade can be and at the same time how inoffensive it can be made, or how little exception can be taken to it on sanitary grounds, when the simple procedure of washing and sterilisation is adopted. Yet it is no exaggeration to say that the bulk of the flock made from cast-off clothing, old carpets, &c., receives no such cleansing treatment at all, it is merely worried into a flocculent material by the "devil." The fluffy substance after it leaves this powerful tearing up machine bears, of course, no sort of resemblance to the old coats, hats, dresses, carpets from which it is made and is more or less presentable to the eye when ocular examination is confined to the surface. Deeper inspection it will not bear; it is often loaded with dust and frequently has an offensive smell. Dormant as this filth may be in ordinary circumstances, it is unpleasant to think what a stimulus may be given to its disease-dealing potentialities when it is brought to the temperature of incubation and to a condition of moistness by the person who sleeps upon it. We have met not a few manufacturers who frankly acknowledge the evil, yet who are bound to confess that they are powerless to stop it because the demon of cheapness is deaf to sanitary considerations. The mattress that costs a shilling or so more because it has been thoroughly cleansed and sterilised is not regarded as better value for the money by an ignorant section of the public. If only disease entities were as obvious to the eye as, say, cockroaches, that view might be modified, and in this case a general agreement might possibly be arrived at that what was cheap was also decidedly nasty. The production of unwashed, unsterilised flock is thus thrust upon the flock manufacturer whether his views be clean and wholesome or not. He must meet a stupid, ignorant demand or lose a large part of his business.

But much to their credit there are manufacturers who detest this traffic and who, in spite of the risk of reducing the volume of their trade, have established at their factories cleanly methods and have gone so far as to provide for the complete sterilisation of the materials in an efficient steam sterilising apparatus prior to their conversion into flock in the "devil." They have gone further and have even placed the method under the control of a bacteriologist and have not been satisfied until the evidence was convincing that the material came through the process absolutely sterile as disclosed by bacteriological experiment.[1]

Of course such treatment adds to the cost of the material, but surely such a regard for sanitary considerations should be recognised and should never be allowed to be severely handicapped by the unchecked and unrestricted output of "wools" which are loathsome and filthy. Not long ago a question was put to the President of the Local Government Board in the House of Commons as to whether it was the intention of his department either by legislation or otherwise to prohibit the use of rag flock in the making of bedding without first subjecting it to some cleansing and disinfecting process. Mr. Burns replied that the compulsory cleansing of rag-flock could not be generally secured under the existing law. He was not in a position, he added, to promise legislation on the subject but "the point has been noted for consideration when a suitable opportunity offers."

It should be pointed out that the evil was well known to the Local Government Board more than 25 years ago. In the annual report of the medical officer of the Local Government Board, for 1885 appears a report by Dr. H. F. Parsons "On the Manufacture of Rag Flock in Reference to the Possible Dissemination of Infectious Disease by this and other Products of Woollen Rags." Dr. Parsons states that rags are imported into this country from almost every part of the world in which people are sufficiently civilised to wear clothing. There are large consignments from the continent, while other rags are collected in this country by "marine store dealers." A very dirty class of rags is collected from the dust hills on which the refuse of London and other large towns is tipped. Woollen rags, it appears, are also used as manure, especially for hops. Rags are sometimes met with, we learn from this report, which are soiled with blood or excrement, but Dr. Parsons "did not hear of poultices being observed or anything which would lead to the inference that the rags had been used by sick persons." In recapitulating the results of his inquiry Dr. Parsons states that the rags from which the inferior qualities of flock are made are commonly very dirty and do not, as a rule, undergo any process of purification beyond the removal of dust. He recommends the disinfection or purification of rags, adding that the best disinfectant for the purpose is heat in the form of superheated steam or hot, moist air.

It is true that the law forbids under penalty the selling, transmission, or exposure of infected articles, and that if infected rags pass into the market it is through a breach of the law on the part of the original vendor. The position that some manufacturers take, therefore, is that they are not responsible for any breach of the law which others may commit. It is pretty safe to assert that this attitude affords no security whatever to the public. The fact remains that material that may be no better than manure is being used for making bedding without any attempt being made to render it clean and wholesome by the scientific process of sterilisation by steam. There must be a number of filthy beds in the land and it is not improbable that this fact accounts for some mysterious outbreaks of disease.

---

[1] We may mention the names of two firms at least who have communicated with us and who adopt the sanitary measures indicated and we are prepared to publish the names of any others who employ similar hygienic methods. The Wandsworth Flock Company of Dunt's Hill Mills, Garratt-lane, Wandsworth, not only thoroughly wash the raw materials but afterwards place them in a well-known type of high-pressure steam steriliser. A well-known bacteriologist found that "the rags had been efficiently sterilised." Mr. T. R. Freeman, again, of Monkton Combe Mills, near Bath, has submitted to us samples of medium and cheap mattress wools "thoroughly washed and sterilised." "The rags are beaten by machinery specially adapted for the purpose," after which "the material is placed on stoves and dried at a germ-destroying temperature."

We repeat that these circumstances demand immediate legislation and the application of an obvious and simple remedy—a remedy which some manufacturers already apply on their own initiative, though seriously handicapped by the silly demand for the cheaper, because untreated, material. It is also desirable that the public should not be beguiled into buying cheap bedding which is falsely described as "sanitary" or "purified" when the material has undergone absolutely no such cleansing process as is implied by the above terms. This species of fraudulent trading should, of course, be dealt with under the Merchandise Marks Act, which exists to suppress false trade description.

## MEDICINE AND THE LAW.

### *The Case of a Trooper in the Yeomanry suffering from Chronic Urticaria.*

ON August 21st Mr. Horace Smith, sitting at the Westminster police court, dismissed a charge of an unusual character against a trooper serving in the Middlesex Imperial Yeomanry, but residing at Birmingham, based upon his absence from the annual training of his corps. The defendant had served in South Africa in Paget's Horse and since then had regularly attended the camps of his own corps, the Middlesex Yeomanry. This year he applied in April for leave to be absent from camp, which takes place in July, on the ground of business, but as he could not be excused without making a payment he prepared to attend. About the same time, finding that he was unwell he consulted his medical attendant and was treated for nettlerash. As it still gave him trouble when the time for the annual training approached he communicated with the Yeomanry authorities, and in consequence of a correspondence in which it was insisted that he ought to proceed to London and be examined by Mr. C. Stonham, the surgeon of his corps, he forwarded three certificates to the effect that he was suffering from urticaria and that he was not fit to go into camp. Apparently the fact that no mention of the chronic nature of the complaint was made, coupled no doubt with some want of explicitness in the information supplied as to his condition, caused the officers of the Middlesex Yeomanry, anxious to maintain their numbers in camp and to prevent what is known to military men as "skrimshanking," to regard the certificates sent with scant respect. The trooper was arrested and brought to London as a deserter, and after adjournments his medical witnesses were compelled to attend the court in support of their certificates. The evidence thus given was that Mr. Walter Flewitt, the usual medical attendant of the defendant, Lieutenant-Colonel S. E. Duncan, R.A.M.C., medical officer in charge of troops at Birmingham, and Mr. Edwin Gilbert Smith, senior surgeon to the Birmingham Hospital for Diseases of the Skin, had all personally examined the patient at the time when their certificates were given and had formed the opinion that he was not fit to go into camp where he would have to undergo a certain amount of exposure and hard work and where special treatment would be impossible. In the circumstances the charge was, as a matter of course, dismissed, and it seems a matter of regret that it should have been brought. Still the point is not quite as simple as it seems. Urticaria, as a rule, is little more than a temporary inconvenience; it gives rise to annoyance and discomfort for a few days or even a week or two, but with the elimination of the toxins which have produced it the whole trouble ceases. There is, however, a chronic form in which the irritation is very persistent and this may materially interfere with the work of the patient. Especially is this the case when the local vaso-motor centres are in that unstable condition to which the name of "dermographism" is given and this is what was indicated by one of the medical witnesses who said that the patient was suffering from "urticaria factitia." In this condition pressure on the skin may immediately produce a wheal. We can quite understand that this condition would materially interfere with active work in the Yeomanry. We do not know the exact form of the certificates given, but in all cases where a medical certificate is intended to state that a person is unable to perform his duties the certificate should be as explicit as possible, so that the condition of the patient should be clear to any other medical man.

### *Medical Men and County Court Procedure.*

Some attention has been aroused on the county court circuit presided over by Judge Mulligan, K.C., owing to the attitude adopted by his honour towards a form of procedure which was sanctioned by his predecessor, Judge Willis, and which, though not universal, obtains elsewhere as well. Judge Mulligan will not allow debt collectors to appear before him to prove the debts owing to their clients. This is a matter which affects medical men generally because they are often obliged either to sue for fees or to lose them, while they have little time to appear as witnesses or to conduct their own cases in court. More particularly it also affects them because Judge Mulligan, in disposing of certain cases at a recent sitting held by him at March, Cambridgeshire, made special reference to those in which medical fees were sought to be recovered, to the effect that "professional gentlemen ought to know better than to employ the clerk of a firm of accountants to represent them in a court of justice." These observations we regret; they were passed upon gentlemen who were not present to explain their position, and who probably had never regarded the question from the point of view suggested, but had merely adopted a practice which had been recognised and universally pursued before the recent appointment of Mr. Mulligan, K.C., to his present post. The practice referred to appears to be as follows. In order to establish a claim against a defendant in a county court when it is disputed a solicitor is, or may be, employed who in turn may brief a barrister, and witnesses are brought to the court who can prove the facts by going into the witness-box and giving evidence. There are many debts, however, which are not disputed by those who owe them but in order to recover which the judgment of the county-court judge is applied for. Some of these debts may be very small, a matter of one, or two, or three pounds, a great deal less than the fee of the advocate and the cost of the witnesses. When the sum recovered is so small little or nothing is allowed for "costs." Even if the plaintiff is his own advocate, and if his evidence is all that is required, he loses time and has to undergo a good deal which is not agreeable. It has consequently been found of advantage to employ a debt collector who charges a fee fixed in proportion to the amount recovered and who proceeds in this way. He takes an assignment of the debt from the creditor and gives notice thereof to the debtor, thus enabling himself to sue as if he were the original creditor. He also approaches the debtor with a view of obtaining payment and in doing so gets from him an admission that he owes the debt. Thus armed he initiates county-court proceedings and goes to the court to prove the debt by means of the admission or, as in the case referred to above, sends one of his staff to represent the firm. In dealing with a large number of cases at March in which this course had been adopted Judge Mulligan did what he has done at other places on his circuit with a view to stopping a practice of which he disapproves. He carefully scrutinised the details of each case, insisted upon the proof that the necessary notices had been given and that the documents were in order, and in the case of those purporting to be assignments of the debts in question he ruled that they were not properly stamped. By the end of the day he had struck out a large number of claims of this kind and in the course of some concluding observations he used the words which have been quoted above. His reference to medical men as professional men who should have acted otherwise was no doubt not merited because, as we have suggested, the practice which the learned county-court judge seeks to do away with had been long recognised before he was raised to the county-court bench and is, we believe, permitted to a greater or less extent in other courts. It also has the merit of simplifying and of rendering inexpensive the recovery of just debts. His point, however, is worthy of consideration. He invited, though in undesirable terms, the attention of medical men to the position of lawyers, who have to earn their livings by their profession, and who, like medical men, feel it to be a hardship that persons not qualified to practise a profession should do so, or should do what is equivalent to it. The procedure which has been described must to an appreciable extent interfere with the emoluments of solicitors by introducing lay advocates where, strictly speaking, only solicitors or barristers are entitled to be heard on behalf of others, and, no doubt, abuses are possible under it. Medical men naturally and strongly resent the practising of medicine by unqualified persons, and reference to the columns of THE LANCET will show the position maintained in it, for example, with regard to druggists who prescribe and to opticians who go beyond the limits of their trade. In these circumstances medical men should sympathise and be in accord with those members of the legal profession who desire to see their professional privileges protected, even though medical men may form a small percentage of the mass of small creditors who avail themselves of the services of the debt collector. The debt collector's method as described must be, to some extent or in some instances, an evasion of the law, and, apart from questions of the stamping of documents, a doubt probably remains in each case whether the assignment is a genuine one. What all would desire to see, however, is such uniformity of practice in the courts as would render the application of the law certain and precise.

### *The Sale of Poisons.*

The firm which trades as Boots, Cash Chemists (Southern), Limited, was summoned at the West London police court recently at the instance of the Pharmaceutical Society and fined £5 with 23*s.* costs for selling strychnine without observing the prescribed formalities. The circumstances were of a peculiar nature and the prosecution was due to the tragic sequel traceable indirectly to the defendants' conduct. A customer purchased, and was allowed to take, without having his attention called to the matter by the observance of any precautions, a bottle of Easton's syrup in tabloid form. At a later date his little son, aged 16 months, while playing got hold of the bottle, broke it, and swallowed about 17 of the tabloids, with the result that he died in half an hour. Various excuses were put forward on behalf of the defendant firm, including the statement that it was a common practice in the trade to sell such tabloids without obtaining the customer's signature in the book kept for the purpose, which, as was suggested by the prosecution, might have had some effect in preventing him in the case in question from leaving the bottle about. On behalf of the Pharmaceutical Society it was denied that such laxity was customary. The magistrate, in imposing the maximum penalty, expressed his concurrence with the view that the observance of the proper formalities was likely to impress upon a purchaser the dangerous nature of the article bought, and was of the opinion that the contravention of the Act was a grave one. The case is one worthy of careful consideration by traders of the class of the defendants.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Sept. 5th, 1829.

### RUPTURE OF THE LIVER, AND OF THE EXTERNAL ILIAC VEIN, WITH LACERATED WOUND OF THE THIGH.

Thomas Wight, a stout muscular man, rather below the middle stature, was admitted into Jacob's Ward,[1] between four and five o'clock, on the afternoon of Wednesday, August the 19th, with a deep lacerated wound of the right thigh. It was stated by the friends of the patient, that he had accidentally fallen from a scaffold, in Leadenhall Market, on which he was standing at the time, in the act of painting a sky-light, and in falling had come in contact with one of the hooks in front of a butcher's stall, which penetrated the back part of his thigh, and suspended him for nearly two minutes, when the hook broke, and he fell to the ground; the distance from whence he fell to the hook was said to be ten feet, and from thence to the ground six or seven more. At the time of his admission he was exceedingly pale, and the pulse at the wrist was scarcely perceptible; he appeared, however, perfectly sensible and aware of his approaching dissolution, intimating his conviction, that he should not long survive the accident. Having immediately been placed in bed, some brandy and rum (about half an ounce of each) were administered to him, which he appeared to have some difficulty in swallowing. He did not complain of any thing further than a pain across the epigastric region. He had not been long in bed when he became restless, turned several times from side to side, and almost instantly expired.

*Autopsy twenty hours after death.*

The abdomen being first examined, there was found contained in its cavity a large quantity (probably about two quarts) of dark-coloured blood, in a fluid state; this being removed, on tracing the different large veins, the right external iliac was found nearly torn through, about its middle. There was a longitudinal rupture of the liver, situated on the right lobe, and extending in a line from the right extremity of the sulcus transversus to the margo obtusis; and on examining the thorax, all the cavities of the heart were found to be quite empty. It may be proper to observe, that there was no external mark of injury perceptible on the abdomen. On the thigh was a lacerated wound of the integuments, about four inches long, situated at the upper and posterior part below, and extending to the inner side of the great trochanter. On continuing the examination, it was found that the hook, having entered at this part, had passed to the inner side of the great sciatic nerve, pierced the adductor magnus muscle, and on to the fore-part of the thigh to the inner side of the femoral vessels, not having penetrated the integument at the fore-part.

We have since visited the place, and find, from eye witnesses of the accident, that the statement of the persons, who brought him to the hospital, was not perfectly correct. He was standing on a ladder, and leaning forward to reach his pot, when the ladder turned over, and precipitated him on one of the hooks, (which are full a foot in length,) on which he remained suspended a considerable time, the bystanders being so shocked that they were incapable, at first, of rendering him any assistance; but in one or two minutes he was lifted off, (the hook not having broken, as asserted by the friends,) and immediately taken to the hospital. The distance from the beam to the window measures about six feet, so that the poor fellow could not have been standing more than two feet above the hook.

---

[1] St. Thomas's Hospital.

# VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8444 births and 3542 deaths were registered during the week ending August 24th. The annual rate of mortality, which had been equal to 11·8 per 1000 in each of the two preceding weeks, declined in the week under notice to 11·5 per 1000. During the first eight weeks of the current quarter the death-rate has averaged 12·0 per 1000, the rate in London during the same period being 11·9. The lowest death-rates in the 76 towns during the week were 5·2 in Willesden, 5·4 in East Ham, 5·6 in Leyton, and 5·7 in Southampton; the highest rates were 15·6 in Warrington and in South Shields, 15·8 in Oldham, 16·6 in Burton-on-Trent, 18·8 in Wallasey, and 21·7 in Great Yarmouth. The 3542 deaths in the 76 towns during the week mentioned showed a decline of 83 from the number in the preceding week, and included 433 which were referred to the principal epidemic diseases, against 362, 378, and 407 in the three preceding weeks; of these, 166 resulted from diarrhœa, 99 from whooping-cough, 84 from measles, 37 from diphtheria, 30 from scarlet fever, and 17 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered during the week in Blackburn, Brighton, Southampton, Hornsey, Reading, Newport (Mon.), Bournemouth, West Bromwich, or Barrow-in-Furness; the annual death-rates from these diseases, however, ranged upwards to 3·0 in Great Yarmouth, 3·2 in Handsworth (Staffs), 3·3 in Sheffield, 3·8 in Aston Manor, 3·9 in Bootle, and 6·1 in Cardiff. The fatal cases of diarrhœa, which had increased from 39 to 130 in the six preceding weeks, further rose to 166 in the week under notice; the mortality from this cause ranged upwards to 1·3 per 1000 in Birkenhead, in Liverpool, and in Sunderland, 2·3 in Bootle, 2·6 in Sheffield, and 3·1 in Aston Manor. The deaths from whooping-cough, which had been 85 and 92 in the two previous weeks, increased during the week to 99, the death-rate from this disease being 1·2 in Wigan and in Gateshead, 1·4 in South Shields. 1·5 in Grimsby, 1·8 in Bury, and 3·0 in Great Yarmouth. The fatal cases of measles declined during the week to 84, having been 94 and 102 in the two preceding weeks; this disease was most fatal in Cardiff, where 20 deaths, equal to a rate ot 5·6 per 1000, were registered. Scarlet fever caused a death-rate of 1·0 in Wolverhampton; but the mortality from diphtheria or from "fever" was not excessive in any of the large towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had increased from 2658 to 3669 in the 15 preceding weeks, had further risen to 3687 at the end of the week; 440 new cases were admitted during the week, against 419, 466, and 430 in the three preceding weeks. One case of small-pox was admitted and remained under treatment at the end of the week. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 139 and 129 in the two previous weeks, further declined to 97 in the week under notice, and were 20 below the corrected average number in the corresponding period of the five years 1902–06. The causes of 38, or 1·1 per cent., of the deaths in the 76 towns during the week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 50 other of the 76 towns; the highest proportions of uncertified deaths were registered in Liverpool, Manchester, Birmingham, Sheffield, Gateshead, and Reading.

In 76 of the largest English towns 8455 births and 3617 deaths were registered during the week ending August 31st. The annual rate of mortality, which had been equal to 11·8 and 11·5 per 1000 in the two preceding weeks, rose again to 11·8 in the week under notice. During the past nine weeks of the current quarter the death-rate in these towns has averaged 12·0 per 1000, the rate in London during the same period being 11·9. The lowest death-rates in the 76 towns last week were 2·0 in Burton-on-Trent, 2·1 in King's Norton, 5·2 in Hornsey, and 5·9 in Tottenham and in Devonport; the highest rates were 17·8 in Hastings, 17·9 in Walsall, 18·7 in Sunderland, and 22·9 in Tynemouth. The 3617 deaths in the 76 towns were 74 in excess of the number in the previous week, and included 437 which were referred to the principal epidemic diseases, against 378, 407, and 432 in the three preceding weeks; of these, 194 resulted from diarrhœa, 76 from whooping-cough, 73 from measles, 36 from diphtheria, 35 from scarlet fever, and 23 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic disease was registered last week in Croydon, Brighton, Plymouth, Southampton, or in ten other of the 76 towns; the annual death-rate from these diseases, however, ranged upwards to 3·1 in Bootle, 3·4 in St. Helens. 3·7 in Sheffield, 3·8 in Tynemouth, 4·3 in Walsall, and 4·7 in Cardiff. The deaths from diarrhœa, which had risen uninterruptedly in the seven preceding weeks from 39 to 165, further increased to 194 last week; the highest death-rates from this disease were 2·2 in Walsall, 2·3 in St. Helens, 2·9 in Sheffield, 3·0 in West Bromwich, and 3·1 in Bootle. The fatal cases of whooping-cough, which had been 85, 92, and 99 in the three previous weeks, declined again to 76 in the week under notice, the death-rates from this disease ranging upwards to 1·1 in St. Helens and 1·5 in Stockport. The deaths from measles, which had been 102 and 84 in the two preceding weeks, further fell to 73 last week and caused a death-rate of 1·3 in Coventry, 1·4 in Merthyr Tydfil, 2·1 in Ipswich, and 3·9 in Cardiff. The 36 fatal cases of diphtheria were slightly fewer than the numbers in other recent weeks, the greatest proportional mortality being 1·3 in Reading and 1·9 in Tynemouth. The deaths from "fever," which had been 22 and 17 in the two previous weeks, rose again to 23 last week; the highest death-rate from this cause was 1·2 in Wigan. Scarlet fever was not excessively fatal in any of the 76 towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals and the London Fever Hospital, which had increased from 2658 to 3687 in the 16 preceding weeks, had further risen to 3737 at the end of last week; 557 new cases were admitted during the week, against 466, 430, and 440 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 139, 129, and 97 in the three preceding weeks, rose again to 129 in the week under notice, and slightly exceeded the corrected average number for the corresponding period of the five years 1902–06. The causes of 31, or 0·9 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, and in 56 other of the 76 towns; there were seven uncertified deaths in Liverpool, three in London, three in Huddersfield, and two each in Manchester, Birmingham, Nottingham, South Shields, and Handsworth (Staffs.).

---

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·8 and 12·6 per 1000 in the two preceding weeks, rose again to 12·8 per 1000 in the week ending August 24th, and was 1·3 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·7 in Leith and 10·1 in Edinburgh, to 14·0 in Glasgow and 15·0 in Perth. The 443 deaths in these towns showed an increase of seven over the number in the previous week, and included 65 which were referred to the principal epidemic diseases, against 75 and 52 in the two preceding weeks. These 65 deaths were equal to an annual rate of 1·9 per 1000, which exceeded by 0·5 per 1000 the mean rate during the same period from the principal epidemic diseases in the 76 large English towns; they included 22 which were referred to whooping-cough, 21 to diarrhœa, eight to diphtheria, seven to "fever," five to measles, two to scarlet fever, and not any to small-pox. The deaths from whooping-cough, which had been 30 and 18 in the two previous weeks, rose again in the week under notice to 22, of which 11 occurred in Glasgow, four in Edinburgh, three in Greenock, and two in Paisley. The fatal cases of diarrhœa, which had been 21, 22, and 15 in the three preceding weeks, increased again to 21 in the week ending August 24th, and included twelve in Glasgow, three in Dundee, and two in Paisley. The deaths from diphtheria, which had been four, two, and one in the three preceding weeks, rose again during the week to eight, of which four were registered in Glasgow and three in Dundee. The fatal cases of "fever," which had been 13 in each of the two previous weeks, declined to seven in the week under notice, and included five in Glasgow, and one in Edinburgh; of these deaths three in Glasgow and the one in Edinburgh were from cerebro-spinal meningitis. The fatal cases of measles, which had been six, six, and four in the three preceding weeks, were five in the week mentioned, and included three in Glasgow and two in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 68, 55, and 48 in the three preceding weeks, rose again to 53 in the week under notice, and slightly exceeded the number in the corresponding period of last year. The causes of 14, or 3·2 per cent., of the deaths in the eight towns during the week were not certified; in the 76 English towns the proportion of uncertified deaths did not exceed 1·1 per cent.

The annual rate of mortality in eight of the principal Scotch towns, which had been 12·6 and 12·8 per 1000 in the two preceding weeks, further rose to 13·7 per 1000 in the week ending August 31st, and was 1·9 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·5 in Aberdeen and 12·8 in Glasgow to 16·1 in Greenock and 16·7 in Dundee. The 475 deaths in these towns exceeded by 32 the number in the previous week, and included 62 which were referred to the principal epidemic diseases, against 52 and 65 in the two preceding weeks. These 62 deaths were equal to an annual rate of 1·8 per 1000, which was 0·4 per 1000 above the mean rate last week from the principal epidemic diseases in the 76 large English towns; they included 19 which were referred to whooping-cough, 19 to "fever," 15 to diarrhœa, seven to diphtheria, one to measles, and one to scarlet fever, but not any to small-pox. The deaths from whooping-cough, which had been 18 and 22 in the two previous weeks, declined again to 19 in the week under notice, and included seven in Glasgow, five in Edinburgh, and five in Paisley. The fatal cases of "fever," which had been 13, 13, and seven in the three preceding weeks, rose again last week to 19, of which 12 occurred in Glasgow, three in Dundee, and one each in Aberdeen, Paisley, Leith, and Greenock; these 19 deaths included ten from cerebro-spinal meningitis in Glasgow, two in Dundee, and one each in Aberdeen and Paisley. The deaths from diarrhœa, which had been 15 and 21 in the two preceding weeks, declined again to 15 last week, and included seven in Glasgow, three in Dundee, three in Leith, and two in Aberdeen. Of the seven fatal cases of diphtheria five occurred in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 48 and 53 in the two preceding weeks, declined to 51 in the week under notice, and were ten below the number in the corresponding period of last year. The causes of 18, or 3·8 per cent., of the deaths in these eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 15·7 and 17·8 per 1000 in the two preceding weeks, declined again to 15·7 per 1000 in the week ending August 24th. During the first eight weeks of the current quarter the death-rate has averaged 18·7 per 1000, the rate during the same period being 11·9 both in London and in Edinburgh. The 118 deaths of Dublin residents registered during the week under notice were 15 fewer than the number in the preceding week, and included 14 which were referred to the principal epidemic diseases, against 13 and 17 in the two preceding weeks; of these, four resulted from whooping-cough, four from diarrhœa, two from measles, two from diphtheria, and two from "fever," but not any from small-pox or from scarlet fever. These 14 deaths were equal to an annual rate of 1·9 per 1000; the death-rate for the week from the principal epidemic diseases being 1·4 in London and 1·2 in Edinburgh. The fatal cases of whooping-cough, which had been one and three in the two preceding weeks, further rose during the week to four; the deaths from diarrhœa numbered four, against three, five, and six in the three preceding weeks; while the fatal cases of measles, which had been six, five, and seven in the three preceding weeks, declined to two in the week under notice. The 118 deaths from all causes in Dublin during the week included 33 of children under one year of age and 26 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were slightly fewer than those in the preceding week. Four inquest cases and three deaths from violence were registered during the week; and 45, or 38·1 per cent., of the deaths occurred in public institutions. The cause of one death was not certified, the number of uncertified deaths being two both in London and in Edinburgh. The 107 deaths in Belfast included five from cerebro-spinal fever or cerebro-spinal meningitis.

The annual rate of mortality in Dublin, which had been equal to 17·8 and 15·7 per 1000 in the two preceding weeks, rose again to 18·6 per 1000 in the week ending August 31st. During the first nine weeks of the current quarter the death-rate has averaged 18·6 per 1000, the rates during the same period being 11·9 in London and 12·2 in Edinburgh. The 139 deaths of Dublin residents registered during the week under notice were 21 in excess of the number in the preceding week, and included 17 which were referred to the principal epidemic diseases, against 17 and 14 in the two previous weeks; of these, eight resulted from diarrhœa, seven from measles, and two from "fever," but not any from small-pox, from scarlet fever, from diphtheria, or from whooping-cough. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rate last week from the principal epidemic diseases being 1·4 in London and 0·9 in Edinburgh. The fatal cases of diarrhœa, which had been five, six, and four in the three preceding weeks, rose again last week to eight; the deaths from measles, which had been five, seven, and two in the three preceding weeks, increased again to seven in the week under notice; while the two deaths from "fever" corresponded with the number in the previous week. The 139 deaths from all causes in Dublin last week included 24 of children under one year of age and 31 of persons aged upwards of 60 years; the deaths of infants showed a considerable decline, while those of elderly persons were in excess of the numbers in recent weeks. Eight inquest cases and six deaths from violence were registered; and 50, or 36 per cent., of the deaths occurred in public institutions. The causes of three, or 2·2 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths in London did not exceed 0·3, while in Edinburgh it was 2·9. The 90 deaths in Belfast included seven which were referred to cerebro-spinal fever or to cerebro-spinal meningitis.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: W. J. Colborne to the *Euryalus;* and D'Arcy Harvey to the *Argonaut*, on recommissioning. Staff Surgeons: E. O. B. Carbery to the *Sappho:* H. L. Norris to the *Arrogant;* T. D. Halahan to the *Isis*, on recommissioning; and J. C. G. Reed to the *Charybdis*, on recommissioning. Surgeons: A. la T. Darley to the *Bulwark;* W. N. Horsfall to the *Euryalus*; and C. J. Boucher to the *Argonaut*, on recommissioning.

Deputy Inspector-General T. D. Gimlette, C.B., has been promoted to the rank of Inspector-General, with seniority of July 1st. Fleet Surgeon J. J. Dennis has been promoted to the rank of Deputy Inspector-General, with seniority of July 1st. Fleet Surgeon J. W. O. Underhill has been placed on the Retired List at his own request.

### ROYAL ARMY MEDICAL CORPS.

Major Ernest C. Freeman and Major Alfred Wright retire on retired pay. Major C. E. P. Fowler, assistant professor of hygiene at the Royal Army Medical College, has been appointed to inquire into the excessive prevalence of malarial fevers in Mauritius. Lieutenant-Colonel T. Daly has embarked for Karachi. Captain W. A. Ward has been appointed specialist in dermatology in the London district. Lieutenant-Colonel J. R. Forrest has been appointed Sanitary Officer, 3rd (Lahore) Division, as a temporary measure. Captain A. H. Safford has been posted to the Cambridge Hospital for duty.

Lieutenant Geoffrey Carlisle resigns his commission (dated Sept. 4th, 1907).

The undermentioned Majors retire on retired pay (dated August 28th, 1907):—Ernest C. Freeman and Alfred Wright.

### INDIAN MEDICAL SERVICE.

Major W. H. Ogilvie, I.M.S., Major L. P. More, R.A.M.C., Lieutenant-Colonel M. A. Ker, I.M.S., Captain J. F. Martin, R.A.M.C., Major F. W. Gee, I.M.S., and Major A. E. Milner, R.A.M.C., have been appointed staff officers for medical mobilisation stores.

In consequence of the abolition of the commands in India the Principal Medical Officer, His Majesty's Forces in India, will in future nominate officers to command station hospitals at certain hill stations, and also at the headquarters of divisions and brigades.

Colonel P. H. Benson, I.M.S., has been appointed Principal Medical Officer, Secunderabad Brigade.

### VOLUNTEER CORPS.

*Rifle:* 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry): Surgeon-Captain S. L. Potter resigns his commission (dated July 23rd, 1907). 3rd (The Blythswood) Volunteer Battalion the Highland Light Infantry: Surgeon-Major (Honorary Captain in the Army) R. Pollok is borne as supernumerary whilst holding the appointment of Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Highland Light Infantry Volunteer Infantry Brigade (dated July 12th, 1907).

The Volunteer Officers' Decoration has been conferred upon Surgeon-Major Charles Alexander MacMunn, 3rd Volunteer Battalion the South Staffordshire Regiment, and on Surgeon-Major George Hollier, 2nd Volunteer Battalion the King's (Shropshire Light Infantry).

### ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

*London District:* London Companies: George Langrigg Leathes Lawson to be Lieutenant (dated June 1st, 1907). *Scottish Command:* Edinburgh Company: Lieutenant H. Wade to be Captain (dated August 6th, 1907).

The Volunteer Officers' Decoration has been conferred on Captain David Smart, Liverpool Bearer Company.

IMPERIAL YEOMANRY

The King's Own Royal Regiment Norfolk: Surgeon-Captain J. F. Gordon Dill to be Surgeon-Major (dated July 14th, 1907).

Surgeon-General Sir Alfred Henry Keogh, K.C.B., Director-General, Army Medical Service, has been appointed a honorary physician to the King, vice Surgeon-General A. F. Preston. Sir Alfred Keogh entered the service as a surgeon in March, 1880, and was appointed Director-General in 1904. He is a Knight of Grace of the Order of St. John of Jerusalem.

# Correspondence.

"Audi alteram partem."

## AN INTERNATIONAL SOCIETY OF UROLOGY.

*To the Editors of* THE LANCET.

SIRS,—We are informed by the Representative Committee of the French Association of Urology that it is intended to form an International Society of Urology upon the same lines as the International Society of Surgery and to hold the first congress in the autumn of 1908 in Paris. With this object a preliminary meeting will be held at the Necker Hospital in Paris on Oct. 8th prox., for the purpose of making the necessary arrangements, at which various Eastern and Western nations will be represented. We are requested by our French colleagues to forward to you this information.

We are, Sirs, yours faithfully,
REGINALD HARRISON,
JOHN PARDOE.

London, August, 1907.

*_* The members of the Representative Committee are the following:—For Paris: Professor Guyon (president), Professor Achard, and Professor Albarran. For Lille: Professor Carlier and Professor Chauffard. For Bordeaux: Professor Pousson. The secretary is Professor Desnos of Paris.—ED. L.

## INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

*To the Editors of* THE LANCET.

SIRS,—With reference to the remarks of Dr. Sidney C. Lawrence in your issue of August 17th, p. 478, concerning the part played by Sunday schools (and may I add Band of Hope classes and the like) in the spread of infectious disease, I should like to say that the question was dealt with somewhat fully in my paper on the Gloucestershire experiment of 1904 which appeared as an addendum to Section II. Owing, however, to the very limited time allowed I was able to read but a brief abstract, and this point, with many others, was perforce omitted. I found little difficulty in applying to Sunday schools, &c., such measures of isolation as were considered essential in the day school; nor is this surprising when it is recalled that often enough the head teacher or one of his assistants functions as the Sunday school superintendent.

I am, Sirs, yours faithfully,
MYER COPLANS.

August 19th, 1907.

## SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.

*To the Editors of* THE LANCET.

SIRS,—In answer to Dr. S. Sloan's letter in your issue of August 24th (p. 555) I am inclined to conclude from its tone that it was not criticism he desired but approbation. In your issue of June 29th (p. 1805) I clearly defined the nature and scope which my criticism was to take by stating "that it was more the physical than the physiological aspects of his article that I desired to comment on, it being self-evident that the trustworthiness of the latter was dependent upon the accuracy of the former." Dr. Sloan, when replying to this, ought then to have taken exception to the form which I intended my criticism to take, and not have waited until he found that it was not favourable to his particular conclusions. Consequently, in order to prove that his conclusions were inaccurate, it was only necessary for me to demonstrate, and this I claim to have done, the self-contradictory nature of his data, and to show that he had placed a wrong interpretation on the phenomena observed by him while experimenting. Dr. Sloan cannot take more out of a thing than he puts into it, hence it is impossible for him to get 40,000 watts out of his apparatus when it only takes 1250 watts (average). The average output of current from the secondary circuit is only 16 milliampères and not 500 milliampères, as he states. This does not take into consideration the loss which occurs by transforming, as well as by the high tension of the current and the "open circuit." These, together with what I have formerly stated, are quite sufficient reasons (without entering into the question of how these factors can be otherwise verified) for maintaining that little or no current was being passed through the body. With reference to the spinthermeter experiments, the explanation given by me regarding them is sufficiently clear to enable anyone acquainted with the subject to put the matter to a practical test and prove that resistance does not cause a drop in potential or annul voltage.

If Dr. Sloan desires to put the spinthermeter experiments to a further test in another direction I shall be pleased to send him a specially constructed vacuum tube of my own used for the production of ultra-violet rays. The tube is constructed to withstand in ordinary working a sustained current of one ampère at 100 volts (100 watts) for 20 minutes at a time at a periodicity of 360,000,000 per minute. The tube when it is working under the above conditions can be handled with perfect safety. If this tube be placed in circuit with an apparatus which has a potential of 30,000 volts and with a current of 250 milliampères and the same periodicity it can, with certain precautions, be handled with safety. Upon first consideration one would be inclined to think that it caused a fall in potential in the circuit, but this is not the case and it admits of explanation. To suit his argument Dr. Sloan first ignores, and then in turn claims in aid, the factors upon which he based his experiments, for in his letter of July 13th (p. 111) he states that I must have observed that he had not dealt in his paper with the effects of high-frequency currents according to either their quantity, quality, or voltage, but simply as high-frequency currents. Finding it impossible to reconcile the discrepancies in his data he asserts that it is merely a matter of theoretical consideration which does not admit of practical solution and states that we know what they are and can think intelligently of them. Later, however, he states that no one knows exactly what they mean.

I am asked why, if a true estimate of the physiological effects of high-frequency currents is to be obtained, I use the term "wattage." The reason is that wattage multiplied into time equals the energy which the body is subjected to or has to contend with when it is being treated or experimented upon. The changes brought about in the body, as he must know, are due to the former, based (as it should be) on definite data without which it is impossible to accurately estimate these changes, the physiological effects produced being in direct ratio to the energy used. (The idiosyncrasy of the patient naturally has to be considered.) To do this work current is used; hence the reason why the "wattage" should be computed upon an ampèrage which is based upon current. As I have previously stated, in order to set the matter at rest, let the body be subjected for, say, 20 minutes to 300 watts, the wattage being made up as follows: 60,000 volts at five milliampères; and secondly, 100 volts at three ampères; and then let a comparison be made of the records. If this be done I venture to state that it will lead to a restatement of much that has been written regarding the physiological effects of high-frequency currents upon the body.

Dr. Sloan has no reason for assuming that it was my intention to draw him into an unnecessary discussion or that I had been guilty of diverting your readers' attention from the main issue. He invokes authority to uphold his position. I would rather be an iconoclast than sit at the feet of idols. However, if he persists in invoking the aid of authorities to uphold his theories let him definitely state the physical data upon which these authorities have based their experiments. When he states that the time has passed for anyone to say what is the wattage that can be safely applied to the body, upon what authority does he rely? Then he goes on to assert that he would not like to be the "victim" of the experiment of having 400 watts applied to his body, while on his own showing he subjected his patients to 40,000 watts. Regarding the other points in Dr. Sloan's letter it is unnecessary for me to restate what I have already explained. However, there is one point I wish to touch upon. He stated that I answered one of the questions at the *end* of his paper. What I actually did was to deal, not with a question at the close, but with a query in the body of his paper. In the experiments he is carrying out to determine the difference in the physiological effects of currents by varying the frequencies he will no doubt see the necessity for definite data, and let me assure him he can claim no priority in the idea.

I shall be pleased to demonstrate to Dr. Sloan that five ampères at 100 volts can be passed through, or "in and out" of, the body, and I can promise him that the "victims" of the experiment will be none the worse. I can give him this assurance with the greatest confidence because I have already done it with perfect safety. Further, I shall be pleased to place every means at his disposal to test the accuracy of the experiment and, if necessary, to supply him with the "victims." I have noted what Dr. Sloan has deemed to be the necessary qualification before one can become a member of his scientific investigatory committee. Whether or not I possess this qualification it is not for me to say. The object of my criticism will have been served if attention has been directed to the danger of drawing hasty conclusions from high-frequency currents experiments, based upon data which cannot bear the test of scientific investigation.

I am, Sirs, yours faithfully,

Cardiff, August 29th, 1907. J. CUNNINGHAM BOWIE.

## THE PRINCIPLES OF VACCINE-THERAPY.

*To the Editors of* THE LANCET.

SIRS,—I have read with great interest Sir A. E. Wright's lecture on this subject published in THE LANCET of August 17th and 24th. The illustration he gives of the value of a solution of sodium citrate 0·5 per cent. and sodium chloride 5 per cent. in dealing with certain localised morbid conditions seems to be capable of more general application. It has occurred to me that some trial of the method might be made in the case of septic infections of the uterus. The more or less complete and often long-continued cessation of the lochia in some of the more malignant forms of puerperal sepsis is well known. As the conditions in septic endometritis are to a greater or less degree—depending on the grade and mode of spread of the infection—comparable to those obtaining in the instance cited, it seems reasonable to assume that a like beneficial effect might be expected in at least some cases. The procedure at any rate could do no harm. Probably where the spread of the infection is by way of the blood-vessels—as, unfortunately, is most frequent in the case of streptococcic endometritis—we ought not to look for so favourable a result. Where, however, dissemination follows the lymph-channels a blocking of these would lead to a lessened access of serum to the mucous surface and hence a deficiency of bacteriotropic substances in the endometrium and deeper-lying tissue. Without going into details it seems possible, e.g., by elevating the buttocks, to cause some of the solution to be retained in the uterus after douching in the ordinary way. The action of the two constituent salts would here be precisely as in the case of a sinus.

I am, Sirs, yours faithfully,

London, S.W., August 26th, 1907. A. G. BANKS.

## THE SEASONS AND MENTAL DISORDERS.

*To the Editors of* THE LANCET.

SIRS,—This question, the relations which the seasons bear to the incidence of mental disorders, one of considerable interest, was discussed in the medical journals some time ago. I regret that I am now unable to lay hands upon the particular journals in which the discussion took place, but its nature was such as to induce the desire to seek further definite facts for its elucidation. I proceeded, therefore, to analyse the admissions made into this house during the past 25 years, assigning to each the month on which the admission took place.

The results now before me show a not greatly divergent incidence in the various months. I need not give all the figures in detail; it may suffice here to say that July stands some 25 per cent. above every other month, whilst the lowest figures are recorded at the beginning and end of the year, with some exceptions. The meaning of those figures is open to a variety of interpretation, and it would be of interest to ascertain how far they are borne out by the experience of other and larger communities. As far as my own statistics are concerned, one significant fact predominates—viz., that July, which is, or which ought to be, one of the hottest months of the year, has the highest average, whilst June comes within the next column of figures.

One may not unnaturally infer from this that the restlessness and sleeplessness often induced by high temperatures, to say nothing of the bodily exhaustion produced by extreme heat, are not without their influence as factors of the increase in question, and we have only to note the frequency of mental breakdown in tropical countries for confirmatory evidence.

I am, Sirs, yours faithfully,

West Malling, Kent, August 24th, 1907. JAMES ADAM.

## IMITATION NAUHEIM BATHS.

*To the Editors of* THE LANCET.

SIRS,—So-called imitations of the Nauheim bath are now so generally employed that it may be worth while pointing out what a difference there is between the cutaneous reaction excited by the effervescing waters of Nauheim and that yielded by water through which carbonic acid gas is merely passed or in which it is generated.

At Nauheim, and to a less extent in baths in which the gas is generated by chemical interaction, the skin becomes covered with minute globules of the gas and on emerging therefrom the subject rivals in hue with the "cardinal of the seas." On this cutaneous reaction depends in part the influence of the Nauheim baths on the circulation, and as it is practically absent when compressed carbonic gas is merely passed through the water of the bath the value of this popular means of aëration must be very small. The difference is well exemplified in the ordinary gazogene. If the water be withdrawn soon after filling, or even within the first few hours after charging, it gives off but little gas and tastes "flat," showing that a certain lapse of time is necessary for the gas to become dissolved. Futher experiment will show that passing carbonic acid through water leaves the latter virtually unchanged. Whatever therapeutical value the Nauheim bath possesses in virtue of its gaseous constituent is due to the latter being in a state of aqueous solution, ready to be set free when the solution comes into contact with the skin.

While it may be conceded that the effects of the Nauheim treatment are only in a minor degree dependent on the action of the gas, this action is lacking when the gas is merely passed through the water. To be operative the gas would require to be left in contact with the water in a cylinder under pressure for at least 12 hours before being employed.

I am, Sirs, yours faithfully,

Aix-les-Bains (Savoie). ALFRED S. GUBB, M.D. Paris.

## BUTTERMILK IN ENTERIC DISEASE.

*To the Editors of* THE LANCET.

SIRS,—The difficulty often experienced by the practitioner in finding any food which can be retained by infants and young children suffering from acute or chronic febrile diarrhœa with vomiting, especially in warm climates, induces me to bring to the notice of your readers a preparation which has a great reputation in the Argentine Republic in cases of this kind and which I cannot find mentioned in any of the books on "Diseases of Children" at my disposal. It might be found useful in the treatment of summer diarrhœa at home. It is sterilised buttermilk, sweetened, and is prepared as follows: Fresh buttermilk is slowly boiled in an earthenware vessel for half an hour—one litre (about 35 fluid ounces) will last for 24 hours—and while gently boiling from five to six dessertspoonfuls of powdered white sugar are added. It must be continually stirred with a wooden spoon and kept in a cool place in a jug with the lid off. One breakfast-cupful may be given every three hours warmed to 37° C. (99·7° F.) according to the age of the child.

The half-hour boiling includes the time the saucepan is on the fire, which should be a brisk one; the actual boiling is therefore about 20 minutes. Children will often digest and thrive on this food when on no other. At first they do not like it, as it tastes nasty, but this passes off after they have had to take it a few times. A change in the green slimy stools is noticed after a short time; they become of a natural yellow colour, the vomiting stops, the fever subsides, and the infant begins to pick up slowly. This food is much used by the Argentine and foreign doctors in the disease called in Spanish "Empacho," which is very prevalent and fatal among children under two years of age. It is also found equally useful when the symptoms of gastro-enteritis are associated with dysentery.

I am, Sirs, yours faithfully,
K. BRUCE BARNETT, M.B., F.R.C.S. Irel.,
Peking, North China, July 23rd, 1907. Major, R.A.M.C.

## AN ASSOCIATION OF SHIPS' SURGEONS.

*To the Editors of* THE LANCET.

SIRS,—The suggestion contained in Mr. Metcalfe-Sharpe's letter to THE LANCET of August 24th *re* the formation of a Ships' Doctors' Association is one which I think merits the serious consideration of the profession. The benefits which such a society as that envisaged by Mr. Sharpe would confer upon the medical branch of the mercantile marine appear to be manifold. Those of our *confrères* who go down to the sea in ships have suffered much at the hands of the shipowner and his agents. Not the least important duty falling to such a society as Mr. Sharpe purposes to form is to acquaint the medical officer himself of his status and prerogatives—in short, the idea should supply a long-felt want.

I am, Sirs, yours faithfully,
Matlock, August 26th, 1907. H. B. SYMONS.

## TOBACCO SMOKING AND PULMONARY TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—In your report of the discussion at the British Medical Association on tobacco smoking and phthisis you quote Dr. A. Newsholme as saying that my observations on the apparent immunity from phthisis of young persons under 22 years of age who were smokers as compared with non-smokers of the same age were fallacious, inasmuch as the vast majority of those under 22 years did not smoke.

Most of us who have learnt anything of vital statistics have been readers of Dr. Newsholme's book, and I should be ashamed of being such a sorry student of his as to have made a statement based on such misleading grounds. The persons whom I had noticed in the out-patient departments of the Dublin hospitals as non-smokers and suffering from phthisis were of the age of from 16 to 22 years and males. Of this class—males from 16 to 22 years—I think that it is no exaggeration to state that the vast majority smoke. If a majority of the same age who are suffering from phthisis do not smoke there is, I submit, sufficient ground for investigation as to whether tobacco smoke affects the incidence of phthisis.

To me it seems that no social habit of tuberculous patients is so remarkable as their general abstinence from tobacco. I do not imagine that a direct bactericidal effect can be the result of the inhalation of tobacco smoke, but it appears not unscientific to hold that the continued inhalation of the fumes into the respiratory tract may have such an effect on the membranes as to make it a less suitable soil for the bacillus tuberculosis.—I am, Sirs, yours faithfully,
J. C. McWALTER,
M.A., D.P.H., F.F.P.S. Glasg., M D. Brux.,
Dublin, August 31st, 1907. Barrister-at-law.

## THE TRADE IN POISONS.

*To the Editors of* THE LANCET.

SIRS,—In your issue of August 17th, p. 438, under the heading "Medicine and the Law," you observed, referring to the Brinkley case: "This points to a dangerous state of affairs capable of existing in spite of the precautions prescribed by the law with a view to control the trade in poisons."

I have lately attended a case of narcotic poisoning, the patient being comatose for 48 hours. On searching I found a one-ounce bottle of chloroform (full) and a one-ounce bottle of laudanum (full), also a bottle of chlorodyne and a bottle which when full held 50 0·5 gramme tablets of veronal but which now contained but one tablet. The first two bottles bore the label of a large London "Stores" and it is conceivable that the other two came from the same place; they were ordered by post and delivered in due course, and I was informed that the patient was in the habit of receiving in this way three one-ounce bottles of chloroform per month. If, as I suppose, for I am ignorant of the wording of the Act, it is sufficient to give one's name and address *per post* instead of signing the book, then I fail to see what is to prevent anyone from obtaining as much poison as he or she pleases. I am, Sirs, yours faithfully,
August 27th, 1907. M.B. Lond.

## THE TRIPPER'S LEAVINGS.

*To the Editors of* THE LANCET.

SIRS,—In a recent issue of THE LANCET under this heading you called attention to the hideous carelessness of some people in regard to the safety and comfort of others, instancing the habit displayed by certain trippers of leaving broken bottles in the grass near the site of an *al fresco* meal. Doubtless you had concrete examples in your mind, but here is another.

There is a golf course at Bexhill near the beach. On Saturday last I accompanied a small girl across some turf leading up to the golf club. I happened to be ahead and saw in the grass a smashed bottle exactly in the line where the child was just going to run. I was able to warn her. She had sandals on, which would not have protected her ankles or the side of her feet at all, and these she had only put on a minute before. The beach here is pullulating with barefeet children, any of whom might have wandered there. Your protest is a valuable one.

I am, Sirs, yours faithfully,
Bexhill, August 29th, 1907. M.D.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Port Sanitary Authority.*

AT a meeting of the Manchester port sanitary authority held the week before last Mr. W. F. Dearden reported that on June 12th a case of small-pox was found at a sailors' lodging-house, and that the patient had arrived by a vessel reaching the docks on the 6th. There were 15 persons on board, and of these three showed good vaccination and re-vaccination marks; the remaining 12 were revaccinated at once. The men were kept under observation, but there had been no spread of the disease. This incident shows the need for careful watchfulness and for all possible precautions against the introduction of infectious diseases, more especially of small-pox, the defences against it, in the present state of the vaccination question, being by no means as strong as they should be. Mr. Dearden also reported the existence of friction in connexion with the removal of condemned carcasses from the foreign animals wharf. It seems that the inspector of the Board of Agriculture first of all allowed the authority's steam launch to come alongside the wharf to take aboard the condemned meat, but later objected to this being done, referring the medical officer to the section of the Foreign Animals Order, 1903, governing the matter. Mr. Dearden did not think the regulation applicable to the using of the landing place as had been done. If condemned meat could be removed by the port authority it was difficult to understand why it could not be removed by water. It is unfortunate that anything should be allowed to interfere with the speedy and convenient removal of condemned meat. It was decided by the port authority to refer the matter to the Board of Agriculture for its ruling.—At a meeting of the authority held yesterday it was reported that during the past month two cases of enteric fever had occurred among seamen entering the port. The disease was supposed to have been contracted in Montreal.—At a meeting of the Manchester port sanitary authority held yesterday reference was made to the passing of the "Pure Food" Bill, and pleasure was expressed that Manchester could take credit for having brought about the Bill. Mr. Dearden, the medical officer, said that it would not only bring about the examination of food stuffs at all ports of entry, but would materially assist those authorities who were already holding inspections by clearing up certain doubtful points in the present operative Acts.

### *Life in a Cellar.*

At an inquest held the other day on the three months old son of a Shawforth quarryman a story was told which illustrates the needlessly miserable conditions with which apparently some of our working classes are content. The father earns about 30*s*. a week, but lives in a cellar for which he pays 1*s*. a week rent. There were four children who all slept in one bed with their father and mother. The mother went to bed drunk on the night the baby died. Dr. T. J. L. Forbes of Whitworth, near Rochdale, said that the child had evidently died from smothering by being overlain, which view the jury endorsed by their verdict. They also requested the coroner to call the attention of the Whitworth urban council to "the overcrowded state of some of these cellar dwellings," while the coroner said that "when they are found to be overcrowded and dirty the people should be turned out at once." Surely it is a disgrace to Whitworth that these underground caves, as they may be called, should be allowed to be used as dwellings, although, as all know, the housing of the poor is one of the most difficult problems that municipalities are called upon to solve. But the conditions, however sordid, under which this quarryman lived were to some extent voluntary. His wages were fair and unless his wife was one of that too numerous class, the hopeless and abandoned women drunkards, there seems no reason why they should have sunk to a state so low. Nothing was said as to the father's habits. This case, however, with others of which this is only a sample, shows that whatever social and philanthropical agencies may be at work little can be done to "elevate the masses," as the phrase goes, unless it is their own wish to lead decent lives.

### *Pigs, Tuberculosis, and Waste Food.*

The hospital committee of the Stockport guardians yesterday recommended that all waste food collected from the consumption ward should in future be burned. Mr. J. Worthington said that there were many patients in the hospital in the last stages of consumption who after attempting to masticate their food put it back on their plates. This food was infectious and ought to be destroyed, "but it had been put in the swill-tubs and sold," presumably for pigs. The recommendation of the committee was adopted, and there can be no question that it was the right thing to do. Pigs, as is well known, are very susceptible to tuberculosis. One or two of the guardians, however, seemed to doubt the necessity for burning the refuse food, and one said that he had taken the opinion of medical men on the matter, and "they call it 'piffle.'" The derivation of the well-known term is obscure but its meaning is not, and we are surprised to learn of medical men ridiculing so proper a precaution.

Sept. 3rd.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *University of Liverpool: the Faculty of Medicine.*

THE success of the medical school has been well maintained during the year 1906-07. The entry of first-year students has been the highest in the records of the school. The session 1905-06 showed a large increase in the number of new students entering for University degrees—viz., 26 as against the average of 15 for the previous four years. This year the advance in numbers was again most gratifying, the number of new M.B. students entering being 39, an increase of 50 per cent. over 1905-06. In view of the fact that the number of students entering the profession in the country remains practically constant, this increase is a high testimonial to the work of the school and shows its growing reputation as a centre of medical education. As the number of new University students entering is a good index to the condition of the school, the entries for the past six years are here given: 1901-02, 11; 1902-03, 19; 1903-04, 17; 1904-05, 13; 1905-06, 26; and 1906-07, 39. The total number of undergraduate students of medicine (University and diploma) during the past three years is as follows: 1904-05, 121; 1905-06, 129; and 1906-07, 145. An increase is also seen in the number of dental students, the numbers being: 1904-05, 24; 1905-06, 31; and 1906-07, 40. The success of the students in examinations was also maintained at a high level. During the year 1906-1907 three students after passing the Final Examination have been admitted to the Fellowship of the Royal College of Surgeons of England (D. T. Barry, F. A. G. Jeans, and R. E. Harcourt), and Dr. O. T. Williams has been admitted to the Membership of the Royal College of Physicians of London. The library has been enriched during the year by the donation of the library of the late Dr. John Cameron, consulting physician to the Royal Southern Hospital, as well as three bookcases containing the volumes. The books in this collection are being arranged and catalogued. The Thompson-Yates library has done good service during the year under the new arrangements provided last year. Mr. R. A. Bickersteth has endowed a scholarship in surgical pathology of the value of £50 for three years, and Mr. W. Thelwall Thomas has renewed the Thelwall Thomas scholarship in surgical pathology for a further period of three years. During the year the honour of knighthood has been conferred on Professor Rubert W. Boyce for his services in tropical medicine in connexion with the Liverpool School of Tropical Medicine. Academic distinctions have been conferred upon several members of the staff by other universities. The University of Aberdeen has conferred the honorary degree of LL.D. upon Professor J. Campbell Brown and Professor Ronald Ross, C.B. The University of Harvard has accorded a similar honour to Professor C. S. Sherrington. Professor T. R. Glynn has been elected a member of the Council of the Royal College of Physicians of London, and Professor Sherrington has been elected a foreign member of the Royal Academy of Sciences at Göttingen. The latter has also been appointed to the newly formed lectureship in neuro-biology. Professor F. T. Paul having resigned the professorship of toxicology and forensic medicine has been given the title of emeritus professor. The chair has reverted into a lectureship and Dr. R. J. M. Buchanan was appointed lecturer of that department. A lectureship in physical anthropology has been established and Dr. W. H. Broad has been appointed to the post. The title of clinical lecturer in the University has been conferred upon the physicians and surgeons of the four general hospitals of the clinical school of the University and upon the physicians and surgeons in charge of out-patients at the Liverpool Royal Infirmary. Mr. A. W. Mayo Robson has accepted the invitation of the council to deliver the third William Mitchell Banks memorial lecture on Nov. 27th.

### *The Death-rate of St. Helens.*

The death-rate of St. Helens during the past fortnight has fallen from 17·7 per 1000 to 13·2 per 1000, as against a corresponding rate last year of 19·3 per 1000. There has also been a remarkable decline in infantile mortality, only 17 deaths having occurred of children under one year of age. Under five years of age there have been 24 deaths, against 39 last year. There has been an entire absence of deaths from the more serious zymotic diseases. The birth-rate was 33·7 per 1000. The Liverpool death-rate for the same period was 14·8 per 1000, whilst the birth-rate was 32·2 per 1000.

Sept. 3rd.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

### *The Isolation of Consumptives at Newport.*

THE borough of Newport (Mon.) is well provided with hospital accommodation for the isolation of infectious diseases. Within quite recent years an institution on the pavilion plan has been established in an elevated position in the town and it has done admirable work. During last year the medical officer of health (Dr. J. Howard-Jones) suggested that one pavilion should be devoted to the treatment of consumptive patients. This suggestion was adopted by the corporation, and a sum of £300 was voted towards the expenses of the first year. It is to be regretted that at no time since this decision was arrived at has there been a pavilion entirely vacant, but rather than delay what is looked upon as a desirable undertaking the corporation has purchased a wooden building which has been used as a hospital during the past few years by Messrs. Aird while they were constructing the new Bristol docks at Avonmouth. It is anticipated that the cost per patient will not exceed one guinea weekly, in view of the fact that the establishment charges will be shared with the present hospital. In the decade 1870–79 the average annual death-rate from pulmonary tuberculosis in Newport was 2·5 per 1000, but during the past few years this rate has been reduced to 1 per 1000.

### *Vaccination Fees in the Clutton Union.*

The public vaccinators in the Clutton union have agreed to accept the fees proposed by the board of guardians. These are 5*s.* for the first case and 2*s.* 6*d.* for other cases where the vaccination is performed in the same house within 24 hours after the first one. At the meeting at which the board discussed the question an attempt was made to reduce the higher fee to 4*s.* 6*d.*, and even 3*s.* 6*d.*, but the proposal met with very little support and the opinion was generally expressed that although the cost of administering the Vaccination Acts was greater than formerly the work of the public vaccinators had very considerably increased.

### *Indiscriminate Medical Relief Orders.*

At the last meeting of the Weobley (Herefordshire) board of guardians Mr. R. I. Dansey, one of the Poor-law inspectors of the Local Government Board, drew attention to the too ready manner in which medical relief orders could be obtained. The union is an extensive one and the relieving officer, in order to save the time of those persons likely to apply for relief who lived at a distance, had been in the habit of giving blank orders to the persons in charge of some of the pay stations. These persons had been accustomed to receive applications for medical relief and had filled up the orders at their discretion. If this practice prevails in other unions it behoves Poor-law medical officers to see that it is discontinued. They are exploited quite sufficiently already and should not be saddled with further burdens.

### *The Milk Supply of the Rhondda Valleys.*

It is satisfactory to find that the milk-dealers in the Rhondda valleys have decided to league themselves together with the avowed object of securing a pure milk supply. They propose to endeavour to secure a warranty with every consignment of milk instead of a yearly warranty as at present. Milk is not always diluted before it reaches the vendor, however, and one of the latter was recently fined at the Porth police court £10 for adding 30 per cent. of water to the milk he was distributing. His excuse to the magistrate before whom the case was tried was, to say the least, ingenious. He said that he sold it for pastry-making to a baker who required diluted milk.

### *Prosecution of an Alleged "Specialist."*

At Brixham in Devonshire on August 22nd John Fee, a "machinist," of Torquay, was charged in custody "that on July 22nd last he, not being a registered medical practitioner, did unlawfully use the title of Doctor Maclaren, thereby implying he was registered under the Medical Acts." Evidence showed that the prisoner called at a house in Brixham and falsely represented that he was sent by Mr. W. J. Quicke of Brixham as a "specialist," and in consequence was allowed to see a female patient who was ill in bed. The prisoner pleaded guilty and attributed the offence to being in an intoxicated condition. The magistrates inflicted a fine of £10 or two months' imprisonment. The prosecution was conducted by the Medical Defence Union.

### *An Action for the Recovery of Medical Fees.*

At St. Austell (Cornwall) county court on August 20th Mr. R. F. Stephens of St. Austell sued a local carrier for £12 for professional attendance. An accident happened to the defendant's wagoner and the defendant gave Mr. Stephens instructions to attend the man, adding that he would pay for the treatment. Three witnesses stated that they heard the defendant tell the plaintiff that he would pay him. For the defence it was contended that he had not employed the medical attendant, the defendant adding that the witnesses had spoken falsely as to his statement to Mr. Stephens. Judge Granger gave judgment for the amount claimed with costs, adding that the defendant had committed "most impudent perjury" and that he would consider whether it was his duty to send the papers to the Director of Public Prosecutions.

Sept. 3rd.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The West of Scotland Convalescent Homes, Dunoon.*

THE thirty-eighth annual report of the Seaside Homes at Dunoon was submitted this week to a meeting of subscribers. During the year 4713 persons (exclusive of children under two years of age) were admitted to the homes and of these 4421 were restored to health, 178 were relieved, 87 did not improve, and five died. The total number of persons admitted since the homes were opened in 1869 has been 115,070. The patients come from all parts of the West of Scotland but principally from the great industrial centres of Lanarkshire and Renfrewshire. Since the last report a large addition, providing 50 beds, has been made to the buildings, thus making in all 300 beds and cribs available. The ordinary income of the institution for the year amounted to £7643 and the expenditure to £6724. The extraordinary expenditure, chiefly represented by the cost of the new wing, amounted to £5693. To meet this large outlay the invested funds were drawn upon and were thus reduced from £14,400 to £10,400. A satisfactory point about the financial statement is that of the ordinary income fully one-half was contributed by the working-classes who benefit principally by this institution. At the meeting it was pointed out by the chairman, Sir John Ure Primrose, that although much had been done in the way of providing convalescent homes for adults, very little had been done in that respect for suffering children. He suggested that the churches in various districts should coöperate and have a common convalescent home. They possessed all the machinery, and through their agencies and missions and otherwise they knew where suffering was. Thus by a little expenditure of effort and money homes could be opened for a host of little ones for whom as yet no adequate provision had been made.

### *Steeplejack's Terrible Death.*

Last week a steeplejack met with a terrible death while engaged in his work at Glasgow. At the time of the accident he was repairing the top of a chimney stack in the chemical works of Messrs. Joseph Townshend and Co. when he fell to the ground. This chimney has the reputation of being the tallest in the world, measuring 468 feet in height, and thus the terrible nature of the man's fall may be realised. When picked up, nearly every bone in the body was broken. It is suggested that the unfortunate man may have been overcome by the fumes issuing from the mouth of the chimney.

### *Anthrax Outbreak in Kintyre.*

A somewhat serious outbreak of anthrax has taken place in Campbeltown parish, two farms being involved. In all eight animals have been destroyed and the carcasses treated by burning.

Sept. 3rd.

## IRELAND.

(FROM OUR OWN CORRESPONDENT.)

### *Tuberculosis in Ireland.*

IN the annual report of the Local Government Board for Ireland covering the year ending March 31st, 1907, special reference is made to the present prevalence of pulmonary tuberculosis in Ireland, where in 1905 there were 12,000 deaths due to tuberculous diseases and particularly to pulmonary tuberculosis and that the death-rate from this particular form of disease stands at a far higher figure in Ireland than in either England or Scotland. The Board thinks many of the difficulties at present experienced in dealing with the problem of consumption would be overcome if power were given to county councils to establish and maintain, either singly or in combination, suitable institutions for the treatment of consumptives. They suggest a plan consisting of four elements: (1) Segregation in hospitals of advanced cases; (2) sanatoriums for incipient cases; (3) tuberculosis dispensaries in large centres of population; and (4) local committees appointed by sanitary authorities to deal with the question of consumption. But in addition the Irish Local Government Board wisely follows the memorandum of the Scotch Board and recommends compulsory notification of pulmonary tuberculosis carried out by special legislation, safeguards being provided to insure that no unnecessary restraint is placed upon the liberty of consumptive patients. Special reference is made to what is being done by the Belfast guardians at their Abbey Sanatorium, where £34,000 in all will be spent (when the place is completed) on the site and the erection of the buildings and where there will be accommodation for 265 consumptive patients. Finally, the report refers to the Tuberculosis Exhibition, of which details are given below.

### *Women's National Health Association of Ireland: Tuberculosis Exhibition.*

A meeting of the consultative committee of the Women's National Health Association of Ireland, composed of delegates from medical societies, county councils, and urban and district rural councils throughout Ireland, was held at Leinster House, Dublin, on August 29th, to confer as to the best methods for making the forthcoming Tuberculosis Exhibition as effective as possible. This exhibition, the first of its kind established in the United Kingdom, is to be held at the Home Industries Section of the International Exhibition during the month of October. The Countess of Aberdeen presided and said that when the Women's National Health Association of Ireland, which was formed in March of this year, began to consider the subjects with which it would have to deal, naturally the first was that disease which caused such terrible ravages in Ireland—tuberculosis—and in collecting literature on the subject their attention was directed to a plan which had been adopted in Germany and the United States of America of forming an itinerant exhibition which would show the need of an educational campaign against this dread disease. After being opened at the great exhibition in Dublin, the Tuberculosis Exhibition would be sent to the poorer parts of Dublin and then to the other cities and rural districts of Ireland. Those having charge of the various sections of the Tuberculosis Exhibition then gave short descriptions of the details of those sections, the Deputy Registrar-General presenting diagrams and statistics showing the extent in Ireland and gradual increase of tuberculosis. Professor E. J. McWeeney described the pathological and bacteriological section, Dr. Lily A. Baker the cooking section, dietary, and milk sterilisation; Dr. Alfred E. Boyd dealt with the literature (including illustrations from other countries) section; Dr. W. J. Thompson described the section which would have appliances and various exhibits bearing on treatment; and Dr. M. F. Cox spoke of the section for arrangement for lectures and demonstrating. Professor Mettam of the Irish Veterinary College is to have charge of the important section bearing on tuberculosis in veterinary medicine. The following motion—

> That we, the members of the consultative committee, having had placed before us a statement of the steps taken by the executive committee with the object of forming a representative and instructive collection of objects illustrating in a popular manner the subject of tuberculosis and its prevention, do hereby approve the same, and we hereby pledge ourselves to do all in our power to make this exhibition a success—

was proposed by Sir H. R. Swanzy, President of the Royal College of Surgeons in Ireland, who said the exhibition was a big undertaking, but he hoped that everything possible would be done to make it a success. Lord Frederick Fitzgerald seconded the motion, which, having been supported by Mr. J. Lentaigne (Vice-President of the Royal College of Surgeons in Ireland), Mr. D. Jamison (medical officer of health of Newtownards), and many others, was unanimously carried. Dr. W. Calwell (delegate from the Ulster Medical Society) in proposing the next motion—

> That we consider it of urgent importance to the welfare of the nation to elicit opinion and diffuse information as to the best means of dealing with an overwhelming evil which is destroying the vitality of our people; and that this meeting desires to draw attention of local public bodies and of philanthropic organisations in Ireland to the educative value of the fortbcoming exhibition, and recommends that steps should be taken to bring visitors to inspect it, and that arrangements should be made to take it to different parts of the country—

said that while there was an overwhelming evil to be combated they found in this exhibition a means of doing so. If Ireland had the same mortality from tuberculosis as was found in England and Scotland some 3000 or 4000 people would be alive at the end of the year 1907 who, with the existing mortality in Ireland, would then be dead. He said they would make an effort in Belfast to support such an admirable scheme. Mr. P. J. O'Neill, J.P., chairman of the Dublin county council, having seconded the motion, Sir John Byers very warmly supported it. He showed that while, since about the year 1870 to the present time, both in England and Scotland the mortality from tuberculosis had fallen one-half in women and one-third in men no such decrease had taken place in Ireland, where the deaths from the disease had actually increased. What they wanted to do was to educate the people as to this terrible mortality and to show them that tuberculosis could be prevented, and that there were great hopes of treating it in the early stages. How better could such facts be brought before the people than by the objective teaching and demonstrations given in such an exhibition? Speaking for the profession in Belfast, they would do everything in their power to make this Tuberculosis Exhibition a success when it visited their city. The motion having been carried, a very hearty vote of thanks was passed to Lady Aberdeen for presiding. No delegates from the Belfast public health committee were present.

### *Health of Belfast.*

It is satisfactory to find that the death-rate of Belfast for the four weeks ended August 17th has fallen to 15·4 as compared with 18·3 in the previous month and 17·8 in the corresponding period of last year. It is the lowest death-rate ever registered in Belfast. There is a marked reduction in the infectious diseases.

Sept 3rd.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *An Action for Damages on account of Alleged Burning by Electricity.*

AT the Congress of the French Association for the Advancement of Science held at Reims in August M. Laquerrière gave some account of a singular case. A man had received some injury in the course of his employment and the diagnostic methods which were resorted to included the application of electricity. He thereupon charged the medical man with causing him personal injury by negligence, and when it was evident that he had not sustained any harm he changed his tactics and claimed compensation on the ground that he had been for two months incapacitated for work by the procedures. A medical expert who was consulted found some slight cicatrices at the site of the alleged injury but was of opinion that there had been no scorching (*brûlure thermique*) of the tissues as the patient had felt nothing unusual immediately after the examination. There was no distinct evidence that an "electrical burn" (*brûlure électrique*) had occurred, and in the result the charge brought against the medical man was dismissed.

### *The Responsibility of a Nursing Association for a Dishonest Nurse.*

In response to a patient's request for a male nurse the Société des Ambulances Parisiennes sent a man who appropriated money to the amount of 2250 francs (£90) and was sentenced to three years' imprisonment for the offence. The patient, holding that the Société des Ambulances Parisiennes was responsible for the acts of a nurse in its employment, then brought an action against it for the recovery of the money and judgment was given in his favour.

### *Scarlet Fever in Paris.*

I have already mentioned the epidemic of scarlet fever which commenced last spring and continued through the summer. During the week ended July 20th there were 583 cases notified, but during the ensuing three weeks there was a marked decline, so that during the week ended August 10th there were only 255 cases notified. There is therefore a prospect of the disease subsiding to its usual level of about 50 cases per week.

Sept. 3rd.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*An Outbreak of Small-pox in Vienna.*

AN alarming outbreak of small-pox occurred quite recently in Vienna, which, however, was soon checked, thanks to the prompt and vigorous action taken by the sanitary authorities. The primary causes of the outbreak appear to be recent immigration and the tourist season. Then the laxity with which the public is used to look upon the necessity of vaccination, together with the vaccination strike of the country practitioners who refused to accept the posts of public vaccinators at the very low rate of payment offered, were also causative factors. Moreover, it is notable that the last three years have seen a remarkable falling off in the number of vaccinations reported by the vaccination officers in spite of the slightly increasing birth-rate and the decreasing infant mortality. The crusade begun by the antivaccinationists has, however, quickly been cut short by the recent outbreak, and the people not only of the capital but also of the country have applied in large numbers for vaccination. Quite a scare came over the population when it became known that within eight days 64 cases of small-pox had been notified to the board of health and removed to the isolation hospital, whilst previously in the last ten years not more than 22 cases altogether had been seen in the town. The public vaccination offices were at once filled by hundreds of mothers with their babies. In order to deal with the urgency of the danger the authorities adopted very stringent measures. The "Epidemie Spital" used solely for epidemics of similar kind was opened at once, a strict supervision of all "suspects" and "contacts" was instituted, and the staff of the board of health has been augmented by a number of physicians who volunteered for the post as emergency physicians and vaccinators. Instructions as to the necessity of prophylactic vaccination, of absolute isolation and thorough disinfection in actual cases, together with a few words dealing with the recognition of the disease, were distributed and the population has willingly responded to the appeal from the authorities. As regards the medical aspect the disease generally runs a mild course, only three deaths having occurred till now in 64 patients. Taking the population of the city (2,000,000) into consideration the number of cases is very small, but were it not for the precautions taken undoubtedly the disease would have spread widely. So far 37 adults and 27 infants have been attacked and three infants have died. The type of the disease is the ordinary one and, as a rule, the fever is mild, so that the virulence of the supposed microbe is apparently not very great.

*A Dangerous Hair-dye.*

An interesting decision has been given by the Suprem Appeal Court of Austria in regard to the duties of a physician in prescribing dangerous drugs or preparations. A medical man had prepared a hair-dye and had given the sale of it to a hairdresser. But the analyst to the board of health found large quantities of copper, nitrate of silver, and antimony in the dye, and therefore the originator of the preparation was charged with negligence and punished severely. The court of appeal agreed with the judgment given by the lower court, because in prescribing drugs the use of which may be fraught with danger if used without control the physician must either control the patient himself or caution him to employ the services of another physician. Although the accused physician stated that the prescription he employed for making up this preparation was taken from a well-known author on diseases of the hair the court did not see its way to acquit him, as the sale of the dye by a non-medical man entitled the public to believe the preparation to be innocuous.

*A Case of Spontaneous Gastro-cutaneous Fistula after Ulcus Ventriculi.*

Cases of spontaneous fistulæ of the stomach leading to the skin have been of very rare occurrence within the last 25 years owing to improvements in surgical measures, but sometimes it happens that an ulcer of the stomach remains undiscovered and then a fistula may establish itself. Writing to the *Wiener Klinische Wochenschrift*, Dr. Mann records a case under his care of a woman, aged 40 years, who until her twenty-sixth year of age had enjoyed perfect health. Then acute pains in the abdomen began but did not prevent her from eating. She was treated in several places for hysteria and intercostal neuralgia but without much benefit; occasionally fresh attacks occurred and lasted for from eight to 14 days. There was neither vomiting nor blood in the motions. After 17 years of irregular pains the woman one day noticed a swelling in the left hypochondrium, which gradually increased in size and the skin above became red. One morning she noticed that from the centre of the swelling drops of a clear viscid liquid were escaping. In the hospital the case was thought to be osteoperiostitis of the ribs and an operation was advised. But when the skin was divided it was seen that the eighth intercostal space was open and that the escaping liquid contained particles of the patient's food. Thereupon the woman was taken to the surgical ward of the general hospital for an extensive operation. The examination of the emaciated patient at that time showed the following conditions. The edges of the wound were about two inches long, thickened, and permitted after slight stretching a view into a large cavity which was filled with a mucous liquid moving synchronously with the diaphragm. From time to time a quantity of the liquid was ejected on the wound edges; this liquid always coloured red congo paper blue. When the patient drank some water or milk it came out at once through the fistula, and the diagnosis of gastro-cutaneous fistula was established. The finger introduced into the stomach encountered much difficulty because of the shrinkage of its walls and the anterior wall was firmly fixed to the muscles and the skin of the abdomen anteriorly. No operation was performed but feeding through the mouth was stopped and rectal feeding begun. After a fortnight of this régime, which did the patient much good, the food was poured directly through the abdominal wound into the easily accessible pylorus and thence into the duodenum. Gradually the woman could swallow milk without losing any through the fistula. But the edges of the wound were almost always moistened by the acid liquid from the stomach and this irritation prevented closure of the wound. Cauterisation of the edges and protective ointments were of no use at all. Dr. Mann finally resolved to cover the edges and almost fill the fistula constantly with an alkaline powder, changing the constituents often so as not to irritate the wound by the powder as well. The results of this plan were excellent. The wound quickly diminished in size, the fistula got so narrow that after a few weeks only filiform bougies could be passed, and at present, although the fistula is not absolutely closed, hardly any leakage occurs. The patient is able to eat ordinary food and has gained 36 pounds in weight. She is still suffering from a hypersecretion of hydrochloric acid.

*Visit of French Physicians to Austria.*

A number of French physicians have recently made a tour through the most important health resorts and university cities of Austria and were received by a special committee consisting of university professors and mayors of the towns. In Vienna, after witnessing several operations at the large clinics, the scientific laboratories and the other institutes for research were visited by the guests, and a visit to the new vaccine institute terminated the excursion. The visitors took with them the impression of very exhaustive clinical work done in this city and the relations between French and Austrian medical circles will be greatly benefited by the tour.

August 27th.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

*Death due to Nervous Exhaustion from Frequent Attendances at Spiritualistic Séances.*

THE lay public as well as the medical faculty are at present much interested in the following case. A lawyer, 38 years of age, who died some two weeks ago, had enjoyed an extensive practice and was well known throughout Budapest for his charitable deeds. According to his medical man he some six years ago showed symptoms of neurasthenia, which symptoms were aggravated by attacks of religious mania. Following upon this he neglected his clients and withdrew himself altogether from public activity, while at the same time he refused to let any medical man see him. Shortly before his death he, at the instance of his family, allowed a medical man to be called in who diagnosed nervous exhaustion, cause unknown, and the death which occurred a few days after was attributed to this condition. A conversation overheard at the funeral led the police to make inquiries, with the result that a band of criminals, headed by an Italian fencing-master whose name had been mentioned at the funeral, were found to have been in intimate friendship with the deceased. The fencing-master's rooms were found to be a place in which spiritualistic meetings were held and a prominent member of these meetings was the lawyer in question. He made the acquaintance of the fencing-master some six years ago, just at the time when his nervous symptoms began to be obvious. It was found that he had become an actual slave of the "angel who duly appeared at every *séance*," and who, as has been ascertained, was the product of ventriloquism. This angel summoned the lawyer to the *séances* from day to day and by his utterances made him spend money and refuse to see any medical attendants. His family's remonstrances were futile and they could not dissuade him from frequenting the *séances*. The Budapest police authorities are now in possession of information concerning everyone connected with the *séances*, and the fencing-master and his companions will be prosecuted. The medical faculty is very much moved by the affair and its members intend to make a proposal to the legislature as to the compulsory closing of all such spiritualistic meeting-houses.

### *French Medical Men in Marienbad.*

On August 16th 26 French medical men, all members of L'Œuvre d'Enseignement Médical Complementaire, with Dr. Etienne Bazot at their head, came to Budapest to see its medical institutions. Before coming to Budapest they stayed in Marienbad where they heard the lecture of a Hungarian medical man. The Marienbad Medical Society intrusted the delivery of the gala address to Dr. Ödön Tuszkai who carried out the task excellently. The guests received his lecture (delivered in French), dealing with the therapeutical value of Marienbad, upon physical and chemical grounds, with great approbation and applause. Professor Monprofit (of Angers) warmly thanked the lecturer. Dr. Tuszkai, after the lecture, conducted the guests to the springs and at dinner he, in a very amusing speech, proposed the health of the French ladies who were present in great numbers.

August 30th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *Vital Statistics*

THE Commonwealth Bureau of Census and Statistics has issued a summary of vital statistics for the years 1901 to 1906. In 1906 the total number of births for the Commonwealth was 107,890, the largest during the period under review. The average birth-rate for 1906 was 26·41. Queensland heads the list of illegitimate births with 7·68 as against 7·04 in New South Wales; then follow Victoria, Tasmania, and South Australia. The statistician remarks that but for the low death-rate the low birth-rate would be a serious national danger for Australia. The death-rate per 1000 in 1906 was 10·9. The rate of natural increase in Australia as compared with other countries in 1905-06 places it above any of them except Holland, with which it is practically identical.

### *Federal Quarantine.*

The Commonwealth Government has introduced a Bill to enable the quarantine administration to be placed under federal control. The Bill is practically a consolidation of the various State quarantine regulations. It is to be administered by the Minister of Trade and Customs. It proposes to enable the executive to declare by proclamation "any ports in Australia to be the first port of entry for oversea vessels" and to prohibit "the introduction into Australia of any noxious insect or any pest, or any disease germ, or microbe, or any disease agent, or any culture, virus, or substance containing any disease germ, microbe, or disease agent." Animals or plants believed to contain disease germs may be excluded, and any part of the Commonwealth in any State where any quarantinable disease exists may be declared a quarantine area. Heavy penalties are provided for masters of vessels entering ports with unreported cases of disease on board their ships.

### *Leprosy in Australia.*

The annual report of the Board of Health of New South Wales on leprosy shows that on Jan. 1st, 1906, 18 persons remained at the Little Bay lazaret. During the year nine persons were reported to the board as suspected lepers, and of these six were ultimately admitted as genuine cases. One other case reported previously but not legally certified brought the total number of admissions for the year up to seven. One patient died and four were discharged, leaving 20 remaining in the lazaret on Dec. 31st, 1906. Tasmania reported one case, the patient being a Chinese immigrant. Victoria and West Australia recorded no case and South Australia furnished no return. Queensland reported 14 cases, of which only three were whites, one being an Australian-born youth, aged 15 years, suffering from the nodular type of disease.

### *Lunacy Reform in Victoria.*

On July 3rd the Melbourne morning papers published a long letter from Dr. J. W. Springthorpe, one of the official visitors to the Kew and Jarra Bend Asylums for the Insane. This letter was dated June 30th and had been sent to the members of the Victorian Cabinet. Its substance may be gathered from its opening sentence:—

> GENTLEMEN,—I find it my unpleasant duty to report that, despite the extended powers of the amended Lunacy Act, and despite also the generous and sympathetic support of the Government, there are still in our metropolitan asylums practically the same overcrowding, the same deficiency in the number and training of attendants, the same lack of trained nurses, and the same want of proper care and treatment of the acutely sick and the acutely insane that characterised them prior to the recent crusade for lunacy reform.

Dr. Springthorpe thereafter gave specific instances of what he considered undesirable in the existing state of affairs. On the same day Mr. Ernest Jones, Inspector-General of Asylums for the Insane in Victoria, wrote a lengthy rejoinder traversing Dr. Springthorpe's charges. This document was prepared at the request of Sir Alexander Peacock, the Chief Secretary of the Victorian Government, who also expressed surprise that Dr. Springthorpe had supplied his letter to the daily press. Other observers, without making any direct reference to Dr. Springthorpe's views, have practically confirmed most of his criticisms. That the Kew and Jarra Bend asylums are obsolete and grossly overcrowded has been pointed out repeatedly for many years. It was hoped that when the new Lunacy Act came into force some four years ago reforms would speedily be brought about. So far this does not appear to have resulted, but the general opinion is that the delay is caused by the cumbrous political control which renders the position of inspector-general an anomalous one in many directions and seriously curtails his power of prompt action. Further communications to the daily press by Dr. Springthorpe have been made in which he reiterates his views, and Sir Alexander Peacock has announced his intention of making a personal inspection of the asylums.

### *Obituary.*

Mr. A. S. Gray, M.R.C.S. Eng., one of the leading figures of the profession in Melbourne for many years, died on July 10th, at the age of 81 years. The late Mr. Gray was born in Dublin and came to Victoria in 1856. He soon established himself in Melbourne as an oculist and aurist and built up a very large practice. In 1863 he founded the Victorian Eye and Ear Hospital and maintained it for some years at his own expense. In 1867 its scope was so large that it was placed under the management of a committee and professional staff, the founder remaining connected with the institution up to the time of his death. He was president of the Medical Society of Victoria in 1880 and filled many honorary positions as surgeon to public bodies. He held the rank of lieutenant-colonel in the Militia service and was a keen sportsman in his younger days.

### *Infant Life Protection.*

Dr. Norris, chairman of the Board of Public Health in Victoria, has recently drawn attention to the mortality among illegitimate and boarded-out infants, remarking that Victoria is the only community in the world where the supervision of boarded-out infants is left entirely in the hands of the police. Dr. Norris has further submitted a number of "suggestions" which have been adopted by the board and forwarded to the Chief Secretary for his approval. The Government propose shortly to introduce an Infant Life Protection Bill. The most important and practicable of these "suggestions," many of which are general in character, are that the services of specially trained medical women should be employed to supervise the health and living conditions of all such infants, and that the milk-supply for all boarded-out or otherwise assisted infants should receive special approval based on expert advice.

### *Ether Explosion in a Dispensary.*

The dispensers at the Children's Hospital, Melbourne, had a sensational experience recently. One of them was engaged in preparing some syrup over a gas stove when a second noticed that a bottle of ether was leaking. He called to his companion to turn out the gas but before this could be accomplished a violent explosion occurred. Three windows in the dispensary were blown out and one of the dispensers was forced through a window into the yard. A fragment of glass was carried some distance and fell on the window of a ward some distance away, breaking it. A curious feature of the occurrence was that the bottles on the dispensary shelves were not disturbed. Fortunately no one was injured beyond the temporary scare of the occupants of the dispensary.

### *Sydney Medical Mission.*

On July 16th Lady Fairfax performed the opening ceremony in connexion with the new buildings of the Sydney Medical Mission. The movement was started in 1900 in humble premises but has developed to such an extent as to require more adequate space. Last year 2839 persons were visited in their own homes. No fewer than 7779 were treated at the dispensary and 823 at their own homes, and eight operations were performed under a general anæsthetic. A feature of the dispensary is that patients are seen at night on Thursdays in every week and this has proved very popular.

### *Insanity in New South Wales.*

On Dec. 31st, 1906, there were 5525 insane persons under official cognisance in New South Wales as against 5277 for the previous year—an increase of 248. The average increase for the past 20 years has been 131, so that last year's increase is excessive. In 1903 the increase was 263, but with this exception last year's total is the highest ever recorded. The inspector-general of the insane, however, states that the increase is apparent rather than real. In New South Wales the proportion of insane to the general community is 1·277; in Victoria, 1·255; in South Australia, 1·389; in Queensland, 1·272; and in West Australia, 1·516.

July 20th.

# Obituary.

## THOMAS WILLIAM ARCHER FULLERTON, M.B. R.U.I., F.R.C.S. IREL.,

MAJOR, I.M.S.

THE death is announced of Major Thomas W. A. Fullerton, I.M.S., which took place at Cawnpore on August 15th. The cause of death was septicæmia contracted while performing an operation, in the course of which he pricked his finger. Major Fullerton was the son of the Rev. Alexander Fullerton of Lucan, county Dublin, and received his medical education at the old Carmichael School of Medicine and at the Royal College of Surgeons in Ireland. During his career as a student he gained the Mayne and Carmichael scholarships, besides other prizes and medals. He graduated at the Royal University of Ireland in 1890 and in 1892 he entered the Indian Medical Service, taking a high place at the competitive examination. He was stationed chiefly in the United Provinces where he greatly distinguished himself in plague work. His name appeared in the list of Coronation Honours as the recipient of the Kaisar-i-Hind gold medal for public service in India. In the campaigns on the North-West Frontier he twice took part—against the Waziris in 1894–95 and in the Malakand affair in 1897–98. In each case he received the medal and clasp. He was specially successful as a surgeon, and to qualify himself still more for his surgical work he took only a few weeks ago, when on furlough, the Fellowship of the Royal College of Surgeons in Ireland. Major Fullerton was a man of charming personality and was a general favourite with everyone with whom he came in contact. He died at the post of duty in the zenith of his manhood, leaving a widow and two sons to mourn their loss.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Alexander Hirschberg, professor of medicine in the University of Lemberg; and Dr. Theobald Kerner, a German poet, who like his father, Dr. Justinus Kerner, was both a poet and a medical man. He was 91 years of age.

# Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Löb has been recognised as *privat-docent* of Experimental Pathology.—*Berlin:* Dr. August Hildebrandt has been recognised as *privat-docent* of Surgery and Dr. Leo Langstein as *privat-docent* of Pædiatry.—*Bonn:* Dr. Gustav Embden has been recognised as *privat-docent* of Medicine and Dr. Erich Zurhelle as *privat docent* of Midwifery and Gynæcology.—*Göttingen:* Dr. Richard Waldvogel, *privat-docent* of Medicine, has been granted the title of Professor.—*Greifswald:* Dr. Erwyn Payr of Gratz has been appointed Professor of Clinical Surgery in succession to Dr. P. Friedrich. Dr. Walter Stöckel, *privat-docent* in Berlin, has been appointed to the Professorship of Midwifery and Gynæcology in succession to Dr. Martin who has resigned.—*Groningen:* Dr. W. Schutter has been appointed Extraordinary Professor of Oto-Rhino-Laryngology.—*Heidelberg:* Dr. Schwenkenbecker of Strasburg has been recognised as *privat-docent* of Medicine.—*Kharkoff:* Dr. P. Barabasheff, Extraordinary Professor of Ophthalmology, has been promoted to an Ordinary Professorship.—*Kiel:* Dr. Wilhelm Pfeiffer has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Max Draudt has been recognised as *privat-docent* of Medicine.—*Moscow:* Dr. I. Alexinski, *privat-docent*, has been promoted to an Extraordinary Professorship of External Pathology.—*Prague (Bohemian University):* Dr. Anton Ostrcil has been recognised as *privat-docent* of Midwifery and Dr. Ottokar Kutvirt as *privat-docent* of Oto-Rhino-Laryngology.—*Vienna:* Dr. J. Partel has been recognised as *privat-docent* of Pathological Anatomy.

A CHARITY FOR THE RELIEF OF SKIN DISEASE.—The Charity Commissioners have framed an order establishing a scheme for the future administration of the funds belonging to the charity hitherto known as the British Hospital for Diseases of the Skin, 29, Euston-road, London, N.W. The endowments consist of £10,149 8*s.* 9*d.* Consols, yielding a gross yearly income of £253 14*s.* 8*d.*, and £55 10*s.* 8*d.* in local loans stock, producing £1 13*s.* per annum. The scheme of the Commissioners provides that these and all other endowments (if any) of the charity shall be managed so as to give effect to the following principles. The money to be divided as nearly as may be into three equal parts, the same to constitute the endowments of three separate charities, to be called respectively the Charing Cross Hospital Special (Skin Diseases) Fund, the Guy's Hospital Special (Skin Diseases) Fund, and the Westminster Hospital (Skin Diseases) Fund. These funds are to be administered by the general committee for the time being of the three hospitals respectively as trustees. Subject to the payment of costs of administration and management, the yearly income of each charity is to be applied solely for the relief of persons affected with skin disease, in one or more of the following ways: (1) the maintenance of beds to be specially allotted to skin patients only, such beds to be in addition to, and not in substitution for, existing beds; (2*) the provision and maintenance of medicinal baths to be used by skin patients only; (3*) the provision of disinfecting apparatus to be used for skin patients only; and (4*) the provision and maintenance of apparatus for the cure of skin disease. No part of the income of the charities may be applied for any of the following purposes: (1) defraying the cost of buildings; (2) discharging debts incurred before the date of the scheme; (3) any purpose directly or remotely connected with vivisection or experiments upon animals; (4) pathological investigation: (5) making drawings of skin patients; and (6) the study of skin disease by means of a laboratory or otherwise. In the case of each charity the trustees may, with the consent of the Charity Commissioners, apply for any one or more of the purposes indicated above by an asterisk (*) any part not exceeding one-third of the capital endowment of the charity and any investments which may from time to time represent unexpended income.

**Donations and Bequests.**—Under the will of Mr. William Marsh, West Bromwich, Staffordshire, the West Bromwich District Hospital will receive £1000, the Royal National Lifeboat Institution £500, the Staffordshire Congregational Union £400, the High-street Congregational Church, West Bromwich, £400, the London Missionary Society £350, the Birmingham General Hospital, £350, and a similar amount to the Queen's Hospital, Birmingham.—Lady Wantage has contributed £100 and the Hon. W. F. D. Smith, M.P., has contributed £25 towards the special fund in aid of the Royal Buckinghamshire Hospital, which now amounts to £3842.

**New Sydenham Society.**—The forty-eighth general meeting of this society was held in Exeter on August 1st, Professor W. Osler being in the chair. The minutes of the last meeting were read and confirmed. The report and balance sheet for 1906 were presented. The report concluded with a recommendation from the council that the society should not be continued beyond the end of the current year. In response to a request from the chairman, Mr. Jonathan Hutchinson said that though he had himself written the report adopted by the council he was not wholly in accord with the recommendation that the society should wind up its affairs. There were still nearly 900 members and his sympathies went with the proposal that the society should continue its work with certain modifications. He would propose to publish every year a volume of clinical lectures, short monographs or papers, translated from foreign sources as promptly as possible after their original issue. The work of abstract making which the society's yearbook used to accomplish was now exceedingly well done in the medical journals, but not a few of the papers with which medical literature now teems were well worthy of reproduction in full, and a valuable and attractive annual volume might be thus constructed. Secondly, he would like to see the Atlas continued but with plates reduced in size and with less letterpress. It should copy nothing and produce only original illustrations of new subjects. It might suitably treat the subjects comprised in the volume of translated monographs. It might also undertake to reproduce selected drawings from among those exhibited at the annual meeting of the British Medical Association, and for this it might venture to ask for a subsidy. It might also come to an arrangement with the Royal Society of Medicine to publish some of the plates accompanying papers read before the society, thus giving them a wider circulation and at the same time enriching the Atlas. It might be worth a thought whether a remodelled society might not become more international in character and enter into close relations with all English-speaking communities. He much hoped that the society would not be given up but that it should be remodelled somewhat on the above lines. Dr. J. T. Leon proposed that a circular should be sent round to the members in which they should be asked whether they were in favour of the recommendation made by the council that the society should not be continued beyond the end of the current year, or of carrying on the society on the lines suggested by Mr. Hutchinson. This was seconded by Fleet-Surgeon P. W. Bassett-Smith and carried unanimously. Dr. F. J. Baildon then urged that in view of the importance of this step it would be well that a statement of the outstanding liabilities and of all the assets of the society should accompany the circular. This was seconded by Dr. C. Gibson and carried. Dr. R. H. Coombs proposed that the statement should be made by a chartered accountant. This was seconded by Dr. Gibson and carried. Mr. H. Power pointed out that many subscribers were more than satisfied with the Atlas, and that some had paid for several years in advance. Dr. A. E. Russell drew attention to the fact that the income of the society had steadily diminished for several years past. There was unfortunately no indication of any recovery as a large number of resignations had been received this year. At the present moment the society was solvent, and if no further diminution in its members occurred it could just be carried on, but with any further shrinkage a deficit would have to be faced or its output would have to be diminished. The meeting terminated with the usual votes of thanks.

**Hospital Saturday at Penzance.**—August 17th was observed in Penzance as Hospital Saturday, when a sum of £98 was collected.

**Bristol Medical Charities.**—As the result of the Licensed Victuallers' fourth annual charity carnival, recently held in Bristol, the sum of £174 has been handed to the funds of the Bristol medical charities.

**St. Mary's Hospital Medical School.**—The winter session will commence on Wednesday, Oct. 2nd, when the prizes and awards for the past year will be distributed, and an introductory address delivered by Professor Osler, M.D., LL.D., F.R.S., Regius Professor of Medicine in the University of Oxford. The annual dinner of past and present students will be held at 7 P.M. the same evening in the Whitehall Rooms, Hôtel Métropole.

**Notification of Glanders, Anthrax, and Hydrophobia.**—The Local Government Board for Scotland has issued circulars to all medical officers of health, signed by the Secretary, stating that the Board has been approached by the Board of Agriculture and Fisheries as to the desirability of making arrangements for the notification of cases of glanders, anthrax, and hydrophobia in man, where the facts pointed to the possibility of infection to the human subject from an animal or its carcass, or where inquiry under the Diseases of Animals Act seems to the medical men concerned to be *primâ facie* desirable. The circular goes on to state that the Board is satisfied as to the advantage of such an arrangement with a view to checking the spread of these diseases. The medical officer of health is requested to communicate to the clerk to the local authority under the Diseases of Animals Act such cases or suspected cases of glanders, anthrax, and hydrophobia in man as may come to his knowledge. A similar circular has been sent to the clerks to the local authority stating that medical officers of health have been instructed as above mentioned.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Butter and Margarine Act.*

Amongst the Bills which received the Royal Assent on Wednesday, August 21st, was the Butter and Margarine Act, 1907.

### *The Conclusion of the Session.*

The Parliamentary session concluded on Wednesday, August 28th, when the Royal Assent was given to a number of Bills which have been agreed upon by both Houses of Parliament. Several of those measures are of interest to the medical profession. Amongst the Bills which have become law are the Public Health (Regulations as to Food) Act, the Education (Administrative Provisions) Act, with its clause instituting the medical inspection of school children, the Public Health Act, the Vaccination Act, the Vaccination (Scotland) Act, the Public Health (Scotland) Amendment Act, and the Notification of Births Act. Other measures which were interesting to the medical profession have been placed before Parliament by private members this session. Few of them, however, made sufficient progress to receive the Royal assent. A Bill to prohibit medical practice by companies, which was brought forward by Lord Hylton in the House of Lords, was made the subject of a special inquiry by a Select Committee. It was strongly supported by Dr. Donald MacAlister and Mr. C. S. Tomes on behalf of the General Medical Council and its passage through the Upper Chamber was easy. However, the Government did not adopt it and afford it facilities, and unfortunately it did not get a second reading in the House of Commons. It suffered the fate of many other useful measures and was not even discussed for want of time. A Bill to restrict the practice of dental companies was dealt with simultaneously with this one in the House of Lords. Strong opposition was offered to it in the Select Committee by unregistered men and it did not succeed in reaching a third reading stage in the House of Lords. Amongst the Bills which were introduced into the House of Commons and subsequently dropped were the Municipal Milk Depôts Bill, the Nurses' Registration Bill, the Parochial Medical Officers (Scotland) Bill, the Poisons and Pharmacy Bill, the Public Health Officers Bill, the Purity of Milk-supplies (Scotland) Bill, and the Sale of Whisky Bill. During question time since the session began matters affecting public health administration have been kept to the front by Members in all quarters of the House.

## HOUSE OF LORDS.

### WEDNESDAY, AUGUST 21ST.

### *The Medical Inspection of School Children.*

The Earl of **CREWE**, in moving the second reading of the Education (Administrative Provisions) Bill, explained the clause instituting the medical inspection of children attending elementary schools. He mentioned that the Board of Education was now actively engaged in forming a medical department to supervise this medical inspection. He added that it was not considered possible to make a specific grant to local authorities for the purposes of medical inspection. However, the President of the Board of Education had announced that there would be a very considerable increase in the general grant and that had to be taken into consideration when they were discussing any extra cost which would be placed on the local authorities by this new duty.

The Archbishop of **CANTERBURY** supported the Bill cordially and said that he hoped to see the clause with respect to medical inspection carried into vigorous effect.

The Marquis of **LONDONDERRY** heartily concurred with what had been said in approval of the clause relating to medical inspection.

The Bill was read a second time.

### MONDAY, AUGUST 26TH.

### *Notification of Births Bill.*

On the motion of Lord **ALLENDALE** the Notification of Births Bill was read a second time and was passed through its remaining stages without discussion.

## HOUSE OF COMMONS.

### THURSDAY, AUGUST 22ND.

### *Infants in Public-houses.*

Mr. **FIENNES** asked the Secretary of State for the Home Department whether he had completed his inquiries into the subject of women taking their infants and young children into public-houses in London and the large towns; and, if so, whether he would lay the reports upon the table of the House.—Mr. **GLADSTONE** replied: I have called for and received reports upon this subject from the metropolitan police and from the police of Birmingham, Liverpool, Manchester, Leeds, Sheffield, and Bristol. The information collected is being summarised but the summary is not yet complete owing to difficulties that have arisen in satisfactorily tabulating the materials furnished.

### *The Supply of Diphtheria Antitoxin.*

Mr. **ASHLEY** asked the President of the Local Government Board whether he was in a position to make any statement with reference to the supply of diphtheria antitoxin on the part of local authorities for the treatment of those who were not in a position to buy it themselves, and whether he would draw the attention of the local authorities to the power given them under Section 133 of the Public Health Act, 1875, 38 and 39 Vic., c. 55, which enabled them to provide medicine and medical assistance to the poor of their districts.—Mr. **JOHN BURNS** answered: I am advised that the enactment to which my honourable friend refers and a similar enactment in the Public Health (London) Act, 1891, enable sanitary authorities, with the sanction of the Local Government Board, to provide a temporary supply of diphtheria antitoxin for the poorer inhabitants of their districts and medical assistance in connexion therewith. I propose to issue a general order giving sanction to such provision by the sanitary authorities subject to suitable conditions. The order is in preparation.

### *The Medical Officer of Health of Southend.*

Mr. **COOPER** asked the President of the Local Government Board whether he was in a position to state the reasons why the medical officer of health of Southend had resigned his appointment; whether this resignation was in any way due to the desire of the corporation of Southend to reduce the salary attached to this appointment; whether any reduction of salary had been sanctioned by the Local Government Board; whether the medical officer of this town had to devote the whole of his time to the duties of his office; and, if so, whether the Local Government Board would require such a salary being paid as would secure the appointment of a qualified and competent official.—Mr. **JOHN BURNS** replied: I do not understand that this officer resigned his appointment. The period for which he was appointed expired on the 18th instant, and hence it was necessary that the appointment should be renewed or a fresh appointment made. No sanction on my part has been given to a reduction in the salary, nor had I heard anything of the subject until to-day. I have, however, this morning received a communication from the town clerk to the effect that the town council has reappointed the officer for three months at £600 a year, but that it proposes to advertise for applications for the post at a salary of £500 a year. I gather that the present medical officer declined to accept reappointment on these terms. It is intended that the person to be appointed as medical officer of health shall also act as medical superintendent of the hospitals for infectious disease and as medical officer of the education committee. Subject to this he will be required to devote the whole of his time to his duties as medical officer of health. Whether the proposals of the town council are such as I can properly approve is a matter which will receive my consideration.

### *Calf Lymph.*

Mr. **WEIR** asked the President of the Local Government Board, in view of the fact that before the lymph obtained from any calf was used the animal was slaughtered for the purpose of ascertaining the condition of its health, whether he would state how many of the 505 calves hired last year were found on examination to be in perfect health; and, seeing that the hire of a four months old calf for a fortnight costs the Board on an average 34*s*., whether he would say if, in making arrangements for the supply of calves, the Board called for tenders, and for what period contracts were made.—Mr. **JOHN BURNS** furnished the following written answer: Of the 505 calves hired last year 444 were, after slaughter, examined by the veterinary surgeon and 442 were certified as perfectly healthy. The contracts are not made for any definite period. The Board has from time to time made inquiries with a view to obtaining tenders from different contractors, but it has not found persons willing to tender under the conditions which it finds it necessary to impose.

### *Southend Sewage Disposal.*

Mr. **HUGH BARRIE** asked the President of the Local Government Board whether he was aware that the town council of Southend had agreed to pay the owner of the Hadleigh Bay oyster beds £500 per annum for four years or so long as the corporation (Southend) was permitted to discharge crude sewage into the estuary, the owner meanwhile working his beds; whether the Local Government Board could permit a continuance of this practice fraught with so much danger to the public health; whether he was aware that some £20,000 sterling had been spent by the town council of Southend in recent years in defending its practice of discharging crude sewage into the estuary; and whether, in both the interests of the public health and of the ratepayers, he could see his way to order a public inquiry.—Mr. **JOHN BURNS** replied (by written answer): I have no information as to the agreement referred to or as to the precise amount spent by the town council in defending the existing arrangements for the disposal of the sewage of the borough. It does not at present appear to me that there would be any advantage in my directing a public inquiry of the kind suggested.

### *Vaccination Bill.*

The House considered the Lords' amendments to the Vaccination Bill.

Dr. **MACNAMARA** (Parliamentary Secretary to the Local Government Board) explained that the Bill when it left the House of Commons contained a provision that either parent of a child in order to obtain exemption for him or her from vaccination should, within four months of birth, make a statutory declaration of conscientious objection. The House of Lords had so altered the Bill as to rest the obligation of making the statutory declaration on the father or the single parent having custody of the child. There was danger of imperilling the passing of the Bill if the Lords' amendment were not accepted. He appealed to the House to accept it.

Mr. **LUPTON**, Sir **WILLIAM COLLINS**, and Mr. **LEHMANN** regretted the attitude of the Lords on this point.

Mr. **JOHN BURNS** pointed out that even with the Lords' amendment the facilities provided by the Bill for making a statutory declaration by an objector to vaccination were an improvement beyond all comparison with the conditions which at present existed. On the merits of the question his own view was that the liability and responsibility should rest upon the father of the child and not upon the mother.

The House agreed to the Lords' amendments.

### FRIDAY, AUGUST 23RD.

### *Notification of Births Bill.*

The House took up the consideration on report of the Notification of Births Bill, which was amended in several respects by one of the Standing Committees. Some time ago Sir **HENRY CRAIK**, Sir **JOHN TUKE**, and Sir **HENRY KIMBER** placed motions on the notice paper for the recommittal of the Bill for the purpose of having deleted from it the provision that medical practitioners should be compelled to furnish the notification in question. These motions, however, were either withdrawn or were not moved.

The House at once proceeded to the consideration of Clause 1, the main provisions of which are as follows:—

"The provisions of this section shall have effect in the area of any local authority in which this Act is adopted by that authority in accordance with the provisions of this Act—

(1) In the case of every child born in an area in which this Act is adopted it shall be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after, the birth, to give notice in writing of the birth to the medical officer of health of the district in which the child is born, in manner provided by this section.

(2) Notice under this section shall be given by posting a prepaid letter or postcard addressed to the medical officer of health at his office or residence, giving the necessary information of the birth within thirty-six hours after the birth, or by delivering a written notice of the birth at the office or residence of the medical officer within the same time; and the local authority shall supply without charge addressed and stamped postcards containing the form of notice to any medical practitioner or midwife residing or practising in their area, who applies for the same.

(3) Any person who fails to give notice of a birth in accordance with this section shall be liable on summary conviction to a penalty not exceeding twenty shillings: Provided that a person shall not be liable to a penalty under this provision if he satisfies the court that he had reasonable grounds to believe that notice had been duly given by some other person."

Mr. **BERTRAM** moved an amendment to alter the clause in such a manner that there would be no responsibility cast upon the midwife in attendance to notify the birth. Was it wise, he asked, to lay this new obligation upon women, many of whom were illiterate and had sufficient duties already to perform?

Dr. **MACNAMARA**, in resisting the amendment on behalf of the Government, said that if it were carried and the father of a child were absent at the time of the birth, there would be no notification of it at all. Midwives already notified births under the Midwives Act, and as they were to be supplied with prepaid letters or postcards for the purpose of the present Bill he did not think that a very serious new obligation was being imposed on them.

The amendment was negatived after some discussion.

Lord **ROBERT CECIL** moved an amendment to relieve medical practitioners from the obligation to notify births at which they attended. The clause laid this duty on "any person in attendance upon the mother at the time of, or within six hours after the birth." He regretted to have to move the amendment. The medical profession felt that the Bill as it stood would impose upon them a new professional duty without any payment. He believed that it would risk the success of the measure if a fee were permitted to be paid. He would point out to honourable Members that the medical profession had withdrawn their opposition to the Bill on the terms that this amendment was passed. Without that withdrawal of opposition it would have been impossible to get facilities from the Government for the Bill.

Colonel SEELY seconded the amendment.

Mr. JOHN BURNS said that the Government reluctantly accepted the amendment in order to get the Bill through. Personally it was a matter of great regret to him that a great and honourable profession which associated itself with signal earnestness from the commencement with the movement for the reduction of infantile mortality, should now dissociate itself from what he conceived to be one of the most beneficent movements they had witnessed in recent years. Through their representatives in the House the medical profession had asked to be excused from coöperating with other people in this measure. He believed, however, that the best of the medical men would deplore the attitude taken up by their profession and would refuse to dissociate themselves from the rest of the people in working this experimental measure. He was convinced that the medical men were greater than their trade union and would take a wider view than their profession imposed upon them. When this Bill had had a year's experience he was certain that medical men would agree to take an active and practical part in its working.

Mr. COOPER declared that the opposition of the medical profession was not on the ground of the non-payment of a fee for notification. It was the penalty to which they objected. When a deputation waited on the right honourable gentleman on the subject Sir Victor Horsley put it plainly and distinctly that it was the penalty which they objected to for failure to make the notification.

Lord ROBERT CECIL: The honourable Member must surely have forgotten some of the conversations we have had.

Mr. BURNS: Hear, hear.

Mr. COOPER continued that the medical profession regarded notification as a civil duty which should fall on the parent. The Bill was based on the Notification of Diseases Act. There was a penalty under that Act but there was also a fee. However, in this case the ground of the opposition of the medical profession was not the non-payment of a fee but the penalty which it was proposed should be put on the medical man in a matter which ought to concern the parent alone.

Several Members opposed the amendment.

Mr. BOWLES asked whether the rejection of the amendment would lead to the withdrawal of the Bill.

Dr. MACNAMARA, whilst admitting that the function of the medical man in the birth chamber was a professional one and that it was not for him to scatter broadcast notifications of births, thought that medical men might have undertaken this duty. He would not say that if the amendment were rejected the Bill would be dropped. However, he had been informed that if the amendment were not carried, and the duty of notification were cast upon medical men there would be such powerful opposition to the Bill in the House of Lords as would endanger the progress of the measure at so late a period of the session. He felt that with the medical men out of the Bill it was still worth saving and he hoped that the objections to the amendment would not be pressed.

Lord ROBERT CECIL, by leave of the House, made a personal statement with regard to his action with respect to the Bill. He, as the Member who had introduced the Bill, had been told that unless medical opposition to the Bill were withdrawn the Government could not see its way to grant facilities to it, by "starring" it on the notice paper. He therefore had approached the Government to see if it would assent to an amendment of the kind he now proposed. The representatives of the medical profession in the House agreed to withdraw their opposition if he moved such an amendment and if it were accepted by the Government. In those circumstances, if his amendment was not carried he would feel bound to prevent the Bill from going further if he could. He considered that the Government was also bound by that understanding, and, therefore, if the amendment was rejected it was honourably bound to abandon the Bill.

Mr. COOPER remarked that he had withdrawn his opposition to the Bill on the understanding that the Government would agree to the insertion of Lord Robert Cecil's amendment.

Mr. BURNS admitted that the noble lord had accurately stated the arrangement made between himself and the medical profession. They could not, however, by an amendment or bargain between themselves withdraw the Bill from the purview of the House when there might be a chance of getting it through. For his own part he declined to accept the attitude in which Mr. Cooper wished to place him. It was all very well to say that the medical men now did not want a fee. Had the honourable Member told that to the noble lord and himself before the necessity for a bargain of the kind would not have been necessary. He appealed to the noble lord to exonerate him from any breach of an agreement and to leave the matter to be determined by the good sense of the House.

Lord ROBERT CECIL intimated that personally he felt bound to adhere to the obligation he had come under.

Mr. COOPER then asked the noble lord to give way on this point and he for his part would raise no objection to the House passing the Bill in its present form. However, he would like it to be understood that when he withdrew his amendments to this Bill it was on the distinct understanding that the Government should "star" the Bill as a Government measure. If he had not withdrawn his amendments the Bill would not have been "starred." Therefore the onus would rest entirely with the President of the Local Government Board.

Mr. BURNS thanked Mr. Cooper for the promptitude with which he had withdrawn his objection and for the manner in which he had released Lord Robert Cecil and himself from any supposed understanding.

Sir HENRY CRAIK said that he was placed in a very awkward position as he had had no opportunity of consulting his constituents. No notice had reached him with regard to the fee. The only thing was the objection to a severe penalty attaching to the neglect to make notification. At the same time if Mr. Cooper, speaking for the medical profession, felt himself at liberty to release them, he was willing to follow his lead, though he confessed that he did so with doubt and hesitation.

On a division there voted—for the amendment, 19; against, 87; majority against, 68.

The amendment was accordingly rejected.

Clause 2 relates to the adoption of the Act and the definition of the local authority.

On the motion of Mr. COOPER an amendment was agreed to, providing that in London the medical officer of health of every metropolitan borough (including the City of London) in which the Act was in force for the time being should send weekly to the London County Council in a form prescribed by the Local Government Board a list of all notices of births received by him under this Act during the past week.

The report stage having been disposed of,

Mr. G. WHITELEY (Patronage Secretary to the Treasury) moved that the Bill should be read a third time.

Mr. COOPER regretted that the Bill had been deprived of its compulsory character in Committee.

Mr. BURNS, in supporting the third reading, said that there were many cases of infantile mortality and the milk-supply was a prime factor. He hoped that the President of the Board of Agriculture would tackle this subject next session. Married women, he continued, ought not to work in factories. Their province was at home. The sooner they recognised that the better for the comfort of their husbands, the health of their children, and the welfare of the State. Fortunately they were now confronted with a healthy public opinion on this matter and social feeling was rising in the direction of greater attention being paid to the care of the children. He hoped that the Bill would help to reduce the infantile mortality, which was a shame and reproach to the country, and that five years hence its success in this direction would make them say that they "builded better than they knew."

The Bill was read a third time amidst cheers.

### *The Medical Inspection of School Children.*

Sir WILLIAM COLLINS asked the President of the Board of Education whether under the Education (Administrative Provisions) Bill there was any obligation on parents to submit children attending public elementary schools to medical inspection, as well as an obligation upon local education authorities to provide for such medical inspection.—Mr. McKENNA replied, by written answer: In the view of the Board the obligation placed by the Bill upon the authority to provide for inspection does not of itself compel a parent to submit his child to inspection.

## TUESDAY, AUGUST 27TH.

### *Deaths from Privation in London.*

In answer to a question by Mr. SUMMERBELL, Mr. BURNS furnished the following written reply: I understand that the number of cases is as follows: in London, 49; in the eastern district of London, 13; in the Whitechapel union, seven This was the union in which the greatest number of deaths of the kind referred to took place. The number of cases in which coroners' juries returned a verdict of death due to want, exposure, &c., outside London was 171.

### *The Sleeping Sickness.*

Mr. REES asked the Under Secretary of State for the Colonies whether he could state the weekly number of deaths from sleeping sickness in Uganda, and whether the Government would take special measures to prevent the spread of this scourge southwards to Nyassaland.—Mr. CHURCHILL replied: I regret that I am unable to give the information asked for in the first part of the question. The question of the measures to be taken to prevent the spread of sleeping sickness is not one for this Government alone, but for all the Governments in whose African possessions the disease unfortunately exists, and the only prospect of dealing with it effectively appears to be by international coöperation. The International Conference which met in London in June last has already taken some steps in this direction, and when it meets again in November next it is hoped that it will be possible to arrive at a definite agreement on the whole question of the investigation and control of the disease. I should, however, add that the problem of controlling an epidemic of this kind affecting vast areas in the heart of Africa is one which presents enormous difficulties, and that while every exertion will be made too much must not be expected even from international coöperation.

# BOOKS, ETC., RECEIVED.

CLARK, R. AND R., LIMITED, Brandon-street, Edinburgh.

Clinical Studies. A Quarterly Journal of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P.E., F.R.S.E., Physician to the Edinburgh Royal Infirmary; Lecturer on Clinical Medicine in the School of the Royal Colleges, Edinburgh. Vol. V. Price not stated

COLLIER AND CO., 2, Tudor-street, London, E.C.

The Fortunes of Fifi. By Molly Elliot Seawell, Author of "Francezka." "The Sprightly Romance of Marsac," "Children of Destiny." Price 3*s*.

ENCYCLOPÆDIC PRESS, THE, 22, Bank-street, Sheffield. (LENG, Sir W. C AND CO., LIMITED, 180 and 181, Fleet-street, London, E C.)

The Kennel Encyclopædia. Under the General Editorship of J. Sidney Turner, M.R.C S., F.L.S., F.Z.S., &c. (Chairman of the Committee of the Kennel Club), Assisted by Vale Nicolas. Vol. I., ABD to COL. Part IV. Price 5*s*. net.

F. A. DAVIS COMPANY, 1914–16, Cherry-street, Philadelphia, Pa , U.S.A.

Diseases of Infancy and Childhood; their Dietetic, Hygienic, and Medical Treatment. A Text-book designed for Practitioners and Students in Medicine. By Louis Fischer, M.D., Visiting Physician to the Willard Parker and Riverside Hospitals of New York City; former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, &c. Price not stated.

Diseases of the Stomach By Dr. I. Boas, Specialist in Gastro-Enteric Diseases in Berlin. The Sole Authorised English-American Edition from the latest German Edition. By Albert Bernheim, M.D. (Freiburg, Germany), Philadelphia. Price $7.00 net.

**Falconer, John**, 53, Upper Sackville-street, Dublin. (**Baillière, Tindall, and Cox**, London. **James Thin**, Edinburgh. **John Wright and Co.**, Bristol.)

Transactions of the Royal Academy of Medicine in Ireland. Vol. XXV. Edited by James Craig, M.D., F.R C.P.I., General Secretary, Physician to the Meath Hospital and County Dublin Infirmary. Price not stated.

**Fischer, Gustav**, Jena.

Mitteilungen aus dem Laboratorium für Radiologische Diagnostik und Therapie im k.k.allgemeinen Krankenhaus in Wien. Herausgegeben von Dr. Guido Holzknecht, Privatdozent für Medizinische Radiologie an der Universität in Wien. Zweites Heft. Price M.4

Über den heutigen Stand der Typhusbekämpfung. Von Prof. Dr. Martin Kirchner, Geh Ober-Medizinalrat in Berlin. Abdruck aus dem Klinischen Jahrbuch. Siebzehnter Band. Price M 1.60.

Die Erkrankungen des Siebbeins. Von W. Uffenorde, Privatdozent und Assistent der Kgl. Poliklinik für Ohren- und Nasenkranke in Göttingen. Price M.10.

**Frowde, Henry, and Hodder and Stoughton**, 20, Warwick-square, London, E.C.

Oxford Medical Publications. Diseases of the Male Generative Organs. By Edred M. Corner, M.A., M.B., B.Sc, M.C., F.R.C.S., Surgeon to Out-patients, St. Thomas's Hospital, Senior Surgeon to Out-patients, Children's Hospital, Great Ormond-street, Consulting Surgeon to the Wood Green and Purley Hospitals, late Erasmus Wilson Lecturer, Royal College of Surgeons, &c. Price 5*s.* net.

Oxford Medical Publications. Prostatic Enlargement. By Cuthbert S. Wallace, M.B, B.S. Lond., F.R.C.S Eng., Surgeon to the East London Hospital for Children, and Surgeon to Out-patients, St. Thomas's Hospital; Teacher of Practical and Operative Surgery in the Medical School Bacteriology, by Leonard S. Dudgeon, M.R.C.P. Lond., Bacteriologist to St. Thomas's Hospital, Director of the Laboratories and Joint Lecturer on Pathology in the Medical School. Price 12*s.* 6*d* net.

Oxford Medical Publications. A System of Medicine. By Eminent Authorities in Great Britain, the United States, and the Continent. Edited by William Osler, M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; assisted by Thomas McCrae, M D., F R.C.P Lond., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University, Baltimore. Volume I. Volume II. Infectious Diseases. Price 24*s.* net, in sets of seven volumes, or 30*s.* net for a single volume.

**Green, William, and Sons**, Edinburgh and London.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. V. Inulin to Lumbar-Puncture. Price 15*s.* net.

**Henry O. Shepard Co.**, Chicago.

Cook County Hospital Reports, 1906. Compiled and edited under the Direction of the Publication Committee of the Cook County Hospital Attending Staff. Price not stated.

**Hill, Walter**, 67 & 69, Southampton-row, London, W.C.

The Holidays, 1907. Where to Stay and What to See. Price, of the Railway Station Bookstalls or Newsagents, 1*s.*; or from the Publisher, 1*s.* 6*d.*, post free.

**Hirschwald, August**, Unter den Linden, 68, Berlin, N.W.

Praktikum der gerichtlichen Medizin. Von Dr. Hugo Marx, Königlicher Gerichtsarzt des Kreises Teltow und Gefängnisarzt in Berlin. Price M 3 60.

**Hutchinson and Co.**, 34, 35, and 36, Paternoster-row, London, E.C.

Baby Toilers. By Olive Christian Malvery (Mrs. Archibald Mackirdy), Author of "The Soul Market." Price 2*s.* 6*d.*

**J. B. Lippincott Company**, Philadelphia and London.

The Dispensatory of the United States of America. By Dr. Geo. B. Wood and Dr Franklin Bache. Nineteenth edition. Thoroughly revised, largely rewritten, and based upon the eighth decennial revision of the United States Pharmacopœia. By H. C. Wood, M.D., LL.D. Joseph P. Remington, Ph.M, F.C.S, and Samuel P. Sadtler. Ph.D., LL.D., Assisted by Albert B. Lyons, M.D., and Horatio C. Wood, jun., M D. Price £1 11*s.* 6*d.* net.

Essentials of Milk Hygiene. A Practical Treatise on Dairy and Milk Inspection and on the Hygienic Production and Handling of Milk, for Students of Dairying and Sanitarians By C. O. Jensen, Professor in the Royal Veterinary and Agricultural College of Copenhagen, Denmark. Translated and amplified by Leonard Pearson, Dean of the Veterinary Faculty of the University of Pennyslvania. Price 7*s.* 6*d.* net.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

**Bennett, H. G.**, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Resident House Physician at St. Thomas's Hospital.

**Butler, G G.**, M.R.C.S., L.R.C.P., has been appointed Resident House Physician at St. Thomas's Hospital.

**Churchill, S.**, M.R.C.S., L.R.C.P., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

**Dewar, J.**, M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the St. Margaret's Hope District of the county of Orkney.

**Flitcroft, T. E.**, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the North Bolton District of the county of Lancaster.

**Glassington, Charles W.**, M.R.C.S. Eng., L.D.S., has been appointed Dental Surgeon to the Duke of York's Royal Military School, Chelsea.

**Gunn, A. B M.**, M.B., M S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Westray District of the county of Orkney.

**Lawry, Richard Coger**, L.R.C.P. Lond., M.R.C.S Eng., has been appointed Medical Officer to the No. 1 District and Workhouse, Penzance.

**Lawson, Thomas Cornelius**, M.R.C.S. Eng., L.S A., has been appointed a District Medical Officer by the Stratton Union, Cornwall.

**Loughborough, A. L.**, M.R.C.S., L.R.C.P., has been appointed Resident House Physician at St. Thomas's Hospital.

**Mead, Francis H.**, M.D. Dunelm, M.R.C.S. Eng., has been appointed Medical Officer of Health of the city of San Diego, California, U.S.A.

**Page, C. M.**, M.B., B.S. Lond, M.R.C.S., L.R.C.P., has been appointed Junior Casualty Officer at St. Thomas's Hospital.

**Parsons-Smith, B. T.**, M.R.C.S., L.R.C.P., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

**Pinchin, A. J. S.**, M.B., B.S Lond., M.R.C.S., L.R.C.P., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

**Sankey, W. O.**, M.B, B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Senior Casualty Officer at St. Toomas's Hospital.

**Scott, Frederick R.**, M.B., B.S Durh., has been appointed Medical Officer of Tynemouth Workhouse.

**Smith, G. McCall**, M.B., B.S. Edin, has been appointed Certifying Surgeon under the Factory and Workshop Act for the Strathmiglo District of the county of Fife.

**Sutton, W. H. R.**, M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

**Walker, S L.**, B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Resident House Physician at St. Thomas's Hospital.

**Whitehead, C. E.**, M.R.C.S, L.R.C P., has been appointed Resident House Physician at St. Thomas's Hospital.

**Worthington, G. V.**, M.B., B.S. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cheltenham District of the county of Gloucester.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

**Birmingham Infirmary.**—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

**Birmingham, Queen's Hospital.**—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

**Bradford Poor-Law Sanatorium for Consumptives**, Eastby, near Skipton. Resident Medical Officer. Salary £100, with rations, apartments, and washing.

**Bradford Workhouse.**—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

**Bristol Royal Infirmary.**—Resident Casualty Officer for six months. Salary £50 per annum.

**Buxton, Derbyshire Devonshire Hospital.**—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

**Cambridge, Cambridgeshire Lunatic Asylum**, Fulbourn.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, rising to £150, with board, lodging, and attendance.

**Carlow District Asylum.**—Resident Medical Superintendent. Salary £350 per annum and allowances.

**Central London Ophthalmic Hospital**, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

**Central London Sick Asylum District.**—First Assistant Medical Officer and Dispenser at Cleveland-street, W., and Second Assistant Medical Officer and Dispenser at Colindale-avenue, Hendon, N.W. Salary of former £120 per annum, rising to £150, and of latter £110 per annum, with board and residence in each case.

**City of London Hospital for Diseases of the Chest**, Victoria Park, E.—Pathologist. Salary 100 guineas per annum. Also House Physician for six months. Salary at rate of £50 per annum, with board, washing, and residence. Also Clinical Assistant.

**Eccles and District Medical Association.**—Resident Medical Officer. Salary £230 per annum, with residence.

**Gravesend Hospital.**—House Surgeon. Salary £100 per annum, with board and residence.

**Great Northern Central Hospital**, Holloway.—Senior House Surgeon, Senior House Physician, Two Junior House Surgeons, and One Junior House Physician. Salary of Senior Officers at rate of £60 per annum and of Junior Officers at rate of £30 per annum, with board, lodging, and washing.

**Great Yarmouth Hospital.**—House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

**Hampstead General Hospital.**—Resident Medical Officer. Salary £80 per annum, with board and residence.

**Hemel Hempstead, West Herts Infirmary.**—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

**Hull, Royal Infirmary.**—Honorary Physician.

**Jersey Dispensary and Infirmary.**—Resident Medical Officer.

KING'S LYNN, WEST NORFOLK AND LYNN HOSPITAL.—House Surgeon Salary £100 per annum, with board, residence, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £30, with board and lodging.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Physicians and Two House Surgeons. Salaries at rate of £60 per annum, with board and residence.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board and residence. Also Assistant House Surgeon for six months. Salary at rate of £75 per annum. Also Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing.

MANCHESTER WORKHOUSE, Crumpsall.—Assistant Medical Officer. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, for six months. Salary of two former at rate of £40 per annum, and of two latter at rate of £20 per annum. Also Resident Anæsthetist. Salary at rate of £40 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board, lodging, &c.

NEWCASTLE-UPON-TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £104 per annum, with board, lodging, &c.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

ROYAL DENTAL HOSPITAL, Leicester-square.—House Anæsthetist. Salary £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 a year, with board and residence.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary £80 per annum, with apartments, rations, and allowances.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TORQUAY, TORBAY HOSPITAL.—House Surgeon. Salary £100 per annum, with residence board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board and lodging.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Honorary Registrar and Pathologist.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Penkridge, in the county of Stafford; at Coldstream, in the county of Berwick; and at Lauder, in the county of Berwick.

# Births, Marriages, and Deaths.

## BIRTHS.

CLARK.—On August 28th, at Forest Hill, the wife of Charles A. Clark, L.D.S., of a son.

DAWSON.—On Sept. 1st, the wife of Bertrand Dawson, M.D., F.R.C.P., of Wimpole-street, W., of a daughter.

EDWARDS.—On August 28th, at Gosport, the wife of Lieutenant G. B. Edwards, R.A.M.C., of a daughter.

LYLE.—On August 30th, at Bournemouth, the wife of Lieutenant-Colonel Allan Lyle, R.A.M.C. (retired), of a daughter.

MACCARTHY.—On August 26th, at Londonderry, the wife of Brendan MacCarthy, M.D., D.P.H., of a son.

ROBERTSON.—On August 31st, at Wimbledon, the wife of Dr. F. W. Robertson, of a son.

## MARRIAGES.

COMERFORD—WOODGATE.—On August 29th, at All Saints' Church, Patcham, Sussex, Beaumont H. Comerford, M.D., D.P.H., to Elizabeth, daughter of the Rev. R. Shaw Woodgate.

MCKINNEY—STEVENS.—On Sept. 2nd, at St. Barnabas, Little Ilford, Hugh Giffen McKinney, M.R.C.S., to Louie, daughter of Andrew Stevens.

SPRAWSON—KNOX.—On August 31st, at Holy Trinity Church, East Finchley, Evelyn Charles Sprawson, M.R.C.S., L.R.C.P., L.D.S., to Evelyn Jessie, daughter of John Knox.

## DEATH.

MORE.—On Sept. 2nd, at Rothwell, near Kettering, James More, M.D., aged 73 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE INCREASE IN THE SALE OF SECRET AND PROPRIETARY REMEDIES.

MR. J. COFMAN, Ph.L., who is a strong advocate for reform in the pharmaceutical world, has recently read before the Federation of Local Pharmaceutical Associations a trenchant paper in which he urges pharmacists to set their house in order if they do not wish their proper business to be entirely swamped by the trade in proprietary preparations in which they are yearly becoming more deeply involved. After telling his audience roundly that the title of "chemist" is now merely an up-to-date euphemism for the French "bazaar" or the American "store," he remarked that "to stock and sell quack medicines is a disgrace for a respectable profession." He considered the advertised pharmaceutical proprietary preparations to be a menace to the present interest and the future existence of pharmacy, which he "dreams of" as flourishing brightly among the respected professions of England. The last part of his paper was concerned in showing that the profits accruing to the pharmaceutical chemist from the sale of these preparations in no way compensated him for the loss of his old legitimate profits due to the fact that some medical men, who look upon pharmaceutical chemists as responsible for the competition from quack medicines, keep back dispensing from them as a hostage until they have ceased helping the sale in these articles. Mr. Cofman put forward six proposals with a view to the checking the existing evils, the first two being "that the Pharmaceutical Society and the General Medical Council be approached to take such steps as are in their power to secure legislation for the proper control of the traffic in secret remedies." He then proposed the following motion:—

"The Federation of Local Pharmaceutical Associations, strongly convinced that the present unrestricted and uncontrolled traffic in secret remedies is fraught with grave dangers to the public health and is highly detrimental to the moral and material development of pharmacy, urge the President and Council of the Pharmaceutical Society to take such steps as are in their power to induce His Majesty's Government to introduce at an early date proper legislation for the effectual control of the said traffic."

Mr. Gadd moved as an amendment:—

"That it be remitted to the local associations to consider what steps may be taken in the interests of public health to restrict and control the rapidly increasing traffic in secret preparations recommended by public advertisements as medicinal remedies, and to report."

This was carried unanimously. The matter is evidently not to be allowed to rest, for in reference to Mr. Cofman's paper a meeting is to be arranged in October between the General Purposes Committee of the Pharmaceutical Society and a select committee of the Western Chemists' Association of London, of which we understand Mr. Cofman will be a member. We trust that this conference will result in a strong case being made out for early legislation in the matter, although it is hardly likely that the statutory control of the sale of quack medicines will be readily obtained. The public dearly love mysterious remedies, but if they were informed by the label on every bottle of, let us say, the "Happy Home Drink Cure," that each dose contained a grain of potassium bromide and a few grains of milk sugar, they might hesitate in expending half-a-crown on a half-pint bottle.

## IMPOTENCE IN THE MALE.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers refer me to any literature on the subject of impotence in the male? I wish to know what to do in a case. It appears to me that, judging from what I have read, very little is known for certain on the subject.

I am, Sirs, yours faithfully,

August 26th, 1907. LITERA (M.B.).

## THE POLLUTION OF FOOD.

A CORRESPONDENT writes:—"Entering a local post office, which is also a baker's shop, this morning I saw a number of females arranging cakes and pastry on trays. A girl of about 14 was sorting out a kind of cheese cake and during the process sneezed twice. The result of this physiological process on the cakes may be easily imagined, but all traces of the accident were speedily removed by the girl who carefully smoothed each cake with her fingers. This was done in the presence of the wife of the proprietor without a word of reproof. The proprietor of the shop was until recently a borough councillor." Practices more disgusting than this no doubt take place every day, and it is difficult to see how those who prepare and sell food can be made to realise their moral responsibility in the matter. While, however, such things take place tradesmen must not complain if they find irksome the laws which are made from time to time in the interests of the health of the public.

## AN EXCEPTIONAL INDIAN DUST STORM.

In India dust storms, known locally as "devils," are of common occurrence at certain seasons of the year, but fortunately these portentously named meteorological phenomena are seldom severe enough to be more than merely unpleasant. It is true that they leave behind them thick layers of an almost impalpable powder, for Indian doors and windows do not err on the side of tightness, but most old residents are satisfied that they serve a useful purpose by clearing the impurities out of the air, which certainly always does feel lighter and more refreshing after the miniature whirlwinds have spent their force. In *Indian Engineering* of June 29th, however, a dust storm is described which, but for a fortunate chance, might have been the cause of a serious disaster. On the preceding Sunday, when a train from Lucknow was approaching Sandila at about 4 o'clock in the evening, the passengers became aware of an unusual atmospheric disturbance which was moving gradually south-eastward and presented the appearance of a vast range of mountains except that its colour, a greyish brown, and the convolutions of the attendant clouds revealed its true character. The spectacle is described as magnificent, and though instruments were not at hand in the train to test the speed and momentum of the wind the violent swaying of trees in all directions and the snapping of their branches bore witness to its strength. The vast mass of dust completely obscured the landscape on both sides of the line, while its depth must also have been very great for fully ten minutes were occupied in traversing it, the darkness meanwhile being as dense as though the train were passing through a long tunnel. "It was a happy accident," continues the writer in our contemporary, "that a very heavily loaded train, well filled also with passengers, happened to be travelling north-west at the time and so caught the furious storm fore and aft and not broadside on, since it is by no means improbable that had the wind met the long chain of carriages on its flank while in motion it would have blown the train over and caused no little damage, attended most likely also with loss of life. It will be interesting to note whether this altogether unusual phenomenon found any scientific observers equipped for those further details which make occurrences instructive."

## MISLEADING PRESS CUTTINGS.

In the "Looking Back" column in The Lancet of August 24th, 1907, p. 536, we published a quotation from The Lancet of August 22nd, 1829, under the heading of "Adulteration of Bread" in which a charge against bakers was made of using large quantities of alum in the preparation of bread. The publication of this quotation drew from the editor of the *Baker and Confectioner* a protest of considerable warmth, but subsequently we received from him a note explaining that his letter was based on a newspaper cutting of the article in question sent by a press-cutting agency which had deprived it of the heading bearing the ancient date. The editor of the *Baker's Record* fell into the same mistake for evidently the same reason, and committed to print a long leading article on August 30th founded on the assumption that this quotation from The Lancet of 78 years ago appeared as an editorial statement in The Lancet of August 24th, 1907. Press-cutting agencies should be more careful, but may we not suggest that editors have some responsibilities towards each other? The editor of the *Baker's Record* might, we think, have consulted our columns before jumping to the conclusion that our knowledge of baking was so rusty.

## A HINT TO INTENDING SHIP SURGEONS.

*To the Editors of* The Lancet.

Sirs,—In September the emigration season to South America commences and several of the Governments there have passed stringent vaccination laws for immigrants. Extra work without any extra pay has often been demanded from ship surgeons under these laws and therefore careful inquiries should be made of the shipping companies before signing an engagement. The Employers' Liability Act has been applied to seamen since July 1st and it is advisable to inquire about this also.

I am, Sirs, yours faithfully,

August 30th, 1907. Bitten.

## URANALYSIS.

In our issue of July 13th a correspondent asked for a simple method of approximate quantitative estimation in urine of phosphates and inorganic and organic sulphates Messrs. Andrus and Andrus of Holborn Viaduct, London, have sent us a small pamphlet intended to include in its scope the technique of the common clinical tests for urine as ordinarily required by the medical practitioner. The authors state that no effort has been made to include the rare or complicated tests, but we do not consider that the pamphlet gives any perfect method of estimating either phosphates or sulphates. By the instruction in the pamphlet it would only be possible to determine whether these are in diminution or in excess of the normal.

## SILVER ACETATE.

In a recent number of the *Münchener Medicinische Wochenschrift* silver acetate is recommended as a valuable substitute for silver nitrate in purulent ophthalmia of children. This salt is soluble in about 50 parts of water and cannot exert a caustic action owing to its extreme dilution. Silver nitrate, on the other hand, is very soluble in water and even when applied in a 1 per cent. solution frequently produces caustic effects. Since silver salts are acted upon by the acids in the tears, with liberation of the acid associated with the silver in the salt, the choice of a silver salt is of importance. On this account silver acetate is preferable to silver nitrate, the acetic acid being a mild acid compared with nitric acid, which may produce unpleasant consequences. In practice a 1 per cent. solution of silver acetate is dropped into the eye, which is then bathed with a physiological salt solution. Silver acetate is also recommended in gynæcological practice and is said to be less harmful and more certain than the nitrat

◆

*Zagloba.*—There is an infinity of books upon first aid and of these Mr. S. Osborn's, which is now in its fourth edition, is probably the best known. We give our correspondent the titles of two others which have recently appeared. "First Aid," by R. J. Collie and C. F. Wightman. London: Geo. Gill and Sons. 1903. Price 6*d.* "First Aid to the Injured and Sick," by F. J. Warwick and A. C. Tunstall. Bristol: John Wright; London: Simpkin Marshall. Fourth edition. 1906. A first aid class must be taught elementary anatomy and a certain amount of physiology. The former is best taught with the aid of a member of the class as a model, while the positions of the organs can be shown on a dead rabbit. We do not think that diagrams are of much value. For further information our correspondent had better write to the St. John Ambulance Association, St. John's Gate, Clerkenwell, E.C.

*Workhouse Inquest.*—The resident medical officer of a workhouse is not considered as entitled to a fee for giving evidence or for making a post-mortem examination even at the direction of the coroner for an inquest held upon the body of a deceased inmate. The Coroners Act of 1887 in Section 22 provides that no fee or remuneration shall be paid where an inquest is held on the body of a person who has died in the county or other asylum or in a public hospital, infirmary, or other institution, to the medical practitioner whose duty it may have been to attend the deceased person as a medical officer of such institution.

*Overworked.*—In the absence of any specific clause in the agreement between principal and assistant the assistant may be supposed to be required to give his whole time to the work. Of course, most principals arrange with their assistants that the latter shall have some free time, if only because no man can work properly without intervals of relaxation. In such a life as that of a busy general practitioner it is not always possible to say that these intervals shall fall on stated days or at stated hours.

*Typhoo-Tipps.*—The tea contained 6·30 per cent. of tannin as agains 10·00 per cent., the average amount found in ordinary teas. The tannin proved to be tannic acid and not gallo-tannic acid, which no doubt appears in the coarse part of the leaf.

*E. P.*—Unfortunately, there is no other plan for our correspondent's patient than to go to a chest hospital having a sanatorium, where, if the case is suitable, she may be sent.

*Anglo-Indian.*—Our correspondent has not enclosed her name.

Communications not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (9th).**—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), St. George's (2 p.m.), St. Mary's (2.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), Chelsea (2 p.m.), Samaritan (Gynæcological, by Physicians, 2 p.m.), Soho-square (2 p.m.), City Orthopædic (4 p.m.), Gt. Northern Central (2.30 p.m.), West London (2.30 p.m.), London Throat (9.30 a.m.), Royal Free (2 p.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (3 p.m.), St. Mark's (2.30 p.m.).

**TUESDAY (10th).**—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), Guy's (1.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), West London (2.30 p.m.), University College (2 p.m.), St. George's (1 p.m.), St. Mary's (1 p.m.), St. Mark's (2.30 p.m.), Cancer (2 p.m.), Metropolitan (2.30 p.m.), London Throat (9.30 a.m.), Samaritan (9.30 a.m. and 2.30 p.m.), Throat, Golden-square (9.30 a.m.), Soho-square (2 p.m.), Chelsea (2 p.m.), Central London Throat and Ear (2 p.m.), Children, Gt. Ormond-street (2 p.m., Ophthalmic, 2.15 p.m.), Tottenham (2.30 p.m.).

**WEDNESDAY (11th).**—St. Bartholomew's (1.30 p.m.), University College (2 p.m.), Royal Free (2 p.m.), Middlesex (1.30 p.m.), Charing Cross (3 p.m.), St. Thomas's (2 p.m.), London (2 p.m.), King's College (2 p.m.), St. George's (Ophthalmic, 1 p.m.), St. Mary's (2 p.m.), National Orthopædic (10 a.m.), St. Peter's (2 p.m.), Samaritan (9.30 a.m. and 2.30 p.m.), Gt. Northern Central (2.30 p.m.), Westminster (2 p.m.), Metropolitan (2.30 p.m.), London Throat (9.30 a.m.), Cancer (2 p.m.), Throat, Golden-square (9.30 a.m.), Guy's (1.30 p.m.), Royal Ear (2 p.m.), Royal Orthopædic (3 p.m.), Children, Gt. Ormond-street (9.30 a.m., Dental, 2 p.m.), Tottenham (Ophthalmic, 2.30 p.m.).

**THURSDAY** (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (14th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &C.

**MONDAY** (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—College re-opens.

**TUESDAY** (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Diseases of the Skin.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. C. O. Hawthorne: Clinique. (Medical.)

**WEDNESDAY** (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Jackson Clarke: Clinique. (Surgical.)

**THURSDAY** (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

**FRIDAY** (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Disseases of the Skin.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Bishop Harman: Clinique. (Eye.)

**SATURDAY** (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Diseases of the Eye. 2.30 P.M.: Operations.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Sept. 5th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 30 | 30·12 | N.E. | ... | 95 | 68 | 56 | 56 | 59 | Fine |
| ,, 31 | 30·00 | W. | ... | 108 | 68 | 58 | 59 | 60 | Fine |
| Sept. 1 | 30·10 | N. | ... | 112 | 70 | 53 | 53 | 57 | Fine |
| ,, 2 | 29·78 | S.W. | ... | 105 | 64 | 53 | 54 | 57 | Cloudy |
| ,, 3 | 29 69 | W. | 0·16 | 85 | 60 | 50 | 49 | 54 | Fine |
| ,, 4 | 29·92 | N. | 0·09 | 94 | 63 | 48 | 47 | 50 | Cloudy |
| ,, 5 | 29·84 | WSW | 0·16 | 113 | 69 | 50 | 61 | 63 | Cloudy |

**During the week marked copies of the following newspapers have been received:**—*Daily Dispatch, Manchester City News, Grantham Journal, Liverpool Post, Yorkshire Post, Reading Mercury, East London Observer, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Dr. E. Archer Brown, Lond.; Mr. C. E. Abbott, Roche; Messrs. Allen and Hanburys, Lond.; Messrs. R. Anderson and Co., Lond.; Abbott Alkaloidal Co., Chicago; Messrs. C. Ash, Sons and Co., Lond.; An Anxious Enquirer; Australia; *American Journal of Surgery*, New York, Managing Editor of.

**B.**—Mr. Alfred Bishop, Southend-on-Sea; Mr. A. Carnarvon Brown, Lond.; Major K. Bruce Barnett, R.A.M.C., Peking; Mr. A. A. Bradburne, Southport; Dr. H. Burrows, Southsea; Dr. Charles A. Bucklin, Glasgow; Messrs. J. Baker and Son, Clifton; Messrs. Boulton and Paul, Norwich.

**C.**—Mr. T. Carwardine, Clifton; Messrs. Cassell and Co., Lond.; Messrs. J. and A. Churchill, Lond.; Mr. Thomas P. Codd, Dublin; Mr. F. W. Clarke, Chorlton-cum-Hardy; Charing Cross Hospital Medical School, Dean of.

**D.**—Dr. E. H Douty, Mundesley.

**F.**—Dr. A. W. Fuller, Lond.; Messrs. Fannin and Co., Dublin; F.R.C.S., Lond.; *Food Reformers Year Book*, Bournemouth, Editor of.

**G.**—Great Northern Central Hospital, Lond., Secretary of; Great Yarmouth Hospital, Secretary of; Mr. H. R. Gawen Gogay, Southchurch Beach; Miss Sarah Gray, Nottingham; G. H. W.

**H.**—Dr. Alfred Harris, Newcastle-upon-Tyne; Mr. R. Holymann, Calcutta; Messrs. J. Haddon and Co., Lond.

**J.**—Dr. Jones, Penygroes; *Journal of the R A.M.C.*, Lond., Editor of; Jersey General Dispensary, Secretary of; J. E. E.

**K.**—Dr. R. G. Kirton, Cairo; Messrs. Knight, Frank and Rutley, Lond.; Messrs. R. A. Knight and Co., Lond.

**L.**—Dr. P. W. Latham, Cambridge; Mr. Cecil H. Leaf, Lond.; Mr. H. K. Lewis, Lond.; Loughborough and District General Hospital, Secretary of; Messrs. Lee and Nightingale, Liverpool; London (Royal Free Hospital) School of Medicine for Women, Secretary of; London Hospital Medical College, Warden's Clerk of.

**M.**—Dr. J. C. McWalter, Dublin; Mr. R. D. Mothersole, Bolton; Dr. G. F. McCleary, Lond.; Dr. C. R. Marshall, Dundee; Mr. J. M. Morgan, Ennis; Mr. R. McCowen, Tralee; Montgomery County Council, Welshpool, Clerk to the; Medicus, Lond.; *Milling*, Liverpool, Editor of; Maltine Manufacturing Co., Lond.

**N.**—Newcastle-upon-Tyne Corporation, Clerk to the; Messrs. Neyroud and Son, Lond.; Mr. L. Noon, Lond.; The Newspaper Society, Lond., Secretary of; Mr. H. Needes, Lond., Mr. J. C. Needes, Lond.

**O.**—Mr. J. Offord, Lond.; Mr. J. E. O'Sullivan, Liverpool.

**P.**—Mr. Norman Pearson, Lond.; Mr. Young J. Pentland, Edinburgh; Mr. P. Phillips, Oka, W. Africa; Messrs. Parke, Davis and Co., Lond.; Messrs. Peacock and Hadley, Lond.

**Q.**—Queen's Hospital, Birmingham, Secretary of.

**R.**—Dr. A. E. Russell, Lond.; Dr. R. D. Rudolf, Toronto; Dr. Paul Roethlisberger, Baden; Royal Society, Lond., Secretary of; Mr. Gilbert J. Reed, Bristol; Mr. A. Roche, Dublin; Messrs. E. J. Reid and Co., Lond.; Messrs. H. Powell Rees, Lond.; Ramsgate, Town Clerk of; Messrs. Reynolds and Branson, Leeds.

**S.**—Mr. E. T. Smith, Deganwy; Dr. E. Schloesser, Baden Baden; Messrs. W. H. Smith and Son, Lond.; Messrs. W. H. Smith and Son, Colwyn Bay; *Shrewsbury Chronicle*, Proprietors of, Sigma; Sheffield University, Registrar of; Messrs. J. Smith and Co., Lond.; Messrs. Spottiswoode, Dixon and Hunting, Lond.; Scholastic, Clerical, &c., Association, Lond.

**T.**—Miss M. C. Trotter, Aberfoyle; Mr. Algernon Taylor, Kingston-on-Thames; T.S.; Taunton and Somerset Hospital, Secretary of; Mr. H. B. Tause, Nottingham.

**V.**—Mr. Dennis Vinrace, Lond.; Messrs. J. W. Vickers and Co., Lond.

**W.**—Mr. Andrew Wylie, Lond.; Dr. O. K. Williamson, Lond.; Mr. S. H. Webber, Teignmouth; Mr. J. Williams, Bradford; Wand Manufacturing Co., Leicester; Wimborne Union, Clerk to the; Messrs. R. F. White and Son, Lond.; Messrs. H. Wilson and Son, Lond.; W. C. G.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Mr. E. Ash, Lond.; Aymard Patent Milk Sterilizer Co., Ipswich; Apollinaris Co., Lond.; Anglo-American Pharmaceutical Co., Croydon, Manager of; A. O.

**B.**—Dr. L. H. Bennett, Paignton; Mr. C. R. W. Ball, Hunstanton; Mr. C. Berthier, Paris; Beckett Hospital, Barnsley, Hon. Secretary of; Birmingham & Midland Hospital for Skin, &c, Secretary of; Messrs. Bates, Hendy and Co., Lond.

**C.**—Miss A. Cave, St. Margaret's-at-Cliffe; Cheltenham, Borough Accountant of; Messrs. Condy and Mitchell, Lond.; C. H. T.; Messrs. W. and R. Chambers, Edinburgh; C. H. P.; C. E. T.; Messrs. Callard and Co., Lond.; Messrs. A. Cohen and Co., Lond.

**D.**—Dr. J. H. Dauber, Lond.; Dr. W. T. Dougal, Pittenweem; Dr. Dawson, Lond.; Mrs. Daubeney, Cirencester; Miss Daniel, Reading; Dispenser, Newcastle-on-Tyne.

**E.**—E. D.; Messrs. Eason and Son, Dublin; E. M. C.; E. H. L.; Mrs. E.

**F.**—Mr. F. T. Fagge, Wigan; F. A. F.

**G.**—Dr. H. J. Godwin, Winchester; Mr. R. N. Geach, Charlbury; Mr. H. Gunnell, Grosmont; Mr. E. Gooch, Lond.; Glasgow Royal Infirmary, Secretary of; Great Yarmouth Hospital, Secretary of; G. P.; Gravesend Hospital, Secretary of.

**H.**—Dr. J. Hunter, Invercargill, N.Z; Messrs. Horncastles, Lond.; Messrs. Hooper and Co., Lond.

**I.**—Dr. E. H. Irwin, Castleblayney; International Plasmon, Lond.

**J.**—Dr. Wm. M. Jackson, Driffield; Mr. R. Jones, Lond.; J. R. W.; J. H. L.; J. H.; J. T.; J. M. G.

**K.**—Mr. R. V. Khedkar, Lond.; Mr. E. B. Kelley, Birmingham; Messrs. Knoll and Co., Lond.

**L.**—Dr. R. A. Lambert, Swindon; Dr. T. Laird, Manchester; Mr. R. T. Lang, Lond.; Locum, Holmwood; Locum, Llandudno; Locum, Lond.

**M.**—Lieutenant-Colonel R. L. R. MacLeod, R.A.M.C., Quetta; Dr. W. M. Muat, Wei-hai-Wei; Dr. J. E. Mitchell, Canton; Dr. W. Murrell, Lond.; Messrs. Fred Mundy, Gilbert and Co., Birmingham; Medicus, Lond.; Mr. W. E. Miles, Lond.; Mr. J. More, Kettering; Mr. A. Mudie, Lond.: Mr. A. H. McCandlish, New Ferry; Mr. H. F. Matthews, Nichols Nymet; Manchester Guardians, Clerk to the; Manchester Corporation Treasurer to the; Messrs. Moline and Co., Lond.; Mr. J. M. Mangan, Ennis.

**N.**—Mr. L. C. Nelson, Tubbermore; Mr. J. C. A. Norman, Broadstone; National Bank of India, Karachi, Manager of; Northern Medical Association, Glasgow.

**O.**—Mr. C. Okell, Douglas.

**P.**—Plymouth Borough Asylum, Blackadon, Clerk to the.

**R.**—Dr. H. M. Richards, Croydon; Mr. W. Russell, Monks Eleigh; Mr. C. A. Ryde, Brussels; Mr. C. Rutherford, South Shields; Mr. J. M. Randle, Ruan Minor; Royal Victoria Infirmary, Newcastle-upon-Tyne.

**S.**—Captain Norman Scott, I.M.S., Karachi; Messrs. Stone and Son, Lond.; S. D. S.

**T.**—Mr. H. Towers, Lond.; Mr. A. W. Taylor, Acton; Mr. J. Thin, Edinburgh; Mr. J. B. L. Thomas, Pontypridd; Messrs. Toler Bros., Lond.; Messrs. R. Tidey and Son, Lond.; T. J.

**V.**—Mr. C. Veitch, Edinburgh; Messrs. G. Van Abbott and Sons, Lond.

**W.**—Mr. J. N. White, Workington; Mr. R. Walker, Aberdeen; Dr. P. D'Erf Wheeler, Jerusalem; Dr. W. H. O. Woods, Bridport; Mr. W. A. Wharram, Leeds; Messrs. Willows, Francis, Butler and Thompson, Lond.; W., Southsea; W. D.; Wensleydale Sanatorium, Aysgarth, Medical Superintendent of.

**X.**—X. W., Lond.

**EVERY FRIDAY.**

# THE LANCET.

**PRICE SEVENPENCE.**

## SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | |
|---|---|
| One Year ... ... ... | £1 12 6 |
| Six Months ... ... ... | 0 16 3 |
| Three Months ... ... | 0 8 2 |

| TO THE COLONIES AND ABROAD. | |
|---|---|
| One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

## ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s*. 6*d*.; per additional 8 words, 6*d*.

Quarter Page, £1 10*s*. Half a Page, £2 15*s*. An Entire Page, £5 5*s*.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheque and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France.—J. ASTIER, 31, Rue Bapts, Asnières, Paris.

# A Lecture

ON

# THE COÖRDINATION OF POST-MORTEM WORK AND CLINICAL OBSERVATION.

*Delivered at the Post-Graduate Course, Leeds Public Dispensary, on June 14th, 1907,*

By E. F. TREVELYAN, M.D., B.Sc. Lond., F.R.C.P. Lond.,

PHYSICIAN TO THE LEEDS PUBLIC DISPENSARY; LATE PROFESSOR OF PATHOLOGY, LATE YORKSHIRE COLLEGE (VICTORIA UNIVERSITY); PHYSICIAN (WITH CHARGE OF OUT-PATIENTS) TO THE LEEDS GENERAL INFIRMARY.

Gentlemen,—A sound clinical knowledge of disease is impossible without a sufficient knowledge of the pathology of disease. Therefore the importance of bringing into close relationship the pathological changes found in the post-mortem room and our observations of disease made during life is obvious. At a time when the great advances in science have made it necessary that the teachers of pathology in our medical schools should give their whole time and attention to their subject it becomes of greater importance than ever that the clinical element should be kept constantly in view in the post-mortem room. For this reason I think it would be a misfortune if the post-mortem room were handed over to the pathological specialist as it is eminently the ground which should be occupied by those in close touch with clinical work, for the clinician learns by daily experience the needs and wants of those training to be clinicians. Of course, the aid of the bacteriologist, morbid histologist, and pathological chemist will always be required to supplement and confirm the post-mortem room findings. Such reports when received can be read out on a subsequent occasion and the case recapitulated and reviewed in the light of any additional information obtained. Naked-eye morbid anatomy as such can be learnt in the pathological museum now furnished with specimens which retain more or less perfectly their original colour, but morbid anatomy in relation to clinical work can only be satisfactorily learnt in the post-mortem room where the whole clinical and pathological aspects of disease can be coördinated. I decline to make a post-mortem examination where there are no clinical notes available, as I look upon it as almost waste of time.

Some 15 years' experience of post-mortem work has led me to adopt the following method of procedure. Before the post-mortem examination is made the clinical report is abstracted and the abstract is written on the blackboard in the post-mortem room. At the commencement of the examination this abstract is read out and the morbid changes which it is expected to find are outlined. The various morbid changes are then demonstrated and this is followed by a commentary on the pathological findings. Finally the symptoms are compared step by step with the pathological changes present. I need not say that the clinical diagnosis made during life is always regarded as the best that could be made in the circumstances, so as to permit of the freest possible discussion of details both clinical and pathological. Everybody with a tithe of clinical experience appreciates to the full the diagnostic difficulties that may arise in any case. Finally, it is almost needless to add that each post-mortem examination should be thoroughly made—that is, every organ examined, and for this reason it seems to me impossible satisfactorily to conduct more than one or at most two examinations at a time. In this demonstration I shall follow the order indicated above. Thus I shall first give a few clinical notes of the case. I shall then describe the specimens and make some pathological comments upon them. Finally, I shall endeavour to coördinate the morbid changes found after death with the symptoms present during life.

## I.—Syphilis of the Trachea and Bronchi; Stenosis of a Bronchus.

The specimen came from a woman, aged 32 years, with an enlarged thyroid. A month before death when I saw her she had inspiratory and expiratory stridor, and diminished movement of the right side of the chest with a deficient air entry. Nothing abnormal was seen in the larynx. A diagnosis was made of pressure on the right bronchus, probably due to malignant disease. The specimen shows one large and several small ulcers in the lowest part of the trachea. There is also ulceration in the uppermost part of the left bronchus. The right bronchus is stenosed for about half an inch at its origin where it will only admit a small quill. The stenosis appears to be due to a sclero-gummatous process in the submucosa as no distinct evidence of past ulceration is visible. It does not therefore represent a more advanced stage of the ulceration seen in the left bronchus. The left lung was considerably larger in size that the right owing to hypertrophy. The left lung did not present any abnormal appearances. No evidence of syphilis was found elsewhere in the body.

Syphilis of the trachea and bronchus is rare. I have no recollection of meeting it before in the post-mortem room. Unless in association with laryngeal syphilis its site of predilection is in the lowest part of the trachea and upper part of the bronchi. If the disease extends to the bronchi it usually affects both of them. The reason of this localisation is unknown to me. Tuberculosis more commonly gives rise to ulceration of the trachea than syphilis and is found almost exclusively in association with laryngeal tuberculosis. There was no evidence of tuberculosis in the above case nor did the ulcers themselves appear tuberculous. The morbid changes met with here explain all the symptoms and signs present during life—the stridor, deficient air entry, &c. Perhaps I ought to have made a more exact diagnosis during life, and no doubt it would have been wise to have given iodides in a case where the nature of the disease was involved in some doubt.

## II.—Caseous Pneumonia; Tuberculous Laryngitis.

The specimens were obtained from a man, aged 25 years, who also had spinal caries and paraplegia (see Specimen VIII.). The pulmonary disease had lasted three months and was attended with cough and sputum, pyrexia, and some hoarseness. There were signs of consolidation at the right apex.

The right lung is solid almost throughout but the lesion is more marked towards the base. A lobular distribution is clearly evident in parts and some tubercles are present in the pleura. Scattered aggregated tubercles are seen in the opposite lung. The larynx shows a symmetrical ulcer on the posterior part of both cords and there is early but distinct pachyderma affecting the posterior laryngeal wall.

Caseous pneumonia, or broncho-pneumonia, represents one of the acute forms of pulmonary tuberculosis. Its distribution suggests very strongly an aerial infection. In this case there was no older lesion from which tuberculous products could have been aspirated as may happen in the more acute basic infection of the lung in some cases of apical pulmonary tuberculosis. There was, however, a focus of disease in the immediate neighbourhood—viz., in the tenth dorsal vertebra, and it is possible that the infection spread from this focus. It has been suggested, and I have seen at least one instance which seemed to bear out the view, that the lung may be infected from caseous bronchial glands in its neighbourhood without the latter directly communicating with the air passages. An interesting question might be raised as to the respective age of the laryngeal and pulmonary lesions in this case. The laryngeal disease certainly has the appearance of being the older but I have never yet seen a case of unmistakably primary laryngeal tuberculosis.

The symptoms are sufficiently explained by the morbid anatomy found, though here, as in many cases, the amount of disease present was much greater than might be anticipated from the signs. The laryngeal lesion produced hoarseness and if there had been any difficulty in the diagnosis of the nature of the pulmonary disease the examination of the larynx would have cleared it up. This bears out the statement that in cases of doubtful pulmonary tuberculosis it is well always to examine the larynx.

## III.—Marked Atheroma of the Aorta, Coronary Arteries, and Splenic Artery; Great Hypertrophy of the Heart without Valvular Disease or Renal Disease.

The patient, a man, aged 50 years, had rheumatism when 24 years of age. He had presented steadily increasing symptoms of illness for the past seven years. Œdema of the legs appeared in August, 1906, and he gave up work in November. On admission in May, 1907, he was waterlogged. The apex beat was displaced outwards but there

No. 4385.

was no murmur. His pulse was tense but there was no albumin in the urine. The heart was greatly enlarged, weighing 30 ounces. The valves were competent to the hydrostatic test. The kidneys were quite competent organs. There was advanced atheroma of the aorta, also of the coronary arteries and of the splenic artery. The left radial artery at the wrist appeared quite healthy. The liver showed marked nutmeg change. There were infarcts in both lungs.

The chief pathological feature of this case was the considerable cardiac hypertrophy due to vascular disease, the arterial disease being of the nature of atheroma (nodular arterio-sclerosis) of the aorta and some of the medium-sized arteries. A complete examination of the arterial system was, unfortunately, not made, but I think the marked arterial disease was sufficient to explain the cardiac hypertrophy. It has been stated that atheroma of the mesenteric area should be a very efficient cause of cardiac hypertrophy, but, unfortunately, only the splenic artery was examined in this case. The anterior coronary artery was much affected with typical atheroma and the left ventricle was markedly hypertrophied. The right coronary artery was similarly diseased but only in its proximal part. I could not detect with the naked eye any disease whatever in the cardiac muscle. The mode of production of the engorged pulmonary circulation, of the nutmeg liver, and of the dropsy is difficult of explanation unless there was functional regurgitation during life, yet neither the post-mortem appearances nor the clinical signs give any real ground for such an assumption. The morbid appearances otherwise corresponded well to the symptoms present during life. A long illness steadily progressing to a fatal termination is explained by a slowly progressing arterial disease.

### IV.—COLLOID CARCINOMA OF THE STOMACH.

This specimen came from a woman, aged 40 years, who had suffered from dyspepsia (pain after food relieved by vomiting, &c.) and wasting for six months and who presented anomalous nervous symptoms during the last few days of life. Death occurred in coma. The specimen shows a large mass of colloid carcinoma surrounding the pylorus and extending along the lesser curvature. There were no secondary deposits. The kidneys were healthy and the brain showed no abnormality.

Colloid carcinoma of the stomach is no doubt a degenerative form of other growths such as columnar carcinoma. I have rarely met with this form of growth of the stomach in the post-mortem room. There was no obvious explanation of the nervous symptoms present, so I suppose that they must be attributed to an intoxication produced by the new growth.

### V.—CALCULOUS DISEASE OF THE KIDNEY; ORBITAL AND FRONTAL SINUS SUPPURATION; LIMITED SUPPURATIVE MENINGITIS.

A boy, aged 14 years, died from an acute illness lasting about 12 days. It began with a swelling about the left eye and then suppuration occurred in the orbit. The pus was let out from the orbit and also from the frontal sinuses. Four days before death vomiting took place, then optic neuritis, and twitching of the left side of the face and convulsions. Death occurred in coma. There was a suppurative meningitis limited to the right hemisphere and having its greatest intensity over the frontal pole and about the Sylvian fissure. The base of the brain showed no change. Some pus was found in the orbit and also in the frontal sinuses. The ethmoid cells were healthy. The right middle ear contained pus. The left kidney was small and the right was twice as large as the left. The pelvis and ureters of both kidneys were dilated and the bladder hypertrophied. (There was no stricture of the urethra.) There was a stone in the left kidney and a consequent destructive nephritis. The right kidney was hypertrophied but showed a slight degree of hydronephrosis and the microscope revealed some disease of the renal substance itself. Some pus was found in the pelvis of this kidney. The surface of the stone was smooth and its colour dark brown. It was very hard. On section it showed several concentric layers. It was thought to be a uric acid calculus but it did not give the murexide test. It was not a xanthin nor yet a calcium oxalate calculus. It contained a large amount of phosphate of sodium and nothing else of importance has as yet been found in it.

The exact path by which the meninges were infected was not evident unless it took place from the right frontal sinus yet there was no obvious disease in the right orbital plate; indeed, the intensity of the disease was situated on the left side where the orbital plate was thinned and discoloured. I did not look upon the suppurative lesion in the ear as at all a probable cause of the meningitis.

The urinary disease was an unexpected finding, the acute illness having obscured its manifestations. These lesions were assigned to calculous disease. Some time ago the left kidney had become more or less disorganised as a result of it and the right kidney hypertrophied in consequence, but this kidney did not escape from the effects of the calculous disease. This patient must have suffered at some time from cystitis, otherwise the thickness of the bladder walls could not be explained.

### VI.—TERMINAL TUBERCULOUS MENINGITIS; PULMONARY AND GENITAL TUBERCULOSIS.

A man, aged 24 years, was in a sanatorium under my care five years previously. He then presented signs of a limited lesion at the right apex and the disease had already lasted about a year. He was discharged greatly improved. He was admitted into the Leeds Infirmary for a tuberculous epididymitis of six weeks' standing and then the meningitis supervened and rapidly proved fatal.

The brain showed the characteristic lesions of tuberculous meningitis. The exudative element preponderated, but minute tubercles were visible. Limited tuberculous lesions were found at the apices of both lungs of a quite chronic form with excavation. The rest of the lungs were healthy with the exception of one or two small recent tuberculous foci. The connexion between genital tuberculosis and tuberculous meningitis has been emphasised by some writers. It occurred only twice in 110 cases of tuberculous meningitis in the records in the Leeds Infirmary, but the vesiculæ seminales were not by any means always examined. Tuberculous meningitis is a distinctly rare complication in my experience of pulmonary tuberculosis. This terminal meningitis has usually been of much shorter duration than the ordinary typical case in the child and its symptoms have sometimes been considerably masked. The symptoms of the case were readily explained by the morbid lesions found.

### VII.—APOPLECTIC CYSTS OF THE BRAIN.

(*a*) *A cyst occupying the region of the right lenticulate nucleus.*—This specimen came from a patient, aged 32 years, who had diphtheria at the age of seven years, followed in three weeks by a left hemiplegia. This hemiplegia was said to vary in degree. The cyst (1 inch by $\frac{1}{2}$ inch by $\frac{1}{4}$ inch) was lined by a delicate cyst wall and contained a clear fluid. There was no pigment about it. The convolutions and also the vessels of the left hemisphere were of smaller size than on the right side. There was old healed tuberculosis at both apices and some recent tuberculosis in other parts of the lungs. It is suggested that a blocking of an artery occurred as the result of embolism. This was followed by necrosis and afterwards a cyst formed. Embolism has been known to occur after diphtheria. I have seen at least one other example of a lesion in the neighbourhood of the internal capsule (but *not* involving it) produce a hemiplegia. In a recent instance occurring in a girl, aged 14 years, who died in advanced pulmonary tuberculosis, the softening was limited to the middle third of the lenticulate nucleus. An artery at the base of the brain was blocked. There were marked aphasia, paralysis of the right arm, and paresis of the right leg. Possibly the variation in the degree of the hemiplegia may have been due to variation in the fluid contents of the cyst.

(*b*) *A cyst situated in the right half of the pons.*—This came from a woman, aged 40 years, who died as a result of burns. It was stated that she had an apoplectic seizure some two or three years before her death but it left no permanent paralysis. The cyst measures 7 millimetres by 5 millimetres by $4\frac{1}{2}$ millimetres and is multiloculated. There is no cyst wall. The basilar artery is extensively diseased and the cyst is believed to be the result of occlusion of a small branch of this vessel. It produced no definite symptoms during life beyond what is stated above.

### VIII.—VERTEBRAL CARIES; PARAPLEGIA; CYSTITIS; PYELONEPHRITIS; CASEOUS PNEUMONIA; TUBERCULOUS LARYNGITIS (see Specimen II.).

A man, aged 25 years, had constant pain in his back for about 21 weeks before his death and for the last 18 weeks he was unable to work. About five weeks before death he had difficulty in micturition one evening and the next day he lost the power in his legs. On admission besides the pulmonary symptoms he had complete paraplegia. There was tactile anæsthesia up to the umbilicus with hyperæsthesia above it. He had retention of urine with overflow. Defæcation was involuntary and unconscious. The cremasteric reflex was present but the knee-jerks were absent. Babinski's sign (extensor response) was present. The urine was ammoniacal. There was much wasting of the limbs. The tenth dorsal vertebra was largely destroyed and a sequestrum was present in it. External pachymeningitis was present opposite to the diseased vertebra and it extended down for some three inches. The pia-arachnoid appeared quite healthy to the naked eye. Somewhat lower down there was a distinct softening of the substance of the cord extending over about an inch, but even here the markings of the grey and white matter could still be made out. A microscopical examination of the cord has not yet been made but the cord, hardened in formol-bichromate solution, shows the following changes when examined by the naked eye and a hand lens.

The lumbar, sacral, and coccygeal regions appear to be healthy with the exception of the lateral columns where there is a slight discolouration indicating some degeneration. In the lowest dorsal region no disease can be detected but a little higher up the markings become very indistinct and are finally not to be discerned. This extends for about three-quarters of an inch. Above this an ascending degeneration is distinctly visible and it gains in extent as the upper part of the dorsal and the cervical cords are reached.

In this case it is obvious that the disease commenced in the body of the tenth dorsal vertebra. It produced an external pachymeningitis. The disease spread, as it often does, through the pia-arachnoid without producing any very obvious changes in it, and the spinal cord was ultimately involved, perhaps owing to the action of toxins upon its structure.

This rough naked-eye examination shows that the motor and sensory paralysis was due to actual disease within the spinal cord itself. It would explain the presence of the cremasteric reflex (L 1 and 2 intact) and the present but altered plantar reflex (L 5 to S 2 intact together with degeneration in the lateral columns), but it does not account for the disturbance of the vesical and rectal functions (S 4 and S 5 intact). No doubt the microscopical examination will explain what the naked eye fails to detect.

In conclusion I hope that I have succeeded in emphasising the importance of studying morbid anatomy in close connexion with the signs and symptoms which it has produced during life. In this way alone can the full advantage be taken of the abundant opportunities afforded by the post-mortem room to obtain a more intimate knowledge of disease. I have to thank Dr. T. Churton, Dr. T. Wardrop Griffith, Mr. H. Littlewood, Mr. B. G. A. Moynihan, and Mr. G. Constable Hayes for kind permission to use their clinical notes.

# An Address

ON

# INHALATION.

*Delivered before the Midland Medical Society.*

By ARTHUR FOXWELL, M.D. Cantab., F.R.C.P. Lond.,

PROFESSOR OF THERAPEUTICS IN THE UNIVERSITY OF BIRMINGHAM.

Gentlemen,—Perhaps we prescribe few things more ignorantly than an inhalation; the nature of the drug or drugs chosen we may take the trouble to indicate, but who amongst us knows the strength of the actual inhalation or what change must take place in that strength ere it reach the lung alveoli. Moreover, our directions as to the method of employment are often vague: how much and how hot should be the added water, how long should each treatment last, how often should it occur. The fact is, we are half-hearted in our belief of its efficacy and so take but little interest in its administration. I think the advent of the throat surgeon is the chief cause of this; we can see, without much thought, the result of his labours and so gladly hand over to him conditions we previously treated by the slower and more doubtful method of inhalation. If this were all I should not greatly complain. But unfortunately we hand over not only the local but the constitutional treatment; this means—and small blame to the surgeon—that the constitutional treatment is to a large extent neglected, with the consequence that the patient remains for years in the bands of his local ameliorator till such time as his *vis naturæ* may choose of herself to bring about a betterment of his constitution. For the greater proportion of these naso-pharyngo-laryngo-tracheal conditions are constitutional. The local trouble is merely the maximum expression of a dyscrasia which exists throughout the body and can there be detected by the painstaking physician, though the symptoms may be so vague and indefinite that they pass unnoticed by the patient himself.

The real source of the trouble is often not in the local mucous membrane but in the nutriment supplied to this by blood and lymph; perhaps these fluids are themselves deficient in nutriment, as in the anæmias, the gouty diathesis, or chronic renal disease; or, though not deficient in nutriment, they contain irritating material, as again in gout and renal disease or in gastro-intestinal catarrh, these producing a hyperplasia of connective tissue throughout the body, one of its local expressions being hypertrophic rhinitis, pharyngitis, or laryngitis; or, though the fluids themselves are fairly healthy, the vaso-motor control is imperfect and the tissues lie too long soaked in venous blood and used-up lymph; or, lastly, there is feeble action of the governing system, there is nervous debility or acute prostration, the stimuli have lost their energy and directness of command, with a resulting inertness and flabbiness of the stimulated tissue, a granular and œdematous pharyngitis resulting. The special surgeon may say that, while removing the local trouble, he in no way forgets the constitutional dyscrasia and is as competent to treat it as the physician. He may be, though I do not think he is; but whether he be so or not his patient does not believe him to be so. Not seldom I have had patients who have been to such a surgeon, have reaped much local benefit at his hands, have trusted greatly in him, and have persistently continued the local medicament he prescribed, but have omitted altogether, or very soon, his general treatment, supposing it was not likely to be of much benefit as it was "not in his line." This is one of the curses of specialism.

The layman supposes that if there is any local anatomical *abnormality* then the local malfunction must necessarily be due to this. Are we always careful to point out that though it may increase the malfunction it is very rarely its cause? Do we not too readily allow the sufferer, eager for relief, to submit to the removal of the abnormality with but a temporary improvement, perhaps none at all, or, may be, speedily followed by an exacerbation of his condition? Do we always insist upon explaining that his abnormality existed years before his malfunction, was perhaps even congenital, and that if only the malfunction can be otherwise remedied he will again cease to observe it? Yet I am convinced that in most of these cases the correct treatment is to endeavour to relieve the constitutional condition which has caused the local trouble, and *then*, if you like, remove the cause which has rendered the locality peculiarly susceptible to the dyscrasia. And why? First, because it is never right to allow a patient to continue with *any* dyscrasia if it can be remedied; it is our duty to remove him from this danger zone, where he is constantly liable to attack, and place him in a condition of good natural resistance. Secondly, if an operation should then prove necessary, it is more likely to prove successful than if attempted when he is functioning badly. Even in war we try to remove our wounded from the danger zone to the field hospital before we operate, and, I understand, our civil surgeons prefer to wait till the patient be in the best possible condition physiologically before they undertake a serious operation. Thirdly, we must remember that in most of these nasopharyngeal operations a raw surface is left bereft of mucous membrane. We hope that healthy mucous membrane will in time cover it. What chance is there of this if the neighbouring mucous membrane be *un*healthy? If it should succeed in covering it with unhealthy membrane like itself the old condition will soon reassert itself, but more probably a scar tissue will be left as after a skin burn and, like this, incapable of taking on healthy action, so that the result in either case is merely temporary amelioration, the patient becoming a lifelong visitor to his surgeon.

It may be objected to me that results are not so gloomy as my remarks would suggest. I must say they thoroughly bear out my own observations, but then, perhaps naturally, I am more likely to see the surgeon's failures than his successes. I will take, therefore, the records of the surgeons themselves. Let us take nasal asthma.

Out of 313 cases of nasal asthma[1] recorded by Hack, Hering, Lublinski, Sommerbrodt, Bosworth, and Roé, 150 are reported by these surgeons as cured and 40 others as improved. But I think we must be rather guarded in accepting these numbers; anyone acquainted with hospital statistics knows how rosily the surgeon anticipates the distant future, provided the immediate result be good. One of the authorities I have quoted—Roé—accentuates this view by pointing out that of his 35 cures 17 have remained well for more than one year; or, to put it my way, 18 of his 35 cures relapsed before the year was out. If his statement should prove true of the others then the cures would only reach 25 per cent. But let us put them at 33⅓ per cent. A method which cures for over a year one-third of the cases of nasal asthma is one which we must respect, for this result is a good one. Yet the most enthusiastic of these surgeons admit that there is one grave drawback to operative procedure: some of the cases, and not seldom some of the slighter ones, are made worse. This is a very serious objection and it is one that impresses itself most upon my mind, for it is just these which come back to the physician.

The physician's methods, if slow, ineffectual, and undramatic, have, at any rate, no such drawback. That they are slow I grant, and, therefore, to the gasping hurry of this twentieth century must seem undramatic. But I cannot admit the ineffectual. I certainly think he can claim one-third of his cases as cures of more than one year's duration. I believe he could say one-half. But it is also quite true that some which he cannot cure temporarily or permanently will speedily be cured by the surgeon. I do not think the proportion is large, perhaps 10 per cent. They are the cases where the local cause is a gross one and the constitutional enters little, if at all. I have said the physician's method has no drawback. It has, on the other hand, the great advantage of putting the patient on a healthy basis generally. Indeed, often the constitutional is the only treatment needed. Let me instance a case. A mother brought her little boy, aged four years, complaining that he daily suffered from violent attacks of sneezing which left him prostrate. I concluded that he had nasal asthma, but found he had also gastro-intestinal catarrh and nervous irritability. I did not examine his nose nor did I locally treat it, but cared for his body generally. He came again with his sneezing but little better, but I still refused to heed it and his mother took him away sorrowfully. By the next visit she had evidently come round to my view, for she said nothing about the sneezing, contenting herself with remarking that the other symptoms were greatly improved. The tables were turned; it became my duty now to inquire minutely after the sneezing and to find that, though he still occasionally sneezed, yet all the paroxysmal severity had vanished. Nor did it recur during the few remaining months she thought it necessary to bring him to me. But what I particularly wish to point out is, that the result was not only a better nose, but a better child altogether—body, mind, and spirit—than when he first came to me, the better nose being merely an incident in the general amelioration.

Another instance. A man, aged 42 years, came complaining of a troublesome, racking cough which kept him awake, wore him out, and was accompanied by thick yellow, blood-stained phlegm. His lungs were healthy but his pharynx was velvety, with œdematous granulations. I found he was alcoholic. His liver was firm, large, and congested; his heart was dilated and feeble; and his kidneys passed urine excessive in quantity, of low specific gravity, and with a too small excretion of proteid waste. He had slight general anasarca. I gave him some chlorate of potash lozenges to satisfy his mind but otherwise disregarded his throat, feeling sure this would recover long before his heart and moral fibre were fit to run alone. And that is what has happened. At his last visit his cough was not worth mentioning and he had hoped I should bid him good-bye, but his heart was only slightly better, though the anasarca had gone, and he still looked at me with the pitiful eyes of moral instability. So I continue to keep him in tow with threats of pharyngeal relapse till heart-muscle and nerve-cell are stronger.

What has all this to do with inhalation? A great deal, I think. Inhalation often fails, just as operative procedures do, because we trust to it alone; and often the local disease can be remedied without the aid of either. They are both limited in their scope, and are but the handmaids of constitutional measures. If the lesion be gross and limited—e.g., a polypus, operation is the better maid; if it be wide-spread, though mild, inhalation is to be preferred. In thus pointing out how limited its scope and how often it is needless, I think I have said one-half of what I want to say on this subject of inhalation.

It is not only surgical methods which have improved during the last 40 years. The methods of inhaling have made equal strides. Perhaps the greatest was the introduction of atomisation which enabled us to do away with the relaxing effect of steam. Another great development is the institution of inhalation chambers. If these rooms, full of medicated air, could only be generally distributed, I believe inhalation would at once take a front rank amongst our curative efforts. At Marlioz, close to Aix-les-Bains, is a large room of this kind, some 60 feet by 30 feet, supplied with tables, chairs, and lounges, where invalids can go and chat, stroll up and down, dream in easy chairs. read books of their own or the news of the day in the papers and periodicals on the tables, write their letters or prosecute their studies. Each half hour or so everyone is turned out to wander a few minutes in the beautiful park whilst the room is thoroughly ventilated. In this way the patient can inhale for hours a day, without any effort on his part, the medication necessary for his nose, his throat, his windpipe, and his lungs. Allevard[2] is perhaps the headquarters of this method. As long ago as 1852 Dr. Niépce noticed that the patients used to go up to the galleries of the establishment, where the sulphuretted hydrogen was in greatest percentage. as they found the atmosphere most alleviating there. Hence in 1852 he devised inhalation rooms, both cold and hot. There are seven cold rooms, each 20 feet high by 20 wide by 24 long. In the centre of each is an ingenious apparatus for forming a huge spray of the water. The sulphuretted hydrogen is thus disengaged and mixes with the air. Before being sprayed the water contains 24 volumes of sulphuretted hydrogen per 1000, but when it leaves the room it only has 1 per 1000. The *séances* here, too, last half an hour. At their commencement there is very little $H_2S$ in the air, but before they end this mounts up to 19 volumes in the 1000. Four other rooms of the same size are set apart for warm inhalation. There is the same central arrangement for distributing the gas. Around it the seats arise in tiers. Beneath each tier the floor is perforated and through the perforations immense volumes of $H_2S$ vapour at from 80° to 86° F. pour into the room. Patients take off their outer garments and sit in waterproof gowns for from 20 to 50 minutes. They then rest, dressed, for from 15 to 20 minutes in a room of intermediate temperature and finally harden off in one of the cold rooms. They, in fact, give their respiratory lining membranes a sulphur Turkish bath. This seems to me to be the method of inhalation *par excellence;* I cannot see why it should not be adopted at, say, the sulphur spas of Askern, Harrogate, Llanwrtyd, and Strathpeffer. I am sure the British would take to it kindly and many would rejoice at not having to leave Great Britain. The only instance that I know of a similar installation in England is the creasote room at Brompton. Dr. Hector W. G. Mackenzie has kindly written me this description of it: "The room at Brompton is a fairly large one, about 12 feet by 16 feet and 12 feet high. The creasote vapour is produced by heating about two ounces of coal-tar creasote in a metal dish over a lamp placed on the floor. The room is made, as far as possible, air tight. The patients put on cotton overalls and wear eye-protectors. A covering is also worn over the hair. It is advisable to put cotton-wool in the ears. The patients sit on stools or chairs. The lamp is not placed under the creasote until the patients are settled in the room, so that they get the vapour gradually mixed with the air. The average duration of a *séance* is half an hour; at first shorter, afterwards longer, possibly an hour or an hour and a half. The treatment is repeated as a rule every day but occasionally I have had it given twice a day. Bronchiectasis is the only condition which seems to derive benefit from it, but in that the benefit is usually very marked."

---

[1] L'Asthme d'Origine Nasale, de son Traitement par les Eaux d'Uriage. Par François Teulow-Valio, M.D. Gustave Firmin et Montane, Montpellier, 1898.

[2] Allevard is a little manufacturing town of 3000 souls on a small branch on the south side of the main line between Chambery and Grenoble, 1500 feet high. Its water contains 2·4 volumes per cent. of sulphuretted hydrogen gas. Apart from the $H_2S$ the water is a very pure one; in fact, it is nearly identical with the sulphur water of Llanwrtyd in Brecknockshire, a village 700 feet above the sea. Both have but little smell or taste of sulphuretted hydrogen, and both are largely drunk by the patients. But whereas at Allevard inhalation is the chief means of medication, at Llanwrtyd this means does not exist. Moreover, Allevard has a theatre with a play every evening, and a very fair band plays twice a day. Llanwrtyd holds out no such attractions. Allevard has sunshine, Llanwrtyd beauty. Llanwrtyd has the better baths; both have excellent hotels.

Coming now to the ordinary local inhalation, here again we see things undertaken much more thoroughly abroad. Each patient has his own private coupé, but the water, air, or steam is supplied to all from one source. Speaking generally, at the sulphur spas of Challes, Marlioz, Allevard, and Uriage pulverisation, or as we call it atomisation, of the water is the only method used. There are three varieties. The first is called "*brisement*," where the water is broken up by impinging on a metal surface. It is previously forced into a sphere under a pressure of 15 to 20 atmospheres; thence it comes with great force through a very fine agate or ruby nozzle with a lumen of one-fifth to one-tenth of a millimetre in diameter. The metal surfaces on which this fine jet forcibly impinges are of three kinds:—(*a*) A tambour. This is a small hollow cylinder about one and a half inches long and three-quarters of an inch in diameter. This cylinder is hinged on a metal stalk which in its turn is fixed into a solid earthenware foot some three inches in diameter. The jet enters one end of the tambour, is so directed that at the centre it impinges on the concave surface, is at once broken up, and issues in a cloud of the finest dust at the other end, the circumference of this end cutting off the outer portion so that a comparatively small, fairly cylindrical column of atomised water having a considerable velocity is the result. This tambour form is used for throat and bronchial inhalation (oral), as the whole of the column can enter the mouth without wetting the face. (*b*) A palette. This is a small disc of metal which replaces the tambour. It has a spray which radiates more widely than that from the tambour; it is used for skin eruptions, conjunctival or nasal troubles, and can be placed close to the diseased spot. (*c*) A tamis, or fine meshwork of platinum, through which the jet forces its way and is broken up in so doing. The resulting spray is a much coarser one than by either of the other methods and as far as I could see is not much used.

Another variety of inhalation is that where the fluid is drawn up and atomised by a jet of steam, a warm cloud of particles resulting; this is used a great deal at Challes and Uriage. Lastly, there is the variety so commonly made use of on a small scale in England where an *air* jet draws up and atomises the fluid. But with us the force of the air jet depends upon a small rubber bellows worked by the patient himself; at foreign spas this work is done for everyone by a common force which is always acting. For sulphur waters this method is not available, as the jet of air speedily decomposes them. Here again, in the matter of these local inhalers, we see how abroad they make things as easy as possible for the patient. It may seem a small matter whether you blow your own bellows or not; and if the inhalation is to be for five or ten minutes only perhaps it is not of great importance. Yet we must remember that our inhalers are invalids to whom every exertion, mental or physical, is something of an annoyance.[3] But it is just these prescriptions of five and ten minutes which seem to me to be a mere playing with this form of medication, a species of quackery. What can you expect from a medicament which only acts for $\frac{1}{70}$th of the day. The inhalation bathes an excreting, not an absorbing surface, so that we cannot suppose that its action can continue for long after the inhalation has stopped. Cells so essentially scavenger-like as are the ciliated cells of the bronchi can scarcely be expected to pass on the medicament to the deeper tissues with any great energy. When I prescribe an inhalation I always try to get the patient to inhale for three hours daily, and if I fail to get a promise of one hour at least I drop it altogether for some other method of treatment. During inhalation respiration is deeper than with ordinary breathing. It should, therefore, always be done in pure air. I always endeavour that it shall be used out of doors. There are occasions when inhalation is used as a palliative only —e.g., as a sedative to cough before going to bed. Here, manifestly, if you achieve palliation it matters not how short a time the treatment has lasted. But when more far-reaching curative effects are desired then the longer periods are necessary.

I do not suppose any one of us questions the efficacy of treatment by inhalation when we have to do with nose, pharynx, larynx, or main bronchi, but many are sceptical as to its influence on diseased conditions of the alveoli or fine bronchioles. I think this scepticism is largely the result of our want of thoroughness in carrying out the treatment. When I have succeeded in getting it done for three hours daily for two or three weeks the improvement is usually so marked that there is no difficulty in persuading the patient to continue for two or three months. If the inhalation be a gaseous one—e.g., $H_2S$—I do not see how we can avoid the conclusion that diffusion will carry it right into the alveoli and that it will be there taken up into the blood along with the oxygen. But when the inhalation consists of an atomised liquid I admit the result is more doubtful. It will largely depend upon the fineness of the atomisation and upon the weight and volatility of the drugs used. In any case a large proportion must necessarily be deposited in the upper air passages. It would be unwise to use drugs which are not largely volatile at the temperature of the lungs; hence we find the volatile oils are favourite drugs for inhalation—e.g., the terpenes, eucalyptus, balsams of Peru and tolu, oil of cade, and betul. But we must remember that the tidal air is only one-thirteenth of the total air in the lungs; one half of this comes back again more or less unchanged; hence the inhalation when it reaches the alveoli can only be one twenty-fifth as strong as when it enters the mouth. When we consider the amount which has been deposited on the way we shall probably be right in saying that the percentage of active medicament which enters the alveoli cannot be more than one-fiftieth of that which enters the mouth. I am not saying this to discourage inhalation, for I believe it has a future; but there is no surer way of damning a therapeutic method than by expecting from it more than it can possibly give. On the other hand, when we call to mind the immense difference a comparatively minute change in the ordinary air makes in our health we cannot help believing that inhalation, properly employed, is a powerful therapeutic measure. But its power resides not in the percentage strength of the inhalation but in the vast quantity of it inhaled; that is, in the long duration of its employment.[4]

# A STATISTICAL STUDY ON THE POLYMASTIA OF THE JAPANESE.

By Dr. TEIZO IWAI,

PHYSICIAN-IN-CHIEF OF THE JAPAN RED CROSS HOSPITAL; ATTACHED TO THE SUITE OF H.I.H. PRINCE FUSHIMI REPRESENTING HIS MAJESTY THE EMPEROR OF JAPAN.

ALTHOUGH there is mention in the seventeenth and eighteenth centuries of a few scholars in Europe having made a study of polymastia it was not until the latter part of the nineteenth century that the subject began to be handled in a scientific manner, and only in the last 15 years can we say that it has made marked progress. Realising that the subject has a close relation not only to practical medical science but also to anthropology, comparative anatomy, and embryology, and that its study has been neglected hitherto by our own investigators, I venture to present the result of my own investigation up to the present time.

---

[3] I have tried, with the assistance of Messrs. Philip Harris and Co. of this city, to devise some plan for obtaining this constant pressure on a small portable scale suitable for one person. The city water pressure was evidently altogether insufficient for the purpose, and we found it practically very difficult to obtain sufficient pressure by placing weights on the open end of a cylinder which communicated with the fine nozzle. Either the cylinder was so small that its contents were speedily exhausted or else the requisite weight was so great as to be very cumbersome and impossible to be manipulated by the patient. A motor of some sort—a steam engine is used abroad—seems to be the only solution. Still, I trust it is not too Utopian to hope that such an apparatus may be placed in each large town where patients could resort, each taking his own nozzle and medicament, to be attached to the central power installation for a small fee per *séance*.

[4] The amount of air inhaled daily by an average man is no less than 10,000 litres. If we take the absolute amount of water vapour in the air we find that a considerable change in this, which acts as a diluent to the gases of the air, can make a considerable difference to the intake of oxygen—e.g., at Madras a man inhales 80·7 kilogrammes of oxygen a month; at London or Brussels 87·3; and at St. Petersburg as much as 90·4 kilogrammes—i.e., one-eighth more oxygen at St. Petersburg than at Madras; or, *anglicé*, in a year he would inhale 270 pounds more oxygen at St. Petersburg than at Madras.

### History of the Study of Polymastia in Japan.

In November, 1893, I began the first statistical study of polymastia made in Japan, and published the result two years later in the *Mitteilungen der Medicinischen Gesellschaft zu Tokyo.*[1] Previously to that, so far as I know, only two reports had been made in Japan; one was entitled "My Observation on Supernumerary Mammary Glands," by Dr. T. Kuroiwa, Director of the Obama Hospital, Fukuiken,[2] and the other entitled "A Remarkable Case of Supernumerary Mammæ," by Dr. K. Satō of the Kōseikwan Hospital, Nagoya.[3] Both articles, however, being mere reports on a single case, all the valuable statistical reports on the subject have only become available after the above-mentioned publication of mine in March, 1896, and are more or less based upon it. Therefore a mention of the relations between myself and those scholars will constitute by itself a history of the statistical study of polymastia in Japan.

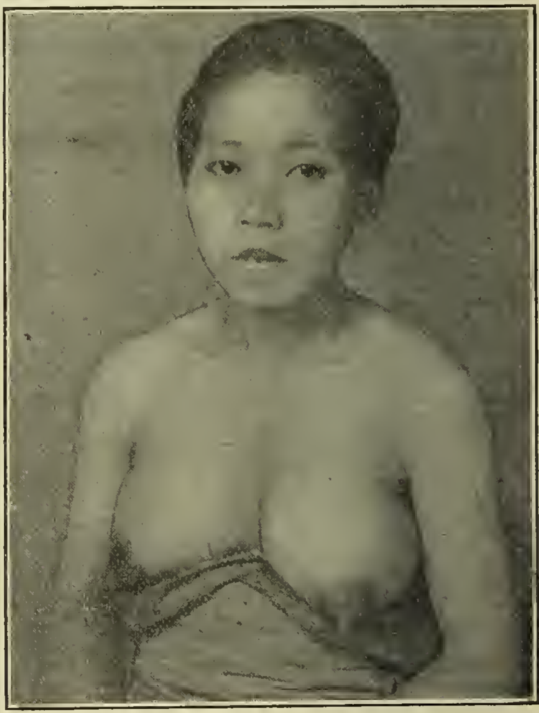
The report of Dr. Kuroiwa just mentioned, together with a figure, is referred to in Dr. R Wiedersheim's "Der Bau des Menschen" (3te Aufl., 1902), but it is to be regretted that he mentions only the name of Dr. K. Horiuchi, who sent him the article, instead of that of the original author, Dr. Kuroiwa. Dr. R. Bonnet also mentions in his work[4] Dr. Horiuchi's name instead of that of the author himself, showing that he was misled by Dr. Wiedersheim's book. The first report I made on the subject fortunately attracted the attention of scientific men in Japan, so that there is hardly a person studying the subject who does not refer to it. The following are some of the extracts from various writers.

In July, 1896, Dr. K. Katayama, professor in the Tokyo Imperial University, in a report on four cases of female polymastia under the treatment of Dr. I. Honda of Kosaka, Akitaken,[5] says that "the readers are advised to refer to the report made by Dr. T. Iwai." In December, 1897, Dr. K. Satō[6] said in his second report: "After I made my first report Dr. Iwai's more minute report appeared, and I began to pay more attention to the subject, and came to the conclusion that polymastia is not rare among Japanese women." In May, 1899, Dr. S. Otani, professor in the Medical School of Nagasaki, assisted by Dr. I. Amemori and Dr. T. Hara, made a minute statistical report[7] At the outset he said: "Since Dr. Iwai has written an article on polymastia it is unnecessary to say anything further." And at the conclusion, following my method of comparison, he gives a statistical table under six headings which coincides with the result I stated in my first report and thus sufficiently proves the correctness of the same. In April, 1900, when I read papers at the annual meeting of the Tokyo Medical Association on the Supplementary Report about Polymastia,[8] Dr. H. Uno spoke of the case of a woman at Yokohama, who, after having given birth to a child, was greatly annoyed by having milk dripping from the supernumerary glands she had in both axillæ. Dr. T. Irisawa, professor in the Tokyo Imperial University, made a statistical report on the cases which came under his observation and in general it accorded with my own. Dr. K. Kashida, who made a report, differing from Dr. Otani's and my own, says that in the greater number of his cases the glands were found directly under the normal breasts. In the spring of the same year Dr. E. Baelz told me about 48 cases that he had seen; and I found that his observation coincided in general with my own. In May, 1902, Dr. Otani, assisted by Dr. M. Satō, made a supplementary report on polymastia.[9] In its introduction he says: "Among them, we might say that Dr. Iwai's report is most complete and valuable for those who may study this subject." This report of Dr. Otani is on the Relation of Tuberculosis to Polymastia, of which I have the honour to be the first discoverer, and I felt great satisfaction in finding that Dr. Otani's opinion coincided in general with my own; this, however, I discuss more minutely in my essay entitled the "Relation of Polymastia to Tuberculosis," 1907. In October, 1904, Dr. K. Satō published a report entitled "An Extraordinary Case of Recurrence of a Supernumerary Gland after its Removal by Operation and the Results of Some Investigations concerning the Subject of Polymastia,"[10] in which he referred to the relationship between polymastia and tuberculosis which I had formerly maintained. He also stated therein that out of 29 cases, subjects of polymastia, he found 19 actually affected by pulmonary tuberculosis or suspected to be tuberculous and began at last to believe that he could safely conclude that "those who are subjects of polymastia are more liable to be affected by tuberculosis."

### Position of Polymastia and Study of its Pigmentation.

According to my observations the position of supernumerary glands is commonly in our country in the pectoral region, and most commonly they are found in the region II. indicated by Dr. Williams, which is above and external to the normal breasts along the front edge of the axillæ (see Fig. 1).

FIG. 1.



Usual position and shape of supernumerary glands as occurring among Japanese women.

Medical experts of the West generally locate these supernumerary glands below the ordinary mammæ, thus differing from the foregoing description. Out of 511 subjects of polymastia whom I examined I found these glands in 441 *above* the normal breasts, giving the ratio of 86·30 per cent. of the total number, while in only 48, or 9·39 per cent., of the total number I found them *below* the normal breasts, and in the remaining 22, or 4·30 per cent., both above and below. Dr. Otani's and Dr. Baelz's reports were to the same effect—that in the majority of subjects of polymastia the glands were found *above* the normal breasts.

Contrary to the above, Dr. T. Watanabe, captain-surgeon of the Imperial Japanese army, when making an examination of 5452 conscripts in the vicinity of Utsunomiya, compiled statistics of polymastia at my request and found 107 subjects of polymastia, of which 102, or 95·32 per cent., had these glands below the normal breasts, and four persons, or 3·74 per cent., above, and the remaining one, or 0·93 per cent., had them both above and below. Also, according to

---

[1] Vol. x., No. 5, March, 1896.

[2] Tokyo Medicinische Wochenschrift, No. 692, July, 1891.

[3] The Kōseikwan Medical Magazine, vol. ii., Nos. 11 and 12, December, 1895.

[4] "Die Mammaorgane im Lichte der Ontogenie und Phylogenie" in Markel and Bonnet's Ergebnisse der Anatomie und Entwickelungsgeschichte, 1892.

[5] Mitteilungen der Medicinischen Gesellschaft zu Tokyo, vol. x., No. 14.

[6] The Kōseikwan Medical Magazine, vol. iv., No. 6.

[7] Mitteilungen der Medicinischen Gesellschaft zu Tokyo, vol. iii., No. 9.

[8] Ibid., vol. xiv., No. 12.

[9] Ibid., vol. xvi., No. 10.

[10] Ibid., vol. xviii., No. 20.

Dr. Kashida's observation, though he does not give the exact figures, they were found in most cases below the normal breasts. But when I compare the results of these two observers, Dr. Watanabe and Dr. Kashida, with the results of my own observations on several cases I am rather inclined to wonder at the former. According to Dr. Leichtenstern's observation 91 per cent. of these glands are found on the pectoral region, and most of them (94 per cent.) are below the normal breasts; and when they are as rarely found above (3 per cent.) the position is invariably outside of the normal breasts towards the axillæ. Dr. Hennig described the location of these glands in the pectoral region as follows:—

| | |
|---|---|
| Below the normal breasts ... ... ... ... ... ... ... | 103 |
| Above the normal breasts ... ... ... ... ... ... ... | 3 |
| Outer side of, and at the same height as, the normal breasts ... ... ... ... ... ... ... ... ... ... | 3 |
| Inner side of and lower than the normal breasts ... | 37 |
| Directly under the normal breasts ... ... ... ... ... | 9 |
| On the middle-line below the pair of normal breasts ... | 5 |
| Outer side of and lower than the normal breasts ... | 1 |

Dr. Testut, taking 100 cases mentioned in the record made by Dr. Leichtenstern and Dr. Laloy, classified the position of these glands in the pectoral region as follows:—

| | |
|---|---|
| Below the normal breasts ... ... ... ... ... ... ... ... | 93 |
| Same height as the normal breasts ... ... ... ... ... | 2 |
| Above the normal breasts ... ... ... ... ... ... ... ... | 4 |
| Both above and below the normal breasts ... ... ... | 1 |

Dr. Bonnet says that in most cases the glands are found in the pectoral region below the normal breasts and chiefly on the inner side of them. Sometimes, but rarely, they are found above and outward of the normal breasts, or near the axillæ, or even in the axillæ themselves.

Apart from the question whether they are above or below the normal breasts, I have observed that the number of those on the left is greater than those on the right. Out of 936 of these glands I have seen 481, or 51·38 per cent., on the left, and 454, or 48·50 per cent., on the right, and only one, or 0·10 per cent., on the median line. Upon this point both Japanese and European authorities seem to agree, as will be seen from the following statements. Dr. Wiedersheim says that whenever supernumerary glands are more numerous on one side they are generally on the left side. Dr. Leichtenstern writes that out of 50 cases 34 had them on the left and 16 on the right. Dr. Ammon mentions 85 cases on the left and 32 on the right that have come under his observation. Dr. Watanabe, alone differing from all the above mentioned, states that out of 134 supernumerary glands which he had seen 64 were on the left and 70 on the right.

Supernumerary glands on the midway line are very rare. Dr. Gorré and Dr. Percy mention a case of a woman and Dr. Bartels of a man. I once saw a male tuberculous patient, 36 years of age, who had such a gland on the linea alba nine centimetres below the point of the xiphoid appendix of the sternum and 15 centimetres below and inward of both normal breasts. Although Western authorities mention cases in which these glands are found on the shoulder, back, thigh, labia majora, &c., I have not been able to find them anywhere but on the chest and abdomen. Dr. Leichtenstern classifies 105 cases of polymastia with regard to the position as follows:—

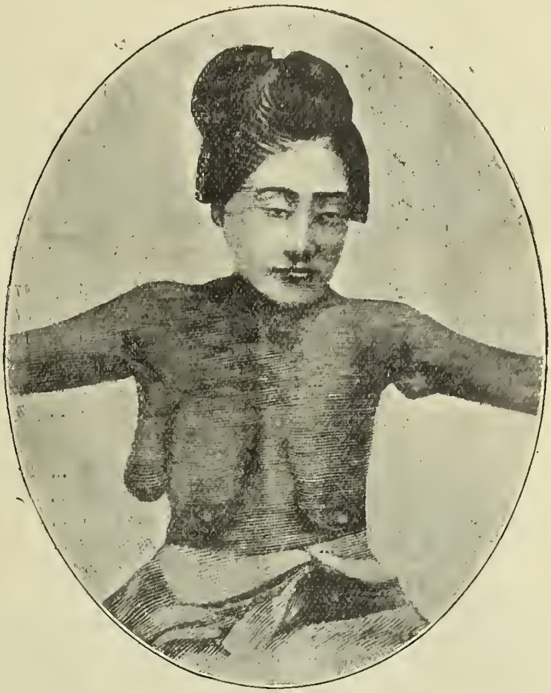
| | |
|---|---|
| Pectoral region ... ... ... ... ... ... ... ... ... ... | 96 |
| Axilla ... ... ... ... ... ... ... ... ... ... ... ... ... | 5 |
| Back... ... ... ... ... ... ... ... ... ... ... ... ... | 2 |
| Shoulder... ... ... ... ... ... ... ... ... ... ... ... | 1 |
| Outer side of thigh ... ... ... ... ... ... ... ... ... | 1 |

Dr. Hennig gave the following table:—

| | |
|---|---|
| Pectoral region ... ... ... ... ... ... ... ... ... ... | 105 |
| Axilla ... ... ... ... ... ... ... ... ... ... ... ... ... | 9 |
| Shoulder... ... ... ... ... ... ... ... ... ... ... ... | 1 |
| Back... ... ... ... ... ... ... ... ... ... ... ... ... | 5 |
| Inguinal region ... ... ... ... ... ... ... ... ... ... | 3 |
| Outer side of thigh ... ... ... ... ... ... ... ... ... | 3 |
| Labia majora... ... ... ... ... ... ... ... ... ... ... | 1 |
| Ovary ... ... ... ... ... ... ... ... ... ... ... ... ... | 1 |

Dr. Baelz has told me of a European gentleman who had a well-developed accessory mammilla on the inner side of the left thigh and another on the pectoral region near the left axilla. Dr. K. Satō, in his second report, writes of having observed a woman, 23 years of age, who had given birth to three children and had distinct mammary glands in both axillæ and under the skin of the left upper arm, which during the pregnancy were swollen like normal breasts. As the existence of the glands on the upper arm is exceedingly rare, and as far as I know has not been found in medical literature, I have here reproduced the photograph of the same with his permission.

FIG. 2.



Supernumerary glands under the skin of the left upper arm and the right axilla, taken from Dr. K. Satō's second report.

The following is a table compiled as the result of my examination of 936 cases of polymastia.

| | | | | | | |
|---|---|---|---|---|---|---|
| Total number of polymastiæ 936. | Male | 250 | Above normal breasts | 190 | Left ... | 92 |
| | | | | | Right... | 98 |
| | | | Below normal breasts | 60 | Left ... | 37 |
| | | | | | Midway | 1 |
| | | | | | Right... | 22 |
| | Female | 686 | Above normal breasts | 662 | Left ... | 338 |
| | | | | | Right... | 324 |
| | | | Below normal breasts | 24 | Left ... | 14 |
| | | | | | Right... | 10 |

The following is a table compiled from Dr. Otani's reports made at two different times:—

| | | | | | | |
|---|---|---|---|---|---|---|
| Total number of supernumerary glands 610. | Male | 197 | Above normal breasts | 152 | Left ... | 86 |
| | | | | | Right... | 66 |
| | | | Below normal breasts | 45 | Left ... | 30 |
| | | | | | Right... | 15 |
| | Female | 413 | Above normal breasts | 388 | Left ... | 201 |
| | | | | | Right... | 187 |
| | | | Below normal breasts | 25 | Left ... | 12 |
| | | | | | Right... | 13 |

Again, the results of Dr. Watanabe's observation upon the conscripts are as follows:—

| | | | | | |
|---|---|---|---|---|---|
| Total number of supernumerary glands | 134 | Above normal breasts | 7 | Left ... | 2 |
| | | | | Right... | 5 |
| | | Below normal breasts | 127 | Left ... | 62 |
| | | | | Right... | 65 |

By putting the above three tables together we obtain the following result:—

| | | | | | | |
|---|---|---|---|---|---|---|
| Total number of supernumerary glands 1680. | Male | 581 | Above normal breasts | 349 | Left ... | 180 |
| | | | | | Right... | 169 |
| | | | Below normal breasts | 232 | Left ... | 129 |
| | | | | | Midway | 1 |
| | | | | | Right... | 102 |
| | Female | 1099 | Above normal breasts | 1050 | Left ... | 539 |
| | | | | | Right... | 511 |
| | | | Below normal breasts | 49 | Left ... | 26 |
| | | | | | Right... | 23 |

Thus, we find the number of supernumerary glands above the normal breasts is greater by far than those found below, the former being 90·03 per cent. while the latter is only 9·96 per cent. As to the position of right or left, there is no doubt that the greater number occurs on the left rather than on the right, showing the ratio of 52·76 per cent. to 47·23 per cent. respectively.

In regard to the pigmentation of areola, I believe that in the great number of cases of polymastia in males the pigmentation is more marked than in females; and again, regardless of the sex, those situated below the normal breasts show more pigmentation than do those above. Dr. Irisawa, confirming my observation, states that such glands found below the normal breasts show more pigmentation than do those above. In regard to the pigmentation in cases of polymastia I have carefully analysed 399 and obtained the following result:—

TABLE I.

| | | | | | |
|---|---|---|---|---|---|
| Total number of supernumerary glands 399. | Male ... | ... 132 ... | Pigmented ... | 63 ... | 47·72% |
| | | | Normal ... ... | 49 ... | 37·12% |
| | | | Unpigmented | 20 ... | 15·15% |
| | Female ... | ... 267 ... | Pigmented ... | 64 ... | 23·97% |
| | | | Normal ... ... | 167 ... | 62·54% |
| | | | Unpigmented | 36 ... | 13·48% |

TABLE II.

| | | | | | |
|---|---|---|---|---|---|
| Total number of supernumerary glands 399. | Above normal breasts ... | 345 ... | Pigmented ... | 79 ... | 22·89% |
| | | | Normal ... ... | 216 ... | 62·60% |
| | | | Unpigmented | 50 ... | 14·49% |
| | Below normal breasts ... | 54 ... | Pigmented ... | 48 ... | 88·88% |
| | | | Unpigmented | 6 ... | 11·11% |

Dr. Otani and others hold that there is very little connexion, if any, between pigmentation and pregnancy and say in proof thereof that there was a woman who gave birth five times yet had no pigmentation in the areola; and again, they say that among the males there are comparatively more with pigmentation than among the females. Nevertheless, there can be no doubt, according to my own observation, that during pregnancy the areola of supernumerary mammary glands becomes darker in colour.

### RATIO OF POLYMASTIA IN JAPAN AND ITS RELATION TO SEX.

The ratio of cases of polymastia found in Japan varies not only according to the investigators but even the same authors do not, or cannot, always give the same rate. As shown in the accompanying table, Dr. Otani gives in his first report a higher rate of cases than does my own first report, and again his second report shows a rise of ratio over the first. My own reports, made at several different times, show a gradual rise in ratio every time. This is due, I trust, to the better method applied in the investigation and the skill attained through more extended practice. The total number of persons (female sick nurses, students, patients, and so on) examined by me at several different times was 11,789. Out of this number 443 were subjects of polymastia, or a ratio of 3·75 per cent. of the total number. Dividing the total number between the sexes I found out of 6803 males 139 (or 2·04 per cent.) were subjects of polymastia, and out of 4986 females I found 304 (or 6·09 per cent.) were subjects of polymastia. Adding to these 17 males and 65 females recorded in my note-book gathered from various sources we have in all 156 males and 369 females, or a ratio of 2·36 females for 1 male. The total number of subjects examined by three physicians at different times (twice by Dr. Otani, once by Dr. Watanabe, and others by myself) amounts to 32,922, out of which 917 (or 2·44 per cent.) were subjects of polymastia. When we divide this number between the sexes, out of 22,577 males there were 380 (or 1·68 per cent.), while out of 10,345 females there were 537 (or 5·19 per cent.), showing that the ratio of polymastia in females is three times larger than that in males.

I believe that we can safely take the above figures, obtained through various investigations by different persons, as the fixed standard ratio of cases of polymastia in Japan. Dr. Leichtenstern states that polymastia is found at the rate of 1 in 500 persons; and, further, he declares that the number is equally frequent among males and females, but out of 13 cases which he cited nine were males and four were females. Dr. Bonnet obtained 92 cases from various authorities and divided them as follows: 22 males and 70 females. Out of 262 cases gathered by Dr. Hansemann, 81 were males and 104 were females. Nothing is said of the remaining 77 cases in regard to sex. Dr. J. Mitchell Bruce, who was the first to take note of polymastia in males, found out of 3956 persons examined by him in three years 61 cases, or a ratio of 1·54 per cent. Dr. Bardeleben in his first report gives the rate of males as 9·1 per cent. and that of females 4 8 per cent.; but in his later report, made after he examined the conscripts, he raised the ratio of males to over 14 per cent. Dr. Ammon found 114 subjects of polymastia out of 2189 conscripts examined in Baden, Germany, which makes a ratio of 5·2 per cent. Out of the 114 subjects, 66 persons (3·01 per cent.) had distinct supernumerary mammary glands, while the remaining 48 persons (2·19 per cent.) had considerably less distinct ones. Dr. Watanabe found, as stated before, 107 subjects (1·96 per cent.) out of 5452 conscripts examined in the vicinity of Utsunomiya.

Recently I met with a wonderfully high ratio of polymastia when I examined 159 nurses. Out of that number I found 43 subjects (27·04 per cent.) of polymastia. Among them 16 persons (or 10·06 per cent.) had very distinct ones, while the remaining 27 (or 16·98 per cent.) had less distinct ones. Again, out of 100 candidates (males only) for entrance to the school of the Formosan Association, there were 17 subjects of polymastia, making a ratio of 17 per cent.

### NUMBER OF GLANDS IN CASES OF POLYMASTIA.

As I have stated before, it is common in Japan to find only one supernumerary gland on both right and left sides. I have found, in my observations, only 32 cases having more than 3 out of 511 subjects of polymastia—namely, 1 woman having 6 in number; 2 women having 5; 5 women and 6 men having 4; and 9 women and 8 men having 3. As far as I know, the case cited by Dr. Neugebauer, in which the woman had 6 above the normal breasts and 2 below, is the most remarkable one hitherto known. Dr. Hennig, adding 11 cases which he had observed himself to 105 cases of Dr. Leichtenstern, classified as follows: 51 cases having 3 in number; 33 cases having 4; 2 cases having 5; and 2 cases having 6. Nothing is said of the number of glands found on the remaining 28 subjects. Dr. Puech classified 77 cases as follows: 46 cases having 3 in number; 29 cases having 4; and 2 cases having 5. Dr. Ammon classified 66 cases as follows: 62 cases having 1 in number; and 4 cases having 2. Dr. Watanabe classified 107 cases as follows: 1 case having 3 in number; 25 cases having 2; and 81 cases having 1. Judging from the above it seems that those who have the larger number of such supernumerary glands are females.

### HEREDITARY TRANSMISSION OF POLYMASTIA AND ITS BLOOD-RELATION.

Several experts have written on the hereditary nature of polymastia. Dr. Leichtenstern states that in one-thirteenth of the total number of cases observed there was an indication of its being inherited. The case cited by Dr. Péterquin is a remarkable one, three sons and two daughters having inherited polymastia from their father. In 1892 Dr. Bonnet wrote that there were five cases of hereditary transmission known up to that time, of which three cases were transmitted from mothers to daughters. Dr. Neugebauer, citing Dr. Martin's cases in which the transmission continued for three generations, says that he observed many instances in which such anomalies were not inherited.

Out of 555 cases which came under my observation I found 31 cases (or 6 per cent.) of hereditary transmission and five cases (or 0·97 per cent.) where brothers and sisters had them alike.

| | | |
|---|---|---|
| 1 | case from mother to | 2 sons, 2 daughters, and 1 granddaughter. |
| 1 | ,, ,, ,, | 2 sons and 3 daughters. |
| 2 | ,, ,, ,, | 1 daughter and 2 granddaughters. |
| 1 | ,, ,, ,, | 2 daughters and 1 grandson. |
| 1 | ,, ,, ,, | 1 son and 2 daughters. |
| 3 | ,, ,, ,, | 1 daughter.* |
| 2 | ,, ,, ,, | 2 daughters. |
| 8 | ,, ,, ,, | 1 son. |
| 10 | ,, ,, ,, | 1 daughter. |
| 1 | ,, ,, ,, | 1 daughter and 1 granddaughter. |
| 1 | ,, ,, father to | 1 daughter. |
| 1 | ,, in which elder and younger brothers had them alike. | |
| 4 | ,, in which elder and younger sisters had them alike. | |

* The mother's younger brother was also a subject of polymastia.

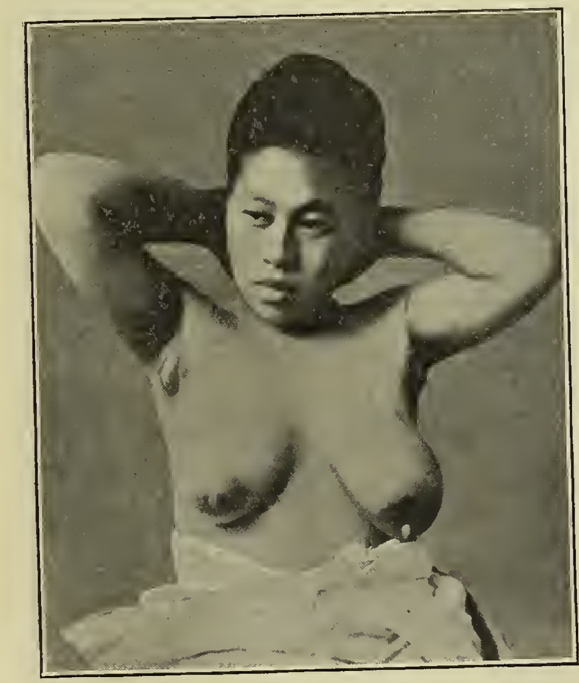
As may be observed from the above, hereditary transmission is generally from mothers and I have met with only one case of transmission from the father like that described by Dr. Péterquin. The case observed by Dr. Otani in Nagasaki, in which polymastia was inherited through four generations, from the great-grandmother to the grandmother, to the mother, and to her six children (three boys and three girls) is the most remarkable one on record.

### MAMMARY GLANDS OF POLYMASTIA AND THEIR SECRETORY PROCESS.

The development of polymastia is not always uniform. As Mr. J. Bland-Sutton has pointed out, there are three forms of its development: (1) the nipple, areola, and glands are so completely formed that they do not differ from the ordinary mammæ; (2) as we see very often, the nipple alone is existing—polythely; and (3) as in the cases reported by Dr. Satō and myself, the glands were found under the skin. In cases where these glands are fully developed there is generally more or less secretion of milk at the time of parturition; but the amount of milk and the duration of the secretory period are not always the same. I observed 11 cases in which the secretion was found at the time of parturition; and the longest period of lactation in my observation was six months after parturition. Although Dr. Uno, as above stated, mentions a case in which a woman was considerably annoyed after parturition by having dripping of milk from supernumerary glands in both axillæ, all my experience has proved to me that the secretion is obtained only by pressing or squeezing, and in so doing I could first obtain an uncoloured thin liquid, followed by cream-coloured milk.

The microscopical examination of the milk drawn from the glands a few days or a few months after parturition very often proves the existence of a great number of milk globules and a few epithelial cells. Whether there are glands or not in the polymastia cannot be ascertained until the subject has given birth to children several times. Although at ordinary times there may not seem to be any glands, when the lactation period comes on there are many cases where perfect secretion is performed. In the case cited by Dr. K. Satō the supernumerary glands at the anterior edge of the right axilla had a swelling of the size of a pigeon's egg which at the time of parturition, together with the ordinary mammæ, became enlarged to the size of an orange. At her second parturition a swelling of the same size appeared at the same place on the left and also on the inner side of the upper arm. At this time the one on the right had swollen to a lump larger than the fist. At the third parturition it became enlarged to such an extent as to prevent the movement of the right upper extremity, so that Dr. Satō was obliged to remove it by a surgical operation. (See Fig. 2.) Later, at the fourth parturition, a regeneration of the mammary gland had appeared again at the same place on the right and gradually swollen to a lump as large as the fist. At the fifth parturition he was again obliged to remove it.

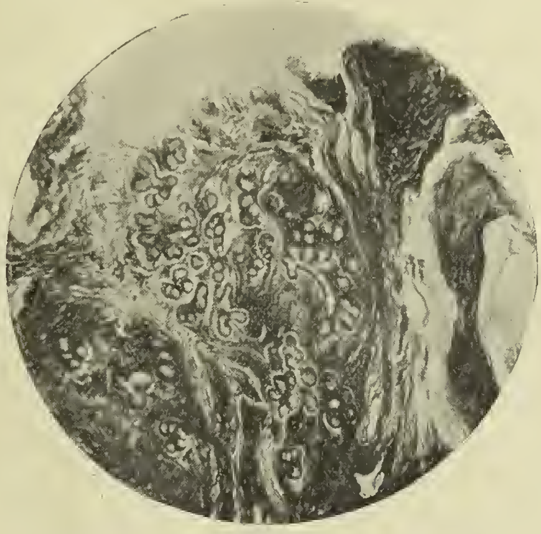
FIG. 3.



Supernumerary mammary glands in both axillæ secreting milk.

During the year 1906 I myself, too, observed in a woman who had given birth to triplets a bunch of the size of an egg which had appeared under the skin of the left axilla and atrophied within 30 days after the parturition. In July, 1903, Dr. Kinoshita, Professor in the Tokyo Imperial University, had kindly invited me to examine a female patient at the hospital of the Tokyo Imperial University, where I had an opportunity of observing a very interesting case of polymastia. The said patient, who was 24 years of age, was then on the eighth day after her third confinement. At the examination I found in her a supernumerary mammary gland of the size of a pigeon's egg in each axilla and a smaller one on each anterior wall of both axillæ. (See Fig. 3.) After squeezing them I recognised the secretion of milk from each of them.

FIG. 4.



Section of a supernumerary mammary gland in a case of polymastia.

In the case observed by Dr. Neugebauer, that of a woman 23 years of age having supernumerary mammary glands eight in number, at the first parturition no change took place, but from the second day of the second parturition the process of secretion commenced in every one of them. Through the kindness of Dr. Satō I was enabled to examine the glands which he had removed, and by examination of the microscopic specimen of the same I have been able to ascertain the existence of acinous glands in it. During the month of April, 1903, I had, however, an occasion of taking a supernumerary gland out of a woman 27 years of age. The microscopical examination of this proved the existence of acinous glands. (See Fig. 4.)

### CONCLUSION.

From the above statements I have arrived at the following conclusions:—

1. Among the Japanese, unlike the Western people, polymastia is generally found above the normal breasts, and most commonly on the anterior wall of the axilla, or the region II. indicated by Dr. Williams.
2. It is likely that in many cases of polymastia the areolæ of those under the normal breasts are pigmented, and that in males they are more likely to be pigmented than they are in females.
3. According to the result of investigations made by myself and others up to the present time the rate of polymastia is 1·68 per cent. among males and 5·19 per cent. among females. The fact that we find it more frequently in females than in males, and on the left side than on the right, exactly coincides with the results obtained in the West.

4. Six is the largest number of glands yet found on one person.

5. It is certain that polymastia is inherited and in most cases is transmitted from mothers.

6. In the perfect supernumerary mammary glands secretory process begins at the time of parturition and sometimes it continues for over six months.

*An alphabetical list of works relating to the study of polymastia.*—Ahlfeld, F.: Missbildung und Rückschlag (Centralblatt für Gynäkologie, 1878, No. 17, S. 385); Die Missbildungen des Menschen, Leipzig, 1887; Aerztlichen-Vereinsblatt, Marburg. citiert bei Hansemann. Ammon, O.: Einige Bemerkungen betreffend das Vorkommen der Überzähligen Brustwarzen und die Richtung der Körperhaare auf der Brust (mitgeteilt in R. Wiedersheim's "Der Bau des Menschen als Zeugnis für seine Vergangenheit," 3 Auflage, Freiburg im Bayern und Leipzig, 1902). Archiv für Gynäkologie. 1895, Band xiv., Heft 2. Baraban, L.: Lobules Mammaires Erratiques simulants des Ganglions Axillaires en Cas du Tumeurs du Sein (Revue Médicale de l'Est, Nancy, 1890, tome xxii., p 257). Bardeleben, K. v.: Die Häufigkeit Uberzähliger Brustwarzen (Hyperthelie) besonders beim Manne (Verhandlungen der Anatomischen Gesellschaft, München, 1891, S. 247); Weitere Untersuchungen über die Hyperthelie bei Männern (Verhandlungen der Anat. Anz., 1892, No. 3, S. 87); Uber 600 neue Fälle von Hyperthelie bei Männern (Verhandlungen der Anatomischen Gesellschaft, Wien, 1892, S. 199); Massenuntersuchungen über Hyperthelie beim Manne, Beitrag zur Hyperthelie frage (Verhandlungen der Anatomischen Gesellschaft, Göttingen, 1893, S. 171). Barfurth, D.: Zur Entwickelung der Milchdrüse (Dissertation), Bonn, 1882. Bartels, M.: Überzahl der Brustwarzen (Reichert und Du Bois-Reymond, Archiv für Anatomie und Physiologie, Jahrg. 1872, S. 304, Taf. xi., und Jahrg. 1875, S. 745, Taf. xix. B). Berthérand: Gazette Médicale de Paris, vol. xiv., 1857. Billroth: Die Krankheiten der Brustdrüsen (Deutsche Chirurgie, 1880, Lief. lxi., S. 10). Blanchard, R.: Sur un cas de Polymastie (Bulletin de la Société d'Anthropologie de Paris, 1885); Polymastie (Progrès Médical, 1885, No. 14, ref. i.; Centralblatt für Gynäkologie, No. 36); Sur un cas de Polymastie et sur la Signification des Mamelles Surnuméraires (Bulletin de la Société d'Anthropologie de Paris. 1885); Sur un Cas remarquable de Polymastie Héréditaire (Bulletin de la Société d'Anthropologie de Paris, 1886). Bonnet, R.: Über die Glatte der Haut und der Knäueldrüsen (Bayer Arztliches Intelligenzblatt, 1885); Vergleichende Histologie der Haussäugetiere, herausgegeben von W. Ellenberger, Berlin, 1887, S. 434; Die Mammaorgane im Lichte der Ontogenie und Phylogenie, in Markel and Bonnet's Ergebnisse der Anatomie und Entwickelungsgeschichte, 1892. Ss. 607–657. Brucc, M.: On Supernumerary Nipples and Mammæ (Journal of Anatomy and Physiology, 1879, vol. xiii., pp. 425–448, Table 1.). Burckhard: Uber Embryonale Hypermastie und Hyperthelie, Anat. Hefte xxvi., 1897. Caldwell, W. H.: The Embryology of Monotremata and Marsupialia (Philosophical Transactions, 1887, vol. clxxviii.). Champeneys: Du Développement des Fonctions Mammaires par la Peau chez les Femmes en Couches (Archives de Tocologie, 15 Juillet, 1886). Cohnheim: Vorlesungen über Allgemeine Pathologie, 1882, S. 748. Cooper. A.: On the Anatomy of the Breast, London, 1840. Creighton, C.: On the Development of the Mamma and of the Mammary Function (Journal of Anatomy and Physiology, 1877, vol. xi). Curtis, F.: Le Développement de la Mamelle et du Mamelon après les Travaux les plus Recents (Extrait de la Revue Biologique du Nord de la France. Lille, 1889). Cuvier: Leçons d'Anatomie Comparée, tome v., p. 155. Darwin, C.: Die Abstammung des Menschen, &c., übersetzt von V. Carus, 5 Aufl., 1890, S. 40, Fussnote 38. Davies: London Medical Gazette, January, 1844. Deutsche Chirurgie, Krankheiten der Mamma. 1886. Edwards: Philos. Med. News, 1886. Eulenburg: Real-Encyclopädie der Gesammten Heilkunde, Band xix., Ss. 216–291. Evelt, E.: Ein Fall von Polymastie beim Manne (Archiv für Anthropologie, 1891, Band xx., Ss. 105–112). Fanvelle: Origine de la Polymastie (Bulletin de la Société d'Anthropologie de Paris, 1886). Faye: Norsk. Mag., iv., 1849, Christiania. Fitz-Gibbon: Mann mit 4 Acces. Mamillen (Dublin Quarterly Journal of Medical Sciences, February, 1860, vol. xxix., p. 109; citiert nach Leichtenstern). Flechsig: Dissertation der Polymastia, Schneeberg, 1839. Förster, A.: Die Missbildungen des Menschen, Jena, 1865, S. 48. Frank, L.: Handbuch der Anatomie der Haustiere, 2 Aufl., Stuttgart, 1882, S. 777. Fürstenberg, M.: Die Milchdrüsen der Kuh, Leipzig, 1868, S. 17. Gegenbaur, C.: Bemerkungen über die Milchdrüsenpapillen der Säugetiere (Jenaische Zeitschrift für Medizin und Naturw., 1873, Band vii., S. 204.); Zur genauern Kenntnis der Zitzen der Säugetiere (Morphologisches Jahrbuch, 1876, Band i., S. 266); Zur Näheren Kenntnis des Mammaorganes von Echidna (Morphologisches Jahrbuch, 1883, Band ix., S. 604); Zur Kenntnis der Mammaorgane der Monotoren, Leipzig, 1886; Lehrbuch der Anatomie des Menschen, Band ii., Ss. 521–23. 5te. Aufl., Leipzig, 1892. Gillicuddy, Mc: The Mammæ and their Anomalies (New York Medical Record, art. 10, 1891, vol. xl., No. 15, p. 446). Gluck: Vorstellung in der Berliner Medizinschen Gesellschaft, ref. Berliner Wochenschrift, 1885. Goldberger, H.: Ein Seltener Fall von Polymastie (Archiv für Gynäkologie, 1895, Band xlix., S 272). Gruber: Über die Männliche Brustdrüse (Mémoire de l'Académie Impériale de St. Pétersbourg, 1866). Gult. E.: Handbuch der Anatomie der Haustiere. Stuttgart. 1871. Haacke, W.: On the Marsupial Ovum, the Mammary Pouch, and the Male Milk Glands of Echidna Hystrix (Proceedings of the Royal Society, 1885); Über die Entstehung des Säugetiers (Biologisches Centralblatt, 1889, Band viii. S. 8). Haffter: Milchdrüse in der Wand einer Ovalcyste (Archiv der Heilkunde. 1875). Hamy: Bulletin de la Société d'Anthropologie de Paris, 1885. Handyside: Journal of Anatomy and Physiology, 1872. Hansemann, D.: Polymastie (Verhandlungen der Berliner Gesellschaft für Anthropologie, 1889, S. 434); Zeitschrift für Ethnographie, 1890. Hartung: Uber einen Fall von Mamma Accessoria. Erlangen, 1875. Hennig, C.: Ein Beitrag zur Morphologie der Weiblichen Milchdrüse (Archiv für Gynäkologie, Band iii., 1871); Über Menschliche Polymastie und über Uterus Bicornis (Archiv. für Anthropologie, 1890, Band xix., Heft 3). Heuss, M.: Beiträge zur Entwickelungsgeschichte der Milchdrüsen beim Menschen und bei Wiederkäuern (Jenaische Zeitschrift für Medizin und Naturw., 1873, Band vii., S. 176). Hutel: Virchow-Hirsch's Jahresbericht, 1869. in einem Ref. über Thaxter (Lehrbuch der Chirurgie, 1884, Band ii., S. 114). Hyrtl, J.: Handbuch der Topographischen Anatomie, Wien, 1889, Band i., S. 637. Iwai, T.: Uber die Accessorische Brustdrüse (Mittheilungen der Medicinischen Gesellschaft zu Tokyo, März, 1896, Band x., No. 5); Zur Hyperthelie (ibid., April, 1900, Band xiv., No. 12); La Polymastie au Japon, extrait des Archives de Médecine Expérimentale et d'Anatomie Pathologique, fondées par J. M. Charcot et publiées par MM. Grancher, Joffroy, Lépine, No. 4, Juillet, 1904. Jakowski: Uber die Milchdrüse des Menschen u. der Tiere (Abhandl. d. Krakauer Akademie, math-naturw. Klasse, 1880. Band vii., S. 158). Joseph: Günzburg's Zeitschrift, Band viii., S 105. Kallius, E.: Ein Fall von Milchleiste bei einem menschlichen Embryo. Anat. Hefte, No. 24, 1897. Katayama, K.: Über die accessorische Brustdrüse (Mittheilungen der Medicinischen Gesellschaft zu Tokyo, Juli, 1896, Band x., No. 14). Katz, O.: Zur Kenntnis der Bauchdecke u. der mit ihre verknüpten Organe bei den Beuteltieren (Zeitschrift für Wiss. Zoologie, Band xxxvi., S. 632). Kitt, T.: Zur Kenntnis der Milchdrüsenpapillen unserer Haustiere (Deutsche Zeitschrift für Tiermedizin u. vergl. Pathologie, 1882). Klaatsch, H.: Zur Morphologie der Säugetierzitzen, Band ix., S. 253; Uber die Beziehung zwischen Mammartasche u. Marsupium (Morphol. Jahrbuch, 1891, Band xviii., S. 483); Uber Mammartaschen bei Erwachsenen Huftieren (Morphol. Jahrbuch, 1892, Band xix., S. 349); Uber Marsupialrudimente bei Placentaliern (Morphol. Jahrbuch, 1893, Band xx., S. 276). Klebs, E.: Handbuch der Pathologischen Anatomie, Berlin, 1876, Band i., S. 1162 ff. Kolliker, A.: Mittheilungen der Naturw. Gesellschaft zu Zürich, 1650, No. 41; Beiträge zur Kenntnis der Brustdrüse (Verh. d. med. Physik. Gesellschaft zu Würzburg. N.F., 1879. Band xiv.). König: Lehrbuch d. Spec. Chir., 5 Aufl. 1889, Band ii., S. 63. Krause, W.: Handbuch der Menschlichen Anatomie, Hannover, 1880, Band iii., S. 150. Kuroiwa, T.: My Observation on Supernumerary Mammary Glands (Tokyo Medicinische Wochenschrift, Juli, 1891. No. 692). Kukentbal, W.: Denkschriften der Med. Naturw. Gesellschaft zu Jena, Band iii., Heft 2, S. 355. Laloy: Un Cas Nouveau de Polymastie (L'Anthropologie, 1892). Landois: Lehrbuch der Physiologie. 1893. Langer, C.: Uber den Bau u. die Entwickelung der Milchdrüse bei beiden Geschlechtern (Denkschriften d. Wiener Akademie, 1850, Band iii., Lfg. 2). Laurent: Annales Françaises et Etrangères d'Anatomie et Physiologie, Paris, 1839, tome iii., p. 237. Leclerc: Gazette des Hôpitaux, 1852, N. 85. Lee: Transactions of the Royal Medical and Chirurgical Society, London, vol. xxi. Lee and Thursfield: London Medical Gazette. Leichtenstern: Über das Vorkommen u. die Bedeutung supernumerärer (accessorischer) Brüste u. Brustwarzen (Virchow's Archiv, 1878, Band lxxiii., S. 222). Licetus, Fortunius, De Monstris, 4, Patavii, 1668. Lücke: Pitha-Billroth, 1869, Band ii., Heft 1, S. 281. Luschka, H.: Die Anatomie der Brust des Menschen, Tübingen, 1863, S. 250. Malkmus: Die rudimentäre Beuteltasche des Schafes, Dissertation, Erlangen, 1887, u. Berliner Archiv f. Wiss. Tierheilkunde, S. i., Tierzt, S. 25. Martin, E.: Beitrag zur Lehre von der Polymastie u. ihre Beziehung zur Entwickelung von Brustdrüsengeschwülsten (Langenbeck's Archiv für Klinische Chirurgie, 1892–93, Band xlv., S. 880; Abhandlung über vielbrüstige "Frauen" (Mémoires de Méd. et de Chirurgie Pratiques, citiert nach Neugebauer aa. O., S. 733). Martin, M. E.: Annal. d'Ocul., Tome 1. Maschat, G.: Anomalies de la Mamelle, Thèse de Paris. Meckel, H.: Illustrierte Medizinische Zeitung, 1., S. 142. Meckel, J. E.: Handbuch der Menschlichen Anatomie, 1820; Ornithorhynchi Paradoxi Anatome, Lipsiæ, 1826. Meckel: Path Anat. d. Brustdrüse. Medical Press and Circular, May 27th, 1903. Milnes-Edwards: Leçons sur la Physiologie et l'Anatomie Comparée de l'Homme et des Animaux, Paris, 1870, tome ix., p. 124. Morgan, J.: Description of the Mammary Organ of the Kangaroo (Transactions of the Linnean Society of London, 1833, vol. xvi.). De Mortillet: Bulletin de la Société d'Anthropologie de Paris, 1883. Münchener Klinische Wochenschrift, 1893, No. 18. Natabucci: Politelia (Raccoglitore Medic. Forli, 1891, Ser. v., vol. xi., p. 226). Neugebauer, F. L.: Eine bisher einzig dastehende Beobachtung von Polymastie mit 10 Brustwarzen (Centralblatt für Gynäkologie, 1886, No. 45). Notta: Archives de Tocologie, 1882. Ogata, M.: Guide to Midwifery, October, 1901, No. 65. Otani, S.: Beobachtungen über die Hypermastie (Mittheilungen der Medicinischen Gesellschaft zu Tokyo, Mai, 1899, Band xiii., No. 9); Nachtrag zur Hyperthelie (ibid., Mai, 1902, Band xvi., No. 10). Owen, R.: Philosophical Transactions, 1832. p. 517; ibid., 1834; ibid., 1865, p. 617; Cyclopædia of Anatomy and Physiology, vol. iii., p. 327; Comparative Anatomy and Physiology, vol. iii., p. 769. Pagenstecher, H.: Allgemeine Zoologie, 1881, 4ter Teil, S. 921. Percy: Mémoire sur les Femmes Multimammes (Journal de la Médecine et Chirurgie, par Corvisart, Leroux, &c., année xiii, tome ix., p. 381). Péterquin: Gazette Médicale de Paris, 1837. Petrone, A.: Contribuzione alla Teoria del l'Atavismo in un Caso raro di Polimastia Maschile (6 mammelle), (Progresso Medico, 1889). Puech: Les Mamelles et leurs Anomalies (Progrès Médical, 1885, No. 14); cf. Virchow-Hirsch, Jahresbericht für 1885. Rapin: Revue Médicale de la Suisse Romande, 1882. Rauber, A.: Lehrbuch der Anatomie des Menschen, 5te. Auflage, Leipzig, 1898, Band ii., Abteil 2, Ss. 656–58. Rayer, C.: Origine de l'Homme, 1870. Rein, G.: Untersuchungen über die Embryonale Entwickelungsgeschichte der Milchdrüse (Archiv für Mikroskopische Anatomie, 1882, Band xx., S. 431). Robert: Journal Général de Médecine, tome c., p. 57. Sato, K.: A Remarkable Case of Supernumerary Mammæ (The "Kōseikwan" Medical Magazine, December, 1895, vol. ii., Nos. 11 and 12); About the Supernumerary Mammæ of a Considerable Size (ibid., December, 1897, vol. iv., No. 6); Ein Fall von Regeneration der Polymastie nach einer Operation (Mittheilungen der Medicinischen Gesellschaft zu Tokyo, Oktobre, 1904, Band xviii., No. 20). Sāto, M.: Magazine of the Central Medical Association, December, 1901, No. 44. Schmidt, H.: Uber Normale Hyperthelie Menschlicher Embryonen (Anat. Anz., xi., 23, 24), 1896; Morphologische Arbeiten, herausgegeben von G. Schwalbe. Schultze, O.; Milchdrüsenentwickelung und Polymastie (Sitzungsberichte der Würzburger Physikalisch-medicinischen Gesellschaft, viii., Sitzung vom 7ten Mai, 1892). Siebold: Medicinische Vereinzeitung, vi., 1838. De Sinety: Recherches sur la Mamelle des Enfants Nouveau-nés (Archives de Physiologie, 1875); Deux cas de Polymastie chez la Femme (Gazette Médicale de Paris, 1887). Suedden, W.: On Numerical Anomalies of the Breasts, with Remarks of the Causes of Deformities (Glasgow Medical Journal, vol. x., p. 69). Sutton, J. B.: Evolution and Disease, London. 1890, p. 167. Testut, L.: Note sur un cas de Mamelle Supernuméraire (Bulletin de la Société d'Anthropologie de Paris, 1883); Note sur un cas de Mamelle Crurale (Bulletin de la Société d'Anthropologie de Paris, 1891); Traité d'Anatomie Humaine, Paris, 1894, tome iii., 3 fascicule, pp. 1138–40. Tiedemann: Zeitschrift für Physiologie, I.; Untersuchungen über die

Natur der Menschen, der Tiere, und der Pflanzen (Zeitschrift herausgegeben von Tiedemann und Treviranns, 1831, Band V.). Tillmanns: Specielle Chirurgie, 1894, Band I. Velitz: Orvasi Hetilap, No. 20 (Virchow's Archiv, Band cvii.). Virchow: Discussion bei Hansemann. Volkmann: Beiträge zur Chirurgie, 1875, S. 330. Wiedersheim, R.: Grundriss der Vergleichenden Anatomie der Wirbeltiere, 3 Auflage, Jena, 1893, S. 45; Der Bau des Menschen als Zeugnis für seine Vergangenheit, 3 Auflage, Freiburg im Bayern und Leipzig, 1902. Williams, R.: Polymastism, with special reference to Mammæ Erratæ and the Development of Neoplasms from Supernumerary Mammary Structures (Journal of Anatomy and Physiology, 1891, vol. xxv., Part II., p. 225); Mammary Variations per Defectum (Journal of Anatomy and Physiology, 1891, vol. xxv., Part III., p. 304). Woodmann: Obstetrical Transactions, vol. ix., p. 50. Yoshinaga, T.: Zur Hypermastie (Mittheilungen der Medicinischen Gesellschaft zu Tokyô, Juni, 1899, Band xiii., No. 11).

# SPONTANEOUS ANEURYSM OF THE POPLITEAL ARTERY TREATED BY EXTIRPATION.

By H. A. LEDIARD, M.D. EDIN., F.R.C.S. ENG.,
SURGEON TO THE CUMBERLAND INFIRMARY.

MUCH that has been written upon aneurysms of the limbs, and especially those of the popliteal artery, requires to be revised, in the light of modern methods of dealing with this disease, whether of spontaneous or of traumatic origin. For example, in Vol. LXXXII. of the Transactions of the Royal Medical and Chirurgical Society a paper on extirpation of a large non-pulsating aneurysm of the carotid artery, by the late W. J. Walsham, will be found, together with a very useful table of cases of various aneurysms treated by extirpation. Carotid, femoral, subclavian, inguinal, and tibial aneurysms are tabulated as well as popliteal, but for the present purpose allusion will be made to the 17 popliteal aneurysms only, forming as they do an excellent group for demonstrating the value of treating aneurysms of this artery by extirpation. Of this group, 13 were spontaneous aneurysms and were dealt with by exposure of the sac, ligature of the artery on its proximal and distal sides, and removal of the sac. All these cases came from foreign sources; 11 recovered and two died. The case now placed alongside with this group was treated in the same way.

A man, aged 54 years, a labourer in gas works, came under observation on August 25th, 1905, suffering from a popliteal aneurysm on the right side. Three months previously he strained his right knee and afterwards had always felt pain in the knee and down the calf of the leg when at work. A fortnight before admission to hospital he noticed a swelling behind the knee of about the size of a pigeon's egg; this swelling grew rapidly in size before he came for treatment. Behind the right knee there was a large pulsating fusiform swelling, expansile in all directions; a thrill could be felt over it and with a stethoscope a murmur could be heard. Pulsation and swelling could be obliterated by pressure on the femoral artery.

On August 28th chloroform was given, a tourniquet was applied to the thigh, and the patient was turned on to his face. An incision six inches long was made over the popliteal space; the politeal artery was dissected out above the aneurysm, ligatured in two places, and cut between the ligatures. The artery was cleared below the aneurysm and the same method adopted as above; the aneurysm was then dissected away. The only difficulty met with was due to adhesion of the popliteal vein to the sac of the aneurysm. More than five minutes were lost in the endeavour to separate the union, but this was found impossible and the vein was divided. From the sac an artery of some size passed forwards to the knee-joint. When the sac was just upon cleared it broke off from the distal ligature, showing the degenerated and brittle condition of the vessel. The sac was not opened until the operation was over, and was got away with comparative ease and without damaging its walls. Within the aneurysm there was little or no clot, or any found there was in decolourised flakes of fibrin adhering to the wall. The wall of the sac was as thin as brown paper and the size of the sac was equal to the fist of an infant three months old or to a russet apple. On August 30th the patient complained of cramp in the calf of the leg and a hot burning feeling across the instep and sole of the foot. Circulation in the toes was good. On Sept. 7th the burning feeling and numbness were gone; the stitches were removed. On Nov. 25th a sinus which had persisted was touched with pure carbolic acid. On Dec. 12th the wound had healed. The patient was able to kneel slowly without pain and walk with only a very slight limp.

With regard to the later progress of the case I heard from the patient on April 11th, 1907, when he reported himself as able to walk three or four miles without trouble or without a stick and he was engaged as a gardener and to do light work about a house. He stated that he had not the strength in his leg for any heavy work.

The method of treatment adopted was that which was considered by Walsham to be the ideal way of extirpating an aneurysm, for the whole aneurysm was got rid of and the cure was radical. The only damage done to other structures was due to the adhesion of the popliteal vein to the sac: a possibility to which Walsham drew attention; but it does not seem that cutting the vein is likely to be attended with any evil consequences. Perhaps the reason why reluctance has been shown to performing excision of a popliteal aneurysm is that it was formerly taught that cutting the popliteal vein would assuredly be followed by gangrene of the limb, but here it was the anatomist who spoke and not the surgeon. So often has this important adhesion been found that the surgeon who extirpates a popliteal aneurysm will always be on the outlook for it. In other respects, a popliteal aneurysm will not be likely to have contracted any adhesions. Even in Walsham's case of non-pulsating carotid aneurysm he speaks of it as well encapsuled, though slightly adherent to the neighbouring parts.[1] In short, for a case of uncomplicated spontaneous aneurysm of the popliteal artery excision of the sac will prove a comparatively simple operation. The ages of the cases given in Walsham's table ranged from eight to 63 years, and it is interesting to note that the man aged 63 years did quite well. One death was due to suppuration of the knee and the other to gangrene.

The risks associated with extirpation of popliteal aneurysm are possibly the same as those connected with other methods of treatment. Gangrene of the limb has followed compression of the femoral artery as well as after ligature and will perhaps occur in cases of extirpation. Compression has been stated in the record of cases of popliteal aneurysm to have cured in hours, days, weeks, and months, up to six, from which it may be gathered that considerable uncertainty attends this plan of treatment. Far more certain results have followed ligature of the femoral artery, but failure to cure by this method is also on record. Not only in popliteal aneurysm has ligature failed to cure, but in Henry Morris's case[2] a return of pulsation occurred in a carotid aneurysm after ligature of the carotid, and the old operation of laying open the sac, turning out the clots, and tying the vessels was done, but the sac was not removed.

Given an aneurysm cured by compression or ligature of the femoral so that the sac ceases to pulsate and the clot, if present, contracts, who can say if the cure will be a permanent one, or if trouble will not arise in the future, as in Scott's case,[3] exhibited on April 27th, 1894? A popliteal aneurysm had been treated by compression, flexion of the limb, and finally by ligature of the artery, and was apparently cured. Three years later the tumour began to increase in size and subsequently gangrene of the foot set in. The aneurysm was dissected out and a Chopart's amputation was performed. Primary removal of the aneurysm would appear to have been a better plan of treatment.

I can well understand a false aneurysm giving far greater trouble to extirpate; the tissues have been distended with clot and disguised, the mouth of the wounded artery is not found at once, but it is just in such cases that extirpation of the aneurysm has been attempted and successfully carried out. For example, in THE LANCET of May 20th, 1893, p. 1214, is a note on a case taken from the *Revue de Chirurgie* treated by M. Terrier and M. Hartmann, where a diffuse popliteal aneurysm caused by an exostosis growing from the inner supracondyloid ridge was dealt with by excision of the injured portion of the artery and the patient recovered with full use of his limb.

In Walsham's table under another heading are three cases of popliteal aneurysm in which the sac was opened, clots were turned out, the artery was tied, and the sac was removed; all these recovered. Of popliteal aneurysms with false sacs, Walsham gives a case by Littlewood, where a false sac was laid open, clots were turned out, the true sac was discovered, the artery was tied above and below, and the sac was removed; a troublesome kind of operation in comparison with the simplicity of that for extirpating a spontaneous aneurysm, and if excision is a successful treatment for diffuse aneurysm, the same plan can be used with greater confidence to the spontaneous form, because in the latter a better chance has been afforded for the establishment of the collateral circulation. As examples of the failure of ligature to cure a popliteal aneurysm a case recorded by the late Christopher Heath may be quoted.[4] 14 days after ligature of the femoral the pulsation in the sac was again as forcible as before operation; the aneurysm was excised by Victor Horsley. A second case of popliteal aneurysm was treated by ligature of the femoral by Mr. Heath, but four weeks later Mr. Horsley amputated the thigh for gangrene. Littlewood[5] recorded a case of popliteal aneurysm treated by excision of the sac, and urged this method of treatment of diffuse aneurysms of the arteries of the limbs; he also opined that the same method would meet with favour as the best for treating aneurysms in the same situation before they became diffuse. Before the Leeds and West Riding Medico-Chirurgical Society on March 16th, 1897, the same surgeon showed a man from whom he had excised a diffuse popliteal aneurysm.

---

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxii., p. 225.

[2] Ibid., vol. lxiv.

[3] Transactions of the Clinical Society, vol. xxvi., p. 281.

In five of the cases in the table referred to no previous treatment had been tried, and in some of the others no statement appears on this point. In my case no attempt at treatment was made other than by extirpation; no doubt extirpation can always be fallen back upon as a last resort after the failure of compression or ligature, but it seems to me, in the light of modern surgical opinions, that extirpation should be a first resort rather than the last. Perhaps in the same way that the uncertainty of the truss has led up to the greater security afforded by methods of radical cure for hernias, it may be found that compression, flexion, and tying the femoral will give way to the more satisfactory way of curing an aneurysm, wherever possible, by extirpation. In this respect we shall again be the debtors of Lord Lister, for radical cures of hernia are done as routine operations owing to the safety of aseptic means, and extirpation of an aneurysm loses a very large part of its risk owing to the same means.

Until a sufficient number of cases is collected it will not be possible to make a comparison between the value of extirpation as contrasted with ligature, but the cases recorded from foreign sources are accumulating and before long it will be possible to say more definitely than at present. Tillmans[6] says that the results of ligature of the femoral artery are uncertain and that the surest treatment for popliteal aneurysm is extirpation of the sac. The prognosis of excision of the sac Tillmans considers more favourable in idiopathic and old traumatic aneurysms than in fresh traumatic aneurysms, because in the latter the re-establishment of a sufficient collateral circulation is impeded in consequence of the pressure of the surrounding tissue which is infiltrated with blood.

Without unduly advocating the more modern method of excision of an aneurysm, it may be well to point out that even successful treatment of an aneurysm may not prove to be a permanently successful cure. Some years ago I was consulted about a case of gangrene of the foot and leg in a man between 70 and 80 years of age. I amputated at the knee level and turned out a solid fusiform aneurysm of the popliteal artery at its upper portion. This aneurysm had not been recognised before operation and the gangrene was supposed to be of senile origin. The aneurysm was filled with solid, firm clot and probably contributed to, if it did not actually cause, gangrene. The operation of Antyllus will hardly be introduced again, but the success attending it will lead to a bolder method of dealing with aneurysms in all accessible parts of the body. Antyllus ligatured the vessel above and below the sac, then opened it, and turned out the clots, but did not extirpate. According to Tillmans[7] "the literature of the subject gives, according to Köhler, 14 cases of extirpation of popliteal aneurysms by the method of Antyllus which resulted favourably."

In what cases should extirpation be attempted or done cannot be definitely stated at present, but seeing that the methods employed hitherto are uncertain I think there is good reason for taking immediate recourse to extirpation in all aneurysms in accessible positions, whether subclavian, femoral, carotid, or popliteal, for the results obtained, scanty in number though they may be, are sufficiently encouraging to warrant any surgeon giving the newer method a favourable consideration. Writing in 1895 the article on Aneurysm in "A System of Surgery," edited by Treves, A. Pearce Gould says[8]: "Several cases of excision of aneurysm have recently been recorded and it is probable that this mode of treatment will be employed more frequently in the future than in the century following Hunter's memorable operation."

"Excision," says Bilton Pollard,[9] "is, in my opinion, the best treatment for all aneurysms situated in accessible positions and no aneurysms are more suited to that method of treatment than femoral aneurysm." The popliteal region is one eminently adapted for extirpating an aneurysm, but in other regions less accessible aneurysms have been dealt with in the same manner—for instance, to the late H. W. Allingham[10] we owe a brilliant example set by his successful excision of a subclavian aneurysm in circumstances of far greater difficulty than could ever be encountered in the popliteal region. In 1900 I operated upon a subclavian aneurysm after Allingham's plan, meeting little or no difficulty.[11] The patient returned to his occupation in the same workshop as a fitter, doing the same work and getting the same wage as before, being absolutely cured, and is still at work as a mason's labourer. This result more than anything else induced me to attempt extirpation of the popliteal aneurysm now recorded.

Carlisle.

---

# ACTINOMYCOSIS OF THE APPENDIX.

By A. RENDLE SHORT, M.D., B.S., B.Sc. Lond.,
SENIOR RESIDENT OFFICER TO THE ROYAL INFIRMARY, BRISTOL.

ACTINOMYCOSIS of the vermiform appendix was first observed by Barth who described two cases in 1890; the first case recognised in England was recorded by Ransom in 1892. Since attention has been directed to the location of actinomycosis in the right iliac fossa it has become evident that a number of the cases really originate in the cæcum, and an identical clinical picture may result after perforation. Hence a preferable title would be "actinomycotic perityphlitis" and such will be the scope of the present thesis, though the more usual designation has been preserved above. Three cases have come under my charge in the past year and I describe two more from the annals of the Bristol Royal Infirmary. The notes of the cases are as follows:—

CASE 1.—The patient was a male, aged 14 years. He was admitted on Sept. 28th, 1900, complaining of a painful lump in the abdomen. There was nothing of importance in his previous history. 21 days ago he suffered from pain in the appendix region, two days after a school feast. There was no vomiting. The bowels were costive. The pain had been getting steadily worse and a week ago a lump was noticed. There was no history of swallowing any foreign body. On admission the boy was found to be pale, thin, and looking ill, with much pain. The temperature was 100° F., the pulse was 116, and the respirations were 20. The chest was normal. There was a large, hard, prominent lump occupying the whole of the right iliac fossa from the umbilicus to Poupart's ligament, extending somewhat beyond the middle line. It fluctuated a little and was adherent to the abdominal wall, but the skin was not discoloured. It could be felt per rectum. On the next day an incision was made under chloroform and pus was evacuated from the parietes under the skin; there was a hole through the muscles and a large deep cavity about the cæcum containing much dark fœtid pus. From this a bent pin was extracted. The cavity was surrounded by massive adhesions and the appendix was not found. A tube was inserted. The boy's condition did not improve; he still had a hectic temperature, and fresh collections of pus pointed, and were opened, below the umbilicus and above the pubes, on Oct. 4th, 21st, and 30th. From each foul pus was let out. The cavities, which all communicated, were thrown into one, scraped out, and laid open by flaps on Nov. 10th. On Dec. 4th the fever and discharge continued; the right rectus was cut across and was found to contain pus. Anti-streptococcus serum was now given, the disease being supposed to be due to cocci. On the 20th pneumonia was discovered at the right base, which advanced and spread later to the left base also. On Jan. 11th the patient died.

---

[4] THE LANCET, August 25th, 1894, p. 439.

[5] THE LANCET, Nov. 17th, 1894, p. 1143.

[6] A Text-book of Surgery, vol. iii., 1900, p. 781. Translated from the fourth German edition by Tilton.

[7] Ibid.

[8] Vol. i., p. 623.

[9] THE LANCET, April 27th, 1907, p. 1157.

[10] THE LANCET, June 3rd, 1899, p. 1487.

[11] Transactions of the Clinical Society, vol. xxxiii., p. 246.

*Necropsy.*—The intestines were much matted and the right lower abdomen was full of massive adhesions inclosing loculi of pus. There was an abscess about the tip of the appendix, which was perforated and imbedded in adhesions. The liver contained an abscess of the size of a cricket ball. The pleuræ on both sides were adherent above and contained offensive pus below. The lungs were full of small abscesses. Sections of both lungs and liver showed actinomycosis. Though this had never been found in the discharge from the abdomen, there can be little doubt that the fungus was introduced through the abdomen, presumably by means of the pin.

CASE 2.—A female, aged 43 years. The patient was a widow and was admitted on Oct. 1st, 1902, complaining of pain in the right side of the abdomen. The pain had lasted seven days. Five days ago she was sick. Previously to this illness she had an attack of pain in the left side of the abdomen three years ago "cured" by medicine. On admission she looked healthy; there was no pain. The temperature was 100·6° F. and the pulse was 107. There was a hard, round, dull, tender swelling in the right iliac fossa, not involving the skin. The rest of the abdomen was soft and moving freely. For several days she seemed better and the temperature became normal, though the lump was unchanged. The temperature again reaching 100·5°, on Oct. 7th an abscess far back in the loin, containing half a pint of fœtid pus, was opened and drained through the usual appendix incision. There were massive adhesions. The appendix was not found. She rapidly improved, the wound closed, and she left apparently cured.

On Dec. 2nd the patient was readmitted with an abscess in the right loin above the old operation scar. This was opened and drained. The skin was thickened and brawny, bluish and shiny. On the 22nd and 30th two further abscesses in the right loin were opened. There were now hectic fever and wasting. On Jan. 8th, 1903, there was great induration of the whole of the right loin, where the original abscess about the colon had resolved itself into three foci, the third of which was now opened. Yellow granules were noticed in the pus which proved to be actinomycetes. On Feb. 24th the loin was still indurated and riddled with sinuses, and three fresh spots appeared above the iliac crest. The fever continued at 101° nightly. On March 17th and April 7th fresh abscesses were opened and scraped. On June 20th the base of the right lung was consolidated, the breath sounds and vocal fremitus being absent. The chest wall was bulging and the skin was red and œdematous. Three weeks later a sinus burst over the scapula. On Sept. 3rd seven ounces of pus were evacuated from the chest at the level of the fifth rib. Other abscesses formed and were dealt with in the chest on the right side. On Nov. 11th the patient was discharged. She died "some months later." There was no necropsy.

CASE 3.—A male, aged 14 years. He was admitted on Jan. 7th, 1906, complaining of pain in the abdomen. On Dec. 26th he had pain at the umbilicus, but did not vomit. The bowels had been open regularly since. The boy did not leave work until Jan. 6th, when the pain became worse and was localised in the right iliac fossa. There was no history of swallowing anything. He had had a little abdominal pain in the previous autumn. On admission he was pale and thin but was not looking ill. He walked in. The temperature was 100·2° F., the pulse was 120, and the respirations were 18. The tongue was clean. There was a hard, tender, rounded well-defined lump in the right iliac fossa of the size of a cocoanut; the rest of the abdomen was soft and moving freely. The skin was normal. A diagnosis of appendicitis abscess was made and immediate operation was performed. Immense densely matted adhesions were found. With great difficulty a way was made through these. The caput cæci was found in a mass of adhesions; the appendix was firmly imbedded in omentum and adherent to the transverse colon by its tip. It was ligatured and cut away, but invagination failed. Time one and a half hours. A tube was inserted. The appendix was constricted; beyond this it was thickened. Lying inside it, in a sloughy bit of mucous membrane, was a triangular blackberry thorn one-third of an inch across. On separating the appendix from the ensheathing omentum a few drops of pus were seen. On Jan. 14th there was a fæcal fistula; the patient was still feverish. On the 28th there was still some elevation of temperature at night; the fistula was closed. During the next week it reopened; a small abscess burst at the umbilicus. On Feb. 19th the fever was high and a median incision below the umbilicus let out pus. He continued with discharging sinuses and hectic fever. On April 3rd the chest wall in front of the liver bulged and was red and tender; on the 5th a subphrenic abscess was opened here. Actinomycetes were found in the pus; search in the pus of the other wounds also revealed them. The boy was now very ill. On April 16th he left the infirmary. Three weeks afterwards he died. There was no necropsy.

CASE 4.—A female, aged 16 years. The patient lived in the country. She was admitted on Nov. 20th, 1905, complaining of abdominal pain and a sinus. In June, 1904, a painful swelling formed in the right iliac fossa which spontaneously discharged. She then went to a cottage hospital where she remained for ten months. On four occasions abscesses about the appendix region were opened; the last of these was a large one behind the great trochanter. At one time an appendicular concretion came away. The sinuses all closed. On admission the general condition was good; there was no fever. The chest was normal. There was a discharging sinus midway between the umbilicus and pubes; there were healed scars over the appendix and behind the hip. The hip-joint moved freely. The spine was normal. A week later, the temperature rising a little, chloroform was given and the abdomen was opened in the appendix region. Enormous matted adhesions were found occupying the whole right lower abdomen, and nothing was done. The wound healed but the fever still rose; during December the wounds in the groin and back of the hip broke out again. On Dec. 22nd a median incision was made from the umbilicus to the pubes; the peritoneum was half an inch thick and very adherent to the omentum and bowels. There was an extraordinarily dense mass below it. The appendix was found sloughed off one inch from its base; it was ligatured. The mass was adherent all round the cæcum. The sinuses, which led to the appendix, were scraped. She went steadily downhill, with high fever and free suppuration. An abscess was opened near the umbilicus. On Feb. 2nd dulness was found at the right base; this eventually developed into a subphrenic abscess, which was opened on March 8th but only one drachm of pus was found. On March 23rd the subphrenic region was again explored in front and behind but to no purpose. Soon after this actinomycetes were found in the pus from all the abdominal sinuses. The patient gradually wasted away, with a temperature of 103° every night. On May 5th she went home and died three months later. There was no necropsy.

CASE 5.—A female, aged 25 years. She was admitted on May 14th, 1907, complaining of a painful lump in the abdomen. Eight years previously she had had appendicitis; she was admitted to this institution and an operation was performed. Plastic adhesions surrounding the appendix were then found and nothing was done. Since then she had, on the whole, been fairly well, but had occasional pain for years past in the same place. During the previous fortnight this had been worse and the lump had been noticed. There was no vomiting; the bowels were costive. On admission she was found to be slightly built, pale, and thin; she was very short. The temperature was 99° F. and the pulse was 90; the tongue was clean. The chest was normal. There was a hard, well-defined, tender mass of the size of a cocoanut in the appendix region; the skin was not involved. The rest of the abdomen was normal. A diagnosis of actinomycosis of the appendix was made and on May 17th operation was performed. The bowels were found to be densely adherent to the anterior abdominal wall and an attempt was therefore made to get into any abscess cavity by working from the outer side behind the peritoneum. A spongy abscess was thus entered lying behind the cæcum; from this pus containing yellow granules was evacuated; these on microscoping and cultivating proved to be actinomycetes. A tube was put in. Three days later the sinus became fæcal but only for a day or two. No improvement resulting, a further operation was performed in June and more pus let out. Again the wound became fæcal. On August 26th a large hole in the cæcum was sewn up; the appendix was not found. She died on August 30th. There was no necropsy. All five cases were treated with large doses of iodides, and iodine and hydrogen peroxide locally.

### Frequency of Actinomycotic Perityphlitis.

Grill mentions 77 cases as recorded up to 1895. In 1904 Löwe of Greifswald referred to 68 cases, but as he only gives the names of a few of the original publishers it is impossible to say how many are included both in his list and in Grill's. I have found 27 cases described since Löwe's paper appeared and it is probable that the total number is about 150, of which 27 are English. This is very far from representing the real frequency of the condition. Many cases have been recognised but have not been published. It is highly improbable that the nature of the disease will be realised unless search is made for the granules, and even then they are frequently absent from fæcal or chronic sinuses in undoubted cases. At St. Bartholomew's Hospital, of 650 affections of the right iliac fossa seven were due to actinomycosis. At the Bristol Royal Infirmary, of 380 cases diagnosed as appendicitis five were proved to be due to actinomycosis. In each hospital, therefore, the proportion is between 1 and 2 per cent., but for the reasons given I am confident that this greatly under-estimates the real frequency of the condition. That most of the writers on the subject have seen two, three, or more cases, and that they represent England, France, Germany, Austria, Sweden, Italy, the Argentine, the United States, and Canada, suggests that it is a widespread affection and not so uncommon as the records would suggest.

### Etiology.

*Sex.*—Of 68 cases described by Löwe 49 were male and 19 were female. Of 20 cases recently described in England 13 were male and seven were female. Therefore the proportion is about five male to two female.

*Age.*—Using the same records we find :—

| | |
|---|---|
| Between 0–10 years of age ... ... ... ... ... ... ... ... | 0 cases. |
| ,, 10–20 ,, ... ... ... ... ... ... ... ... ... | 15 ,, |
| ,, 20–30 ,, ... ... ... ... ... ... ... ... ... | 21 ,, |
| ,, 30–40 ,, ... ... ... ... ... ... ... ... ... | 18 ,, |
| ,, 40–50 ,, ... ... ... ... ... ... ... ... ... | 15 ,, |
| ,, 50–60 ,, ... ... ... ... ... ... ... ... ... | 7 ,, |
| ,, 60–70 ,, ... ... ... ... ... ... ... ... ... | 4 ,, |

We notice that after puberty every age is equally liable, from which it of course follows that the disease is most frequently seen between 20 and 30 years. Young children escape ; I do not know of any instances younger than 14 years.

*Occupation.*—A large number of the sufferers are in some way connected with farm life or deal with corn.

*Foreign bodies*, apparently carrying the infection, have been found in at least five cases, two of which are recorded in this paper. The substances in question have been a small husk of corn (Illich), a husk of barley (Ammentorp), a pin, and a blackberry thorn. Cuff has described an actinomycotic abscess of the abdominal wall about a wheat husk which had escaped from the ascending colon.[1] In Regnier's case a foreign body was imbedded in the tumour but its nature could not be determined.

*Nature of the invading organism.*—As has been pointed out by Kellock, it is probable that in some cases what have been described as actinomycetes are in reality another form of streptothrix. In my three cases clubs were distinctly visible.

### Pathology.

*Organ affected.*—According to Poncet and Berard 60 per cent. of cases of actinomycosis of the abdomen have their origin in the right iliac fossa. In many instances it is never possible to discover the exact site of invasion. Of 21 cases tabulated by Löwe in which a definite statement was possible 16 started in the appendix and five in the cæcum. Of 13 cases since described ten started in the appendix and three in the cæcum (all three described by Waring). The proportion is therefore about 3 to 1.

*Nature of the original lesion.*—It is seldom that opportunity arises for determining this. Most usually a small ulcer forms in the mucous membrane, which tends to spread and deepen and is surrounded by a congested area. In this the mycelium has been detected microscopically (Dieulafoy, Kelly, Godlee, and others). In other cases small nodules in the submucous coat may be seen projecting through pigmented mucous membrane which later soften and ulcerate through (Koranyi). In a case described by Thédenot (quoted by Kelly) a slightly swollen appendix was removed when an interval had elapsed after an attack of acute appendicitis, and later the disease appeared in the stump.

*Spread.*—Three types are described. 1. The mucous membrane may be very extensively ulcerated, forming the principal if not sole localisation of the disease (Chiari, Canali, quoted by Daske). 2. The wall of the appendix and cæcum may be greatly thickened without perforation or extension (two cases described by Hofmeister). 3. Perforation is the usual sequence. Acute general peritonitis does not result, but abscesses form and track freely in all directions, enclosed by adhesions of very extraordinary density, more so than in any other abdominal condition. In one of my cases the peritoneum was half an inch thick.

Further spread takes place by *continuity* and by vascular *metastasis*. As regards continuity the number of directions in which the pus may track is extraordinary. Not uncommonly the disease progresses at one point and retrogresses at another, and long radiating indurated scars leading from the appendix to the transverse colon or liver may be left. The following are sites where abscesses may form or point by direct extension : amongst the muscles of the abdominal wall (as in two of my cases) ; in the loin (three of my cases) ; at the umbilicus (two of my cases) ; on the left side of the abdomen (in Gangolphe's case it originally presented in that situation) ; in the hypochondrium ; as a subphrenic abscess (two of my cases) ; in the lungs, pleura, and chest-wall (two of my cases) ; in the groin, buttock, or hip-joint (Grill and others) ; or as a perirenal abscess on the right side. It may involve the bladder and ureter (Ammentorp), or an abscess may burst into the bladder (Boström, Hesse, Billroth) or rectum (quoted by Löwe), or erode the lumbar vertebræ (three cases quoted by Löwe). Benda and others have described secondary thrombosis of the inferior vena cava. Metastasis is principally in the liver where abscesses are very common and may attain a large size. They are often of a spongy character rather than well-defined cavities. Kellock has described a case with abscess of the pancreas.

*Secondary infections.*—It is very common for the sinuses and abscesses to become fæcal. Exhaustion from septicæmia is the usual cause of death. Albuminoid degeneration often occurs.

### Symptoms.

Hinglais's description may be followed.

1. *Initial period of visceral manifestations.*—This consists of vague pains in the right iliac fossa, sometimes associated with intractable diarrhœa. This may be muco-membranous in type (Ransom, Partsch, Langstein). The pain may be severe and relapsing appendicitis will probably be diagnosed. There are no local signs. One case died in this stage after 24 hours (Sokoloff).

2. *Stage of tumour formation.*—The characters of this stage are described in the next section.

3. *Stage of fistula formation.*—Abscesses burst or are opened in the neighbourhood of the original site and dark fœtid pus discharges. In this the granules may be found but they are very often absent, especially if the discharge is fæcal. The best time to look for them is when a new abscess is opened. This stage usually lasts for months, subphrenic or pulmonary abscesses form, and the patient dies from hectic fever and exhaustion. In some cases, however, there is—

4. *A stage of cicatrisation.*—The fistulæ close and cure results. Unhappily this is often only temporary.

### Diagnosis.

Before perforation has occurred, with the formation of a tumour, the diagnosis can only be made by finding actinomycetes in the stools. This has been done by Ransom. I have found the ray fungus in the motions of a patient with abdominal actinomycosis, not of the right iliac fossa. When in a patient over 14 years of age there is a history resembling appendicitis and a large, very hard mass adherent to the deep structures and to the abdominal wall is felt in the right iliac fossa, but the temperature is not high, the pain is slight, and there has been little or no vomiting, actinomycosis should be strongly suspected. On such a clinical picture, added to the fact that eight years previously plastic adhesions had been found about the appendix, I diagnosed actinomycosis in my last recorded case, and at the operation this proved to be correct. If in addition the skin is œdematous, thickened, shiny, and of a purplish-violet tint the probabilities are very great. Further, when after operation for appendicitis massive adhesions are found and secondary abscesses and fistulæ continue appearing for weeks afterwards in the neighbourhood, especially if a subphrenic abscess or abscess of the base of the right lung is suspected, actinomycosis should always be considered a very probable cause. Another point in the diagnosis of the condition is the spongy character of the abscesses, so that very little pus may be got from a large swelling. This character is not present when there is a considerable secondary infection with pyogenic organisms.

---

[1] Brit. Med. Jour., July, 1906, p. 137.

The actual confirmation of the diagnosis, of course, depends on the finding of the ray fungus. It is best seen in a thin layer of pus running down inside a test-tube, the yellow granules, about as large as a pin's head, sticking to the glass. These should be put on a slide, covered with a cover-slip very gently pressed on, and examined unstained. They form transparent areas to the naked eye. The further diagnosis rests with the microscopist.

Sometimes this affection may resemble tuberculous or malignant disease of the cæcum, but in actinomycosis the mass is larger, more fixed, and there are no obstructive symptoms. It may also be confounded with psoas abscess.

### PROGNOSIS.

In my opinion this is much less favourable than English writers have admitted. My own cases have been particularly unfortunate, every one of the five having eventually died. In giving a prognosis the relapsing nature and long duration of the disease are to be taken into serious account. Gangolphe's case when he reported it was said to be recovering; he soon after died. One of my cases was sent out "well"; she came back and died a year later. A patient at St. Bartholomew's Hospital, reported by Waring, was sent out apparently cured but went back and died. A patient of Blascko, reported by Israël, relapsed and died after two years of apparent cure. One of my cases was operated on for appendicitis eight years ago, and though there had been symptoms ever since and a large mass was present that must have taken many months to form only lately has she been seriously ill.

Of 77 cases Grill quotes 22 cured, 10 relieved, and 45 dead. Of 68 cases (overlapping the above to some extent) Löwe quotes 12 cured, 36 dead, and 20 under treatment. Of 13 recent cases 4 have recovered and 9 died. We may conclude, then, that more than two-thirds of the cases die and that even those reported cured are liable to relapse. Most of the so-called cures have been watched for a very short time. Volkmann and Hochenegg have each followed cases for five years, still quite well. When extensive sinuses have formed, with fœtid pus, recovery is nearly hopeless, and the appearance of disease in the lungs or liver is equivalent to a death-warrant. The disease is usually miserably chronic and may last for years. One case died in 24 hours and several have run their course in a month. The average is about nine months. Erving's case lived 13 years.

### TREATMENT.

Having regard to the very grave outlook, a determined attempt should be made completely to remove all foci of the infection if the patient comes under treatment soon enough, and unless such removal is quite impossible the surgeon should be prepared even to sacrifice the cæcum and neighbouring bowel, perhaps with temporary formation of an artificial anus. There is a strong temptation merely to open abscesses and this usually allows the patient to become doomed. Unfortunately, it has generally been found quite impossible by a reasonable sacrifice to eradicate the disease. All that can then be done is to open abscesses as they point. Potassium iodide in large doses is usually given; the wounds may be washed out with diluted tincture of iodine. Illich, von Eiselberg, and Friedrich claim great success with injections of tuberculin. Arsenic and calomel appear to have done good. Waring recommends peroxide of hydrogen as the best application for the sinuses.

I most cordially acknowledge the kindness of Mr. J. Paul Bush, Mr. G. Munro Smith, Dr. J. Swain, and Mr. T. Carwardine in allowing me to publish cases from their wards. Mr. T. H. Kellock also very kindly gave me some details of his cases by letter.

*Bibliography.*—1890—Barth: Über Bauchaktinomykose, Deutsche Medicinische Wochenschrift, p. 742. 1891—Böstrom: Ziegler's Beiträge zur Path. Anat., Band ix., 1. Guder: Revue Médicale de la Suisse Romande, vol. xi., p. 741. Kern: Correspondenzblatt Sweitz, vol. xxi., p. 570. 1892—Lanz: Correspondenzblatt Sweitz, vol. xxii., pp. 307, 339. Ransom: Transactions of the Royal Medical and Chirurgical Society, vol. lxxv., p. 85. Samter: Langenbeck's Archiv für Chirurgie, Band xliii., p. 257. 1894—Ammentorp: Om Actinomykose, Centralblatt für Chirurgie, p. 1074; Zur Aetiologie der Actinomykose, Wiener Klinische Wochenschrift, p. 514. Wolisch: Int. Klinischer Rundschau, vol. viii., pp. 369, 414. 1895—Grill: Uber Actinomykose des Magens und Darms beim Menschen, Brun's Beiträge zur Klinischen Chirurgie, Band xiii., p. 551. J. Israël: Ein Fall von Appendicitis mit nachfolgender Actinomykose. Deutsche Medicinische Wochenschrift. Regnier: Beiträge zur Casuistik der Abdominalactinomykose, Zeitschrift für Heilkunde, Band xv., p. 255. 1896—Fairweather: Brit. Med. Jour., vol. i., p. 1555. Friedrich: Tuberculin und Actinomykose, Deutsche Zeitschrift für Chirurgie, Band xliii., p. 579. Lange: Annals of Surgery, vol. xxiv., p. 371. Latimer and Welch: Transactions of the Association of American Physicians, vol. xi., p. 328. Makins: St. Thomas's Hospital Reports, vol. xxv., p. 135. 1897—Frey: Klinische Beiträge zur Actinomykose, Brun's Beiträge zur Klinischen Chirurgie, Band xix., p. 577. Gangolphe et Duplant: Revue de Chirurgie, vol. xvii., p. 503. Hinglais: Thèse de Lyon, 1897. Karewski: Deutsche Medicinische Wochenschrift, Band xxiii., pp. 294, 312, 331. Sonnenberg: Pathologie und Therapie der Perityphlitis, Leipzig. 1898—Fantino: Contributo allo Studio dell' Actinomycosi Umana, Riforma Medica, vol. xiv., part 2, p. 170. Poncet et Berard: L'Actinomycose Humaine, Paris. 1899—Hofmeister: Verhandlungen der Gesellschaft der Deutschen Naturforscher und Aertze, 1899 und 1900. 2 Th., 2 Hälfte, 113. Ruhrah: Annals of Surgery, vol. xxx., pp. 417, 605, 722. Zimmermann: Wiener Klinische Wochenschrift, p. 644. 1900—Benda: Zwei Fälle von Metastasierender Actinomykose, Deutsche Medicinische Wochenschrift, Band xxvi., p. 70. Bäärnhielm: Hygeia (Stockholm), vol. lxii., p. 545. Ekehorn: Upsala Lakarsaf. Förh., n. f. v., p. 217. Hofmeister: Beiträge zur Klinischen Chirurgie, Band xxvi., p. 344. 1901—Von Beck: Actinomykose des Verdauungsapparates, Centralblatt für Chirurgie, p. 331. Godlee: THE LANCET, Jan. 5th, 1901, p 3. 1902—Daske: Inaugural Dissertation, Greifswald. Thévenot: Actinomycose Appendiculaire, Gazette des Hôpitaux, p. 901. 1903—Eccles: THE LANCET, March 14th, p. 703. Heinzelmann: Brun's Beiträge zur Klinischen Chirurgie, Band xxxix., ii. McArthur and Hollister: Medical and Surgical Report, St. Louis Hospital, p. 66. 1904—Battle and Corner: Surgery of the Diseases of the Vermiform Appendix, London. Bendig: Uber einen Fall vom Wurmfortsatz ausgehender Bauchactinomykose, Leipzig. Dieulafoy: Manuel de Pathologie Interne, tome deuxième, p. 542. Gamgee: A Case of Abdominal Actinomycosis, Birmingham Medical Review, vol. iii., p. 41. Justo: Rev. Soc. Méd. Argentin., Buenos Aires, vol. xii., p. 660. Löwe: Statistisches und Klinisches zur Kenntnis der Actinomykose des Wurmfortsatzes und des Cœcums, Greifswald. 1905—Kelly: The Vermiform Appendix and its Diseases, New York. 1906—Kellock: Transactions of the Medical Society of London. Waring: St. Bartholomew's Hospital Reports, London, vol. xli., p. 197.

Bristol.

---

# TWO CASES OF ACUTE TUBERCULOUS CEREBRO-SPINAL MENINGITIS.

BY T. STACEY WILSON, M.D. EDIN., M.R.C.P. LOND.,
PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM;

AND

JAMES MILLER, M.D. EDIN., M.R.C.P. EDIN.,
VISITING PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM
LECTURER ON BACTERIOLOGY, BIRMINGHAM UNIVERSITY.

THE first of the two cases dealt with in this paper is one of very considerable clinical interest owing to the unusual course which the disease took and the rapid way in which the symptoms developed.

CASE 1.—The patient was a young and apparently healthy country girl, aged 17 years, who was in domestic service in Birmingham. The history of the onset of her illness, as given by Mr. A. E. De Vall of Saltley, with whom one of us saw the case in consultation, is as follows. On March 29th she went to see him, complaining of sore and congested but not ulcerated throat, vomiting, and pains in the limbs and in the back of the neck. The clinical picture was typical of influenza. Three days later he saw her at home and found her about the same but with the addition of headache and constipation. On the next day the vomiting ceased but pain over the bladder was complained of. On April 4th she still had pain over the bladder, and the lower limbs seemed very tender and she did not seem able to move them freely but there was no suggestion of any paralysis. The temperature was 100° F. For the next six days she remained in much the same condition and enteric fever was suspected as the spleen was enlarged slightly, the temperature oscillating between normal and 100°, and the patient being at times delirious. The pains had ceased in the arms but there were still pain and tenderness in the legs. On April 10th, 13 days after the onset of her illness, the tenderness of the legs increased and she could not move them without great pain. On the following day retention of urine supervened and the bowels were moved involuntarily and she became more drowsy and apathetic. On the 13th she had a slight convulsion involving the right side only which lasted some few minutes and was followed by unconsciousness for half an hour. A report upon the blood had been received from a trustworthy laboratory and Widal's reaction was stated to be positive. The diagnosis was now influenza or enteric fever complicated by meningitis and one of us again saw the patient on the afternoon of this day. She was a well-nourished girl. She was not fully unconscious and put out her tongue when told to do so, but was unable to answer questions other than the very simplest ones. She resented any passive movement of her head, especially any forward bending of it, which caused great pain. No definite paralysis of the arms and legs could be detected apart from her weakness and drowsiness. There was considerable tenderness of the legs but they could be moved without much pain so as to test for Kernig's sign which was slightly present on the right side but not on the left. Examination of the ears showed some congestion of the membranes with serous effusion but no suppuration. The pupils were dilated and equal with a sluggish reaction to light. There had been no complaint of any numbness or alteration of sensation and she was not conscious enough for any careful testing of the sensibility. On the evening of this day (April 13th) she was removed to the General Hospital, Birmingham, a distance of some two miles, and on her reception there it was found that there was complete paralysis of both legs with flaccidity and complete anæsthesia below the umbilicus except on the outer side of the left leg. On the left side the knee-jerk was absent and the plantar reflex extensor. On the 14th she was in much the same condition, semi-delirious, but at times was able to answer questions rationally. There was no paralysis of the arms and the grasp was good on both sides, and sensation was good above the ninth dorsal segment. On the 15th the arms became paralysed and the respiration suddenly began to fail, ceasing within an hour from the first onset of dyspnœa and cyanosis. The heart was acting well five minutes before the cessation of the respiration, but it ceased beating two minutes later in spite of artificial respiration.

The case clinically when first seen was to all appearance one of influenza complicated by meningitis and the acute ascending myelitis. The positive Widal's reaction seemed in all probability to be an error. In the General Hospital some days later the reaction was negative.

*Necropsy.*—The post-mortem examination was held on April 16th. The whole body was examined. There were some catarrh of the small intestine and some slight enlargement of the mesenteric glands but neither by the naked eye nor microscopically was any evidence of tubercle found. The liver, spleen, and kidneys appeared congested and the heart muscle was pale. On opening the dura mater the spinal cord was found to be slightly adherent to the pia arachnoid by means of a sticky exudate. The pia arachnoid throughout the cord was opaque and grey in colour. Some of the vessels appeared congested when cut across but as a rule they showed themselves on the surface as thickened white lines. The nerve roots were also thickened. The white matter of the cord, especially in the upper cervical region, was soft and almost fluid. The line of demarcation between grey and white matter was indistinct. The grey matter was pale and soft. Portions of the cord fixed in formalin were cut in paraffin and stained with various methods. Other portions after three days' fixation in formalin were treated according to Marchi's method. The following is a record of the microscopic appearances:—With regard to changes in the pia-arachnoid, there was a well-marked distension of the smaller vessels of the membranes and nerve roots, but the larger ones, both arteries and veins, showed a striking inflammatory thickening of their outer coat and in places also of the middle and inner coats. The thickening was due to the presence of large numbers of cells, chiefly large with a fair amount of non-granular protoplasm; there were also small round cells and a few polymorphonuclear leucocytes. In places the cells were so arranged as to form typical tubercle follicles and, rarely, giant cells were to be found in their centres. In other places the cells were seen to be in process of breaking down and forming areas of necrosis. Tubercle bacilli were to be found both in the cellular and in the necrotic areas but they were not numerous. There was also a well-marked cellular infiltration of the sheaths of the nerves, the cells being chiefly of the lymphocyte variety and penetrating between the individual nerve fibres. Marchi specimens showed well-marked degenerative changes in the nerve roots. Outside the vessels and nerves there was also a well-marked cellular infiltration of the membranes but an even more marked accumulation of a coagulated material which did not as a rule give the staining reaction of fibrin. In the meshes of these coagula there were large numbers of cells, a considerable proportion of which were polymorphonuclear leucocytes. As to changes in the white matter, there was a dilatation of the small vessels entering the cord and, in addition, a marked accumulation of cells, chiefly mononuclear, round them. There were also accumulations of inflammatory cells at the margin of the white matter independent of blood-vessels. There was some evidence of degenerative changes in the myelin sheaths of the fibres in specimens stained with haematein and van Giesen but in the Marchi preparations this change was found to be well marked and diffuse. As to changes in the grey matter, in suitably stained preparations the ganglion cells showed degenerative changes of all degrees. In Marchi preparations the fibres of the grey matter also showed extensive degeneration. The brain weighed 43 ounces. On removing the organ a marked accumulation of turbid fluid was found at the base. Some of this was drawn off with proper precautions and examined by cultural and film methods. Cultures were made on agar, blood agar, and on nasgar, but there was no growth in any of the tubes. Films stained by Gram's method and by carbol-thionin showed no evidence of any organisms. The cells present in the exudate were chiefly polymorphonuclear leucocytes and large endothelial cells. Films were not stained by the Ziehl-Neelsen method. This turbid fluid in the subarachnoid space extended over the cerebellum and up the Rolandic fissure on either side. On the vertex the vessels of the pia mater were injected but there was no obvious exudate. Nowhere were there distinct tubercles to be seen. The vessels of the pia arachnoid towards the base were pale as in the cord. With regard to the microscopic appearances, the cerebellum pia arachnoid showed infiltration with inflammatory cells, more marked around the vessels. There were a few giant cells and some caseous areas. In some places the white matter of the cerebellum was infiltrated with cells. The pons showed a similar condition with extensive infiltration of the pia arachnoid and implication of the white matter. Portions of the cortex from the Rolandic area on the left side and from the vertex on the right showed similar appearances but less marked. Microscopically the kidneys showed a condition of early catarrhal nephritis. The liver showed an acute hepatitis with cloudy swelling and separation of the liver cells from one another, also infiltration of the portal tracts and lobules with inflammatory cells. The intestine showed acute catarrh but in none of the organs were tubercle bacilli. Examination of the middle ears showed no evidence of inflammatory changes.

The above case is one of tuberculous meningitis and myelitis. Its chief interest pathologically is in the fact that to the naked eye the appearances were not suggestive of tubercle. There was no obvious point of entrance found, but too much stress cannot be laid on that, as one did not examine every joint and bone. At the same time, the case appears to be one in which the meninges were the point primarily affected, the changes in the nerve roots and in the white and grey matter of the cord being relatively insignificant and apparently secondary.

CASE 2.—This case, although one of acute cerebro-spinal meningitis of tuberculous origin, was clinically one of cerebral meningitis, tuberculosis being from the symptoms quite a probable diagnosis. The presence of double otitis media in this case raised the possibility of a local origin for the cerebral condition, and therefore an exploratory trephining was done but without definite result. The patient was a boy, aged seven years, who was admitted to hospital with frontal headache and vomiting, and a temperature of about 101° F., the illness having lasted seven days. This illness began with vomiting and pains in the head. He was not seen by a medical man till the ninth day and then his condition was so suggestive of enteric fever that he at once sent him to hospital. For the first few days in hospital no nervous symptoms showed themselves, except the headache and the vomiting, which was of cerebral type, and also absence of both knee-jerks. There were some bronchitis and symptoms suggestive of damage to the left lung resulting from a severe attack of pneumonia which he had when two years old. There was suppurative otitis media with perforation of the left membrane and the right ear showed signs of inflammation but no suppuration. On the fourteenth day of his illness twitching of the left arm and leg and left side of the face commenced and soon developed into a unilateral convulsion with only slight involvement of the right side. This was followed by unconsciousness and dilatation and inequality of the pupils. Kernig's sign and rigidity of the neck were also present and lumbar puncture showed increased pressure and signs of spinal meningitis. As the patient was rapidly getting worse and there were signs of increased intracranial pressure he was trephined on the right side, above and behind the ear. Nothing beyond the increased intracranial pressure could be detected. He died on the following day and the post-mortem results were as follows.

*Necropsy.*—The post-mortem examination was held on May 12th. The whole body was examined. There was a trephine opening on the right side behind the ear. The lower lobe of the left lung showed collapse and dilatation of the bronchioles. The rest of the lung and the organ on the right side showed no obvious change. At the base of the left lung there was an enlarged gland with grey areas scattered throughout and one large necrotic focus. Microscopically the gland showed typical areas of giant cell formation and caseation. Tubercle bacilli were found in considerable numbers. The liver showed marked cloudy swelling with irregular paler areas scattered through it. The kidneys showed a similar condition. The spleen was enlarged, soft, and flabby. Microscopically these organs showed no change of special interest. The arterioles of the spleen, however, showed hyaline degeneration. With regard to the spinal cord, on opening the dura mater a large amount of turbid fluid was found. On microscopic examination polymorphonuclear and mononuclear leucocytes and endothelial cells were found in large numbers, also a few tubercle bacilli. The pia arachnoid was pale and the vessels appeared thickened but there were no tubercles. Sections of the cord showed well-marked inflammation of the pia arachnoid. There was exudation of a fibrinous-looking fluid containing numerous cells, chiefly mononuclear, but also polymorphonuclear. The cellular infiltration was most marked around the vessels and nerves. In places the cells were aggregated into definite tubercle follicles with occasional giant cells. Not infrequently the nerve roots were seen invaded by such cellular areas. Tubercle bacilli were fairly numerous in the giant and epithelioid cells. The white matter of the cord showed some cellular infiltration towards the periphery but this was not so marked as in the previous case. Early degenerative changes were to be found in the cells of the grey matter. Marchi specimens showed disseminated degenerative changes in the nerve roots and towards the periphery of the white matter but these were not nearly so marked as in the previous case. As to the brain, on opening the dura mater the convolutions were found much flattened and the vessels injected. There was a great excess of turbid fluid towards the base of the brain. There were irregular areas of opaque exudate to be seen in the subarachnoid at the base extending up the Rolandic fissures on either side and also over the vertex. The ventricles were distended with turbid blood-stained fluid. For microscopic examination portions were taken from both Rolandic areas, from the vertex, the cerebellum, and the pons. All showed a well-marked meningitis with sero-fibrinous exudate containing numerous cells with occasional areas of necrosis. Tubercle bacilli were found in these. No giant cells were found. There was some degree of cerebritis immediately under the pia arachnoid. Both middle ears contained seropurulent fluid. Suitably stained preparations showed numerous diplococci but no tubercle bacilli.

The second case is somewhat similar to the first but the changes are more marked in the brain than in the cord. Further, there is a source of infection in the caseous bronchial gland and probably also in the middle ear.

The reports of the post-mortem examinations are by Dr. J. Miller.

Birmingham.

# OBSERVATIONS FROM THE SOUDAN.

BY L. BOUSFIELD, M.A., M.D. CANTAB.,
LIEUTENANT, R.A.M.C.; BIMBASHI, EGYPTIAN ARMY.

## I.—MEMBRANOUS ULCERATION, DUE TO SPIROCHÆTÆ, SIMULATING DIPHTHERIA.

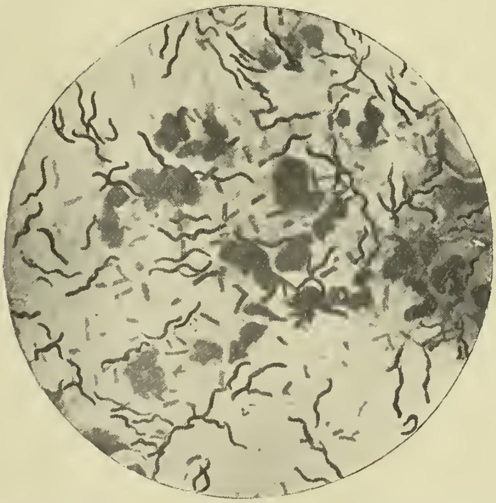
THE words "due to spirochætæ" appear in the heading of this article, though perhaps they should be replaced by the expression "associated with the presence of spirochætæ" as I have not yet attempted to produce the condition artificially, and so it cannot be stated definitely that spirochætæ are the exciting cause. However, there is good reason for considering that this condition is caused by spirochætæ in that they appear in enormous numbers in the swabs taken from the ulcerations and in some cases practically in "pure culture," though always associated with the bacillus fusiformis. Some films show such vast quantities, twined and matted together, that only at the periphery is it possible to examine individuals carefully.

The condition resembles closely, or is the same as, that described by Vincent[1] in 1898, but these cases seemed worthy of being placed on record for three reasons: first, this condition has not, as far as I know, been reported from this region; secondly, four similar ulcers in the buccal cavity and three (?) from the conjunctival sac are here described; and thirdly, there are certain differences between the three tonsillar cases and those reported by Vincent.

These differences are now given: 1. Fœtor was evident in his cases, while this was absent in all enumerated in this article. 2. His cases were practically all unilateral, while two out of three were bilateral. This point is of importance, for H. W. Bruce[2] states that mild cases are invariably unilateral. 3. Vincent mentions that bacilli fusiformes were sometimes unassociated with spirochætæ and often outnumbered them. In these cases the two were always associated with one another and the spirochætæ usually enormously outnumbered the bacilli. 4. Pyogenic cocci were almost invariably present in his cases, while in several cases of this series the infection was practically pure with spirochætæ and bacilli fusiformes. 5. He mentions extension to the soft palate and uvula, and in none of my cases was this present, perhaps owing to the cases being seen early in their course. 6. Vincent makes no remark about the urine, but Bruce mentions albuminuria in one out of ten of his cases. Albumin was present in two out of the three cases of tonsillitis mentioned in this article.

The number of cases is small and contains the following types: (*a*) Tonsillitis—(1) unilateral, one; and (2) bilateral, two. (*b*) Ulcers in buccal cavity—(1) opposite the last molar tooth of the lower jaw, three; and (2) in front in the lower fold of the mucous membrane, one.

The best way of describing this condition will be to give a *précis* of one case. An Egyptian nafar (soldier), aged about 23 years, reported sick with a sore throat. He stated that he had had a sore-throat for about 24 hours but beyond that made no complaint. On examination a thick yellowish-white membrane of about the size of a sixpenny piece was found adherent to the left tonsil. On removing the membrane a bleeding surface was exposed, showing considerable destruction of the underlying tissues. The ulcer thus formed was deep with ragged edges. The glands behind the left angle of the jaw were slightly enlarged and tender. The pharynx was not generally inflamed to any marked degree. His temperature was 100° F., his pulse-rate



Reproduction of a micro-photograph of a pure infection stained by methylene blue. Many spirochætæ in the field did not appear on the negative. The bacilli are bacilli fusiformes. No large clumps of spirochætæ appear in this field. The photograph was taken by Sergeant A. Gibbons, R.A.M.C. Objective $\frac{1}{12}$; ocular No. 8.

---

[1] Sur une Forme Particulière d'Angine Diphtéroide, H. Vincent, Archives Internationales de Laryngologie, d'Otologie, et de Rhinologie, Jan. et Fev., 1898.

[2] H. W. Bruce: Vincent's Angina, THE LANCET, July 16th, 1904, p. 135.

was 91, and these with the local condition made me diagnose the case as one of diphtheria. He showed no other signs of disease, especial attention being paid for those of syphilis. He had had no vomiting, declared he had suffered from no similar attack and knew of no others with a like illness. I gave orders for the man to be isolated at once in a tent and was much surprised at the indifference with which the Egyptian medical officer, who had had considerable experience in the Soudan, looked upon the case. On questioning this officer he stated that he had often seen such throats, that they were only slightly infectious, and that they were not diphtheria, indeed that diphtheria is seen but rarely in the Soudan. However, in spite of this the soldier was isolated. The urine was examined and found to be acid, of specific gravity 1020; albumin amounted to ⅕th but no sugar was found; microscopically some red and white corpuscles were seen but no bilharzia. The presence of the albumin made me still more convinced about the correctness of my diagnosis. Several slides were made from a swab and on examination presented much necrosed tissue with leucocytes, an enormous number of spirochætæ, many bacilli fusiformes, and a very few cocci, some in chains, some in clusters. There were no diphtheria bacilli. Some more slides were made and stained by the following methods: (1) Methylene blue; (2) Leishman's stain; (3) carbol-fuchsin; and (4) Neisser's stain. One film was stained with warm carbol-fuchsin for 20 minutes, decolourised with 1 per cent. sulphuric acid, and counter-stained with methylene blue, with the result that some free round or slightly oval bodies with a few oval, clearly defined masses in the bacilli fusiformes retained the carbol-fuchsin, though all the rest was thoroughly decolourised and took up the methylene blue satisfactorily; these bodies stained as, and had the appearance of, spores. Vincent found no spores, though many vacuoles, in the bacilli; however, I firmly believe that genuine spores were present, but the matter requires further investigation before anything definite can be stated. Cultures on agar smeared over with serum were made but showed no diphtheria, and the spirochætæ were in various stages of degeneration and disintegration. The blood appeared normal, there was no leucocytosis, and no bacteria or spirochætæ were found in the films examined.

The patient was given an aperient and an iron tonic, and the ulcer was locally treated by swabbing with carbolic 1 in 20 three times daily, a potassium chlorate gargle also being used frequently. On the following day the temperature was 99° and the local condition had improved. The patient had no further elevation of temperature and was quite convalescent after five days, when he was discharged back to his battalion. The urine on discharge showed no trace of albumin and no bilharzia had been found during his five days' stay in hospital.

In all the other cases the membrane had the same thick yellowish-white appearance and left a ragged bleeding surface on removal. All healed readily under appropriate treatment, except one ulcer opposite the last molar tooth which, there were reasons for thinking, was not having proper attention paid to it, for when the swabbing was properly and energetically carried out, the ulcer healed within a week.

In the cases where the tonsils were affected the temperature was only raised to 100°–101°, while in the subjects with ulcers in the mouth the temperature only reached 99°–100°, probably due to the part being less vascular and so the absorption of toxins was less pronounced. Albumin was present in two out of the three cases where the membrane was situated on the tonsils but was absent in those situated on the buccal mucous membrane. The ulcers around the last molar were not associated with decay of that tooth and in all the cases dental caries was slight or absent and the teeth were in a clean condition. The cases of tonsillitis occurred separately and must be, I think, very slightly, if at all, infectious. There was a slight epidemic of follicular tonsillitis, 12 men, all coming from the same barrack-room, reporting sick one morning, but though several cases were examined microscopically I could find neither spirochætæ nor bacilli fusiformes, only many cocci such as one meets in the ordinary cases of follicular tonsillitis.

The spirochæta differs from the spirochæta pallida in the following points: (*a*) it readily stains after from two to five minutes; (*b*) it is considerably thicker and bigger; and (*c*) it has fewer and coarser curves, which usually number from three to six. The length varies from 15 to 25 or 30 $\mu$, the ends are tapering, and it is perhaps the spirochæta buccalis. Some individuals seemed to be undergoing transverse fission but none showed any signs of longitudinal division. I could not distinguish any signs of an undulating membrane but some had one or more dots apparently chromatin. The spirochætæ were not only found on the surface of the membrane but also in the deeper layers after it had been removed, though present in fewer numbers.

These cases occurred during the hot weather and no cultures were attempted except a few on agar smeared with serum, which were kindly incubated for me by Dr. Andrew Balfour at the Wellcome Research Laboratories; in none of these were diphtheria bacilli found and the spirochætæ showed no signs of further development but were degenerated and undergoing disintegration. The spirochætæ were associated in all cases with the bacillus fusiformis, and this is worthy of note in that the same combination is frequently found in primary syphilitic lesions, in pyorrhœa alveolaris, and in Vincent's angina.

Though careful search was made for the bacilli changing into spirochætæ the only points noted were that a few bacilli had the chromatin mass at one end and the blue body seemed drawn out into a long tail which took up the red colour with Leishman's stain; further, some bacilli seemed more or less degenerated with the chromatin more or less scattered and in these cases the bodies tended to take up the red colour rather than the blue. Whether there is any direct relationship between these two or only a condition of symbiosis has yet to be definitely decided.

Besides the cases already mentioned there were three others with similar membranous ulcerations in the conjunctival sac occurring mainly on the parietal membrane, and all, without exception, in the lower sac. These cases were not included in the list, for although smears were taken and set aside only one slide was examined, and that casually, and found to contain spirochætæ in profusion, while the others were unfortunately mislaid and lost owing to my having to leave Khartoum suddenly and on my return I was unable to find them. However, although spirochætæ were present in one (whether associated with the bacillus fusiformis I cannot remember), yet I fully believe all the others had spirochætæ, as the membrane had the same characteristics, thick, yellowish-white, which on removal left a bleeding surface—to the naked eye entirely like the conditions already described. Unfortunately, the urines of these cases were not tested.

## II.—Intractable, Slow-spreading, Destructive Ulcer of the Penis.

Three such cases have come under my observation, one going on to the complete destruction of the penis, the other two to considerable loss of substance (from 1 to 2 inches). All the cases occurred in Soudanese. The ulcers were large (the smallest at least of the size of a shilling) when the patients came under treatment and were situated on the glans penis or in the preputial fold. The first case was under the treatment of Captain S. L. Cummins, and I only saw the end of the disease after practically the whole of the penis had been destroyed; the other two cases were under my own care.

The ulcers had no covering slough, exuded a serous fluid, which was, however, at times slightly purulent; the edges were slightly undermined, though here and there raised, and the bases were indurated to a slight degree. They were practically painless, the lymphatic cords were not thickened, and the inguinal glands were but slightly enlarged. The patients showed no signs of syphilis, and although in hospital for several months exhibited no signs of this disease in spite of having no anti-syphilitic treatment.

The first case that I had from the beginning under my own observation was considered to be simply an enlarged, neglected, soft sore, but finding that week after week, in spite of all kinds of treatment, the ulceration steadily spread, destroying the surrounding and underlying tissues, including the urethra, it was found necessary to reconsider the diagnosis. Smears from these two cases were examined on several occasions, sometimes taken from the surface, sometimes after the superficial tissue had been scraped away, and were found to be composed of necrosed tissue, many cocci, mainly diplococci, and a large number of bacillus fusiformes. There were no bacilli giving bipolar staining similar to Ducrey's and no spirochætæ were found. There was no Giemsa solution, but "pallida" was stained for by prolonged Leishman's staining.

The various treatments employed were: 1. Dusting with boric or iodoform powder. 2. Hot boric fomentations every three hours. 3. Hip bath with perchloride of mercury solution ($\frac{1}{4000}$) three times daily for from one to one and a half hours at a time; on one occasion a local bath was used for 24 hours consecutively, at the end of which time the patient presented symptoms of poisoning (intestinal cramps, vomiting, and diarrhœa). 4. Lysol and carbolic baths. 5. Cauterisation with silver nitrate stick. 6. Very extensive scraping followed by swabbing with pure carbolic. 7. After all these methods had failed mercury and iodides with local antiseptic treatment were given without any results (second case.)

It spite of treatment the condition spread continuously and steadily and the first two cases seemed to get well owing to the destructive process coming to a natural end rather than to a termination procured through treatment. The third case came to hospital and proceeded just as the others had done, and after some weeks about one and a half inches of the penis had been destroyed and the only hope seemed to be that nature would step in and cause the process to end. Fortunately, a new Egyptian medical officer took charge of this ward, and he suggested trying turpentine. This was accordingly done, and the ulcer, which had been spreading imperceptibly but steadily for nearly one and a half months, began at once to present a more healthy appearance and was almost healed in a week. The oil of turpentine was applied on small lint pads to the ulcer. The oil of turpentine was probably old, but how old I cannot say, nor do I know whether it was American, German, or other particular kind; these points are mentioned because the properties of turpentine are said to vary both with age and with the species of pinus from which prepared. Perhaps the curative action was due to hydrogen peroxide, which turpentine produces with air in the presence of water. Unfortunately, no new cases have come under observation and so it is difficult to say whether the rapid healing was a coincidence or really due to the action of this drug; however, the Egyptian medical officer stated that he had treated other similar cases with this drug with like good results.

This seems worthy of recording, since the results of this type of ulceration are appalling, and if met with in other parts of the world the treatment by turpentine (or perhaps hydrogen peroxide) might be of great value.

Very few cases of phagedæna of the penis have come under my observation and none in the Soudan, and in these the condition was very rapid, showing much sloughing; the patients were debilitated and presented symptoms of toxic poisoning. These cases presented an entirely different picture, the destructive process continued imperceptibly but steadily week by week, and in the first patient month by month; the patients were not debilitated, and showed practically no signs of toxic poisoning.

In dealing with natives it is often difficult to know whether they are carrying out orders when one's back is turned, but in these cases the anxiety shown by the patients at the possible total loss of an important organ was very evident and there was no reason to believe that the various treatments were not thoroughly and conscientiously carried out.

I was unable to find out whether these ulcers resulted from sexual intercourse, but in all probability they did. Whether such a condition obtains amongst the female population I do not at present know.

There was no reason at any time in any one of these subjects to raise the diagnosis of epithelioma, and the subsequent course disproves such a condition. Further, malignant disease, from my own observations and from what has been told me by medical men of large experience in this region, is extremely rare amongst the natives of the Soudan.

---

THE BRISTOL GENERAL HOSPITAL.—The half-yearly meeting of the governors of the Bristol General Hospital was held on Sept. 9th under the presidency of Mr. J. S. Fry. The chairman stated that the daily average of in-patients for the past six months was 180·6, the highest on record. The financial statement was satisfactory. £16,210 have been received towards the special appeal made for the sum of £18 000 which was required for carrying out several much-needed improvements in the institution. The chairman alluded in sympathetic terms to the great loss which the hospital had sustained through the death of Dr. E. Markham Skerritt, whose "life had been well and wisely spent."

---

# IRREGULARITY OF THE PULSE IN DIPHTHERIA.*

By OWEN H. PETERS, M.D., CH.B. MELB., D.P.H. LOND.,
RESIDENT MEDICAL OFFICER, CITY ISOLATION HOSPITALS, NOTTINGHAM.

THE well-known occurrence of heart symptoms in diphtheria naturally leads the practitioner to pay special attention to the pulse, with the result that many a casual observer has regarded the frequent occurrence of irregularity as the most striking feature of the pulse in diphtheria. It will be shown that this fact has, however, little special significance and is really due to the great incidence of the disease in children, especially those of from four to five years of age, who appear commonly to exhibit this symptom after any febrile disturbance and often in apparent health.

An examination of the literature of diphtheria will impress one with the great importance attached to this sign wherever and whenever it occurs. It never seems, however, to have occurred to writers or clinical observers to doubt but that all irregularity of the pulse was the specific effect of the disease in question. No notice has been taken of the fact that it is so common in other diseases of childhood, and its comparative absence in adult cases seems to have been passed by without comment. All forms of irregularity being thus grouped as of an equally serious nature, it will be understood that some have gone so far as to suggest that patients should be kept in bed at least three months should any irregularity continue.[7] Estimates as to the percentage occurrence of irregularity of the pulse in diphtheria differ widely. Hibbard,[2] in a review of 700 cases, gives 10 per cent., but adds that "some cases were doubtlessly not recorded." The usual quotation is, however, much above this figure, and Villy,[3] who carefully followed out 177 cases, found it as high as 87·5 per cent. That this does not overshoot the mark is suggested by my own observations in 92 cases laboriously examined throughout the stay in hospital; over 80 per cent. were found to have had at some time definite irregularity. The wholesale occurrence of this sign at once suggests the inquiry as to what extent it might be attributed to specific affection of the heart.

In order to determine this point a comparison was established between cases of diphtheria and scarlet fever. This might be considered an instructive comparison, since there is a great contrast between these diseases as regards their cardiac effects. Scarlet fever does not seem to have much effect upon the myocardium if we are careful to select those cases only where the temperature falls in seven or eight days with no complications. So that with such a selection the toxin of each disease has acted for a similar time. When the temperature is sustained, as it often is, for a much longer period, and especially with adjacent pericarditis and endocarditis, there is then the real danger of serious myocarditis in scarlet fever. Pathological findings seem to confirm this view. A comparative investigation has recently been made by Aschoff[4] and Tawara of the changes in the heart wall in 112 cases taken from 13 different diseases. "Amongst these different groups of diseases it was only in the cases of diphtheria that at all regularly distributed parenchymatous modifications were found. In the cases of scarlet fever, measles, tuberculosis, &c., no alterations worth mentioning were found. In our typhoid cases in particular we practically failed to find any interstitial reaction contrary to the published statements with regard to the frequency with which myocarditic alterations occur in typhoid." This quotation is interesting as establishing a comparison between diphtheria and the other infectious diseases in the intensity of the cardiac affection and is the more valuable as the work was all done by one individual. In comparing the two diseases 92 cases of diphtheria and 95 of scarlet fever were taken consecutively from those that recovered in the order of admission into hospital after excluding protracted cases of the latter disease and those with pericarditis and endocarditis. They were arranged in two groups according as the pulse had been "regular" or "irregular" at any period throughout the disease. An easy standard was taken for the first group; those pulses that had been noted as slightly irregular on two or three occasions only were classed as "regular." All others were classed as "irregular." The result of the investigation showed almost identical results for the two diseases. Amongst those aged five years and under none were found "regular." Amongst those over 25 years of age none were found "irregular." In the age periods between 5 and 25 years the irregularity decreased in proportion to the age, but of the two diseases the greater frequency of irregularity was actually exhibited by the scarlet fever cases.

---

* The superior figures refer to the bibliography at the end of the article.

*Cases of Diphtheria.*

| Ages (inclusive). | Number of cases. | Regular pulses. | Irregular pulses. | Percentage incidence of irregular pulses. |
|---|---|---|---|---|
| Ages 1–5 years. | 44 | 0 | 44 | 100 |
| ,, 6–10 ,, | 23 | 6 | 22 | 78 |
| ,, 11–15 ,, | 8 | 4 | 4 | 50 |
| ,, 16–21 ,, | 6 | 3 | 3 | 50 |
| ,, 22 upwards. | 6 | 5 | 1 | 16 |
| Totals ... ... ... | 92 | 18 | 74 | 80 |

*Cases of Scarlet Fever.*

| Ages (inclusive). | Number of cases. | Regular pulses. | Irregular pulses. | Percentage incidence of irregular pulses. |
|---|---|---|---|---|
| Ages 1–5 years. | 37 | 0 | 37 | 100 |
| ,, 6–10 ,, | 34 | 3 | 31 | 91 |
| ,, 11–15 ,, | 10 | 5 | 5 | 50 |
| ,, 16–21 ,, | 5 | 2 | 3 | 60 |
| ,, 22 upwards. | 9 | 7 | 2 | 22 |
| Totals ... ... ... | 95 | 17 | 78 | 82 |

Several cases of diphtheria and scarlet fever in the first age-group were found to have had only very slight irregularity.

This practically equal result, then, from two diseases with widely different cardiac effects suggests the exclusion of the heart as a factor in the causation of this sign. Further, the occurrence of the sign will be found to be little more than physiological in its significance; in the bulk of cases this irregularity is the regular variation in force and frequency of the pulse to which the term "pulsus paradoxus" is applied by some authors, occurring in healthy adults only on forced inspiration and expiration, but tending to occur frequently in apparently normal children, especially when asleep. This respiratory irregularity of pulse was met with in every degree; from the just perceptible variation of rhythm up to instances where the pulse-beat occurring as expiration begins, hangs—as if failing the due arrival of another inspiratory effort the heart must stop altogether; the ratio of the number of beats during inspiration and expiration being more than 3 to 1 in these cases.

A brief inquiry into this phenomenon is necessary in order to show that there is really nothing specifically cardiac in its causation. It is fully discussed by Wenckebach[5] in his work on "Arhythmia of the Heart"; he concludes, with Lommel, that "this phenomenon is clinically, as well as experimentally, purely of nervous origin; for it is not a typical symptom of any organic disease of the heart, but it is one of neurasthenia; at the same time we do not mean that it cannot occur in cardiac disease. We are bound to assume the cause lies in an excessive susceptibility in the inhibitory centre of the vagus." As regards "the mechanism by which this is produced—the most likely view is that the rhythmical stimulation of the respiratory centre has a rhythmical effect on the vagus centre, so that as the respiratory centre becomes active, the tone of the vagus centre is diminished and *vice versâ*." Sir James Barr,[6] on the other hand, in a recent article specially dealing with this subject, believes the solution rests on a less hypothetical foundation. He finds a sufficient explanation in the mechanical effect of the respiratory act upon the circulation. "The pulsus paradoxus is due to one or both of the two following causes, namely, defective filling or rapid emptying of the arteries. In the former case a weak right heart and a large lung reservoir are important factors, and in the latter a good respiratory pump and low blood pressure are the causal agents." With this explanation it can be understood that this irregularity may occur in health. For example, other factors being normal, an exceptionally well-developed chest and lungs may be sufficient to produce it. In disease doubtless it is the other factor which is the all-important one—the fall in blood pressure. Wenckebach's remarks on neurasthenia will also fit in here, for in that condition or, better, in a state of asthenia we have the same thing—a relaxed condition of the body and vessels. The phenomenon is, however, sometimes so capricious in its appearance and disappearance that one feels tempted sometimes to give it the obscure functional nerve origin suggested.[11]

In carefully following, then, about another 100 cases that recovered in each disease, the irregularity before noticed was found to be almost constantly respiratory. A distinction must then be drawn between this respiratory and what may be termed "true" irregularity, which latter undoubtedly occurs in diphtheria. For amongst the cases ending fatally in this disease many exhibited true delirium cordis for a few hours up to several days before death. Leaving this part of the subject for the time being we will turn to consider what percentage of true irregularity may be found in non-fatal cases. In the first place we might include a few cases of delirium cordis, if it be allowed that it is not invariably in the early weeks of the disease a sign of a fatal issue. There were, however, no instances in the hundred cases examined. Later in convalescence, nevertheless, it may occur along with dilatation from accidental strain, but soon passes away in favourable cases. There were, however, a few cases with marked respiratory variation which appeared to have an added tendency to irregularity apart from this; and these might also be included. Still, a judgment on such a matter should not be too hastily given, for it is surprising how easily one may mistake a case of well-marked respiratory irregularity for one of true arhythmia. In making an observation the eyes should always be fixed on the chest and the respiratory movements carefully noted along with the changes in the pulse. Even where the respiratory variation is the only irregularity present, the effect is often a very confused one in a slow pulse. This is owing to the fact that where the phenomenon is well marked there are two strong tendencies alternately supplanting one another, the one during inspiration to quicken the pulse, and the other during expiration to slow it. In changing over from one influence to the other there is a liability to a jumbling or hesitancy of rhythm, especially where the pulse intervals are not exact multiples of the respiratory periods. But towards the end of inspiration or expiration, or particularly if these are voluntarily prolonged, the pulse is found to have settled down to a regular beat, which again serves to show that intrinsically, as far as the heart itself is concerned, it is essentially regular, but owing to mechanical extra-cardiac causes there is one rate for inspiration and another for expiration. Other more curious effects are sometimes produced when both the slowness of the pulse and the tendency to respiratory variation are very marked. One little patient (a case of scarlet fever with no obvious cardiac lesion) exhibited a typical bigeminal pulse for some minutes, which after a time changed to a trigeminal one and then back again to the original. The paired beats coincided with inspiration and the pauses with expiration.

In this way the percentage occurrence of true irregularity in non-fatal attacks may be reduced to only a few cases in a hundred—a small one compared with that usually given. As regards fatal cases, which number about 7 per cent. of all,[1] delirium cordis perhaps occurs in more than half—i.e., before the patient is actually *in articulo mortis*. The total occurrence of true irregularity of the pulse in diphtheria will still, however, be less than 10 per cent.

When the above results were recorded in a thesis on diphtheria I was not able to obtain Villy's paper previously referred to on Vomiting and Cardiac Failure in Diphtheria. Since then I have gained access to it. He tabulates his results on the occurrence of cardiac irregularity in 177 cases. This table—with which previously I was altogether unacquainted—so strikingly resembles my own in all essentials and so admirably bears out my own contentions that it is also inserted for purposes of comparison. In the first place, the total percentages are alike—over 80 per cent. in both; but his inference that all this is to be taken in a general way as indicative of a tendency to cardiac failure is evidently erroneous. The

*The Results of Observations on 177 Cases of Uncomplicated Diphtheria with regard to the Presence or Absence of Cardiac Irregularity and to the Date of Onset (Villy).*

| Ages (inclusive). | Number of cases. | Regular. | Irregular. | Percentage incidence of irregularity. |
|---|---|---|---|---|
| Ages 1–4 years. | 67 | 5 | 62 | 92·5 |
| ,, 5–9 ,, | 63 | 1 | 62 | 98·4 |
| ,, 10–14 ,, | 22 | 1 | 21 | 95·4 |
| ,, 15–19 ,, | 9 | 2 | 7 | 77·7 |
| ,, 20, 21, &c. | 16 | 13 | 3 | 18·7 |
| Totals ... ... ... | 177 | 22 | 155 | 87·5 |

Average date of onset 17·7 days.

decrease in irregularity with increase in the ages of the patients is clearly demonstrated in both—adults being almost exempt. The latter fact did not altogether escape Villy, since he adds "the number of adult patients is somewhat small to draw any certain conclusions from." This reservation is, however, quite unnecessary since my tables add additional testimony to the fact, as well as the experience of several hundred other cases. Neither the scarlet fever nor the diphtheria cases listed exhibited repiratory irregularity (with quiet breathing) in those over 25 years of age. The fact is plainly evident from these three tables that the particular variety of disease has got very little to do with the question, and a bald statement of percentage occurrence of irregular pulse in diphtheria might be said to point to nothing but the comparative numbers of patients at the different age-periods, and to be innocent of any serious cardiac implication.

This view of the case is in accord with the well-established fact that true irregularity of the pulse where myocarditis is in question must always be regarded as a very grave sign indeed. It points to the utter disbandment of the four "myogenic" forces of the heart wall. Towards the end of the first fortnight of diphtheria death usually takes place by sudden dilatation of the heart accompanied by delirium cordis. At this time these signs almost invariably point to a fatal ending. The irregularity here is unmistakeable in type—a staggering disorderly beat, completely independent of the respiratory act. As convalescence progresses the heart wall, however, shows itself more and more resistant to the forces of dissolution. Intermittence of the pulse is another sign which "seems to point to serious involvement of the myocardium."[9] It is a significant fact that its percentage occurrence is also a small one. Hibbard[2] gives 3 per cent. I have not found more than 4 per cent. in 300 cases. They are generally those of a severe type. In cases developing favourably intermittence usually disappears in a week or two. The fact that it does this and does not hang about for months and years like the spurious irregularity of the pulsus paradoxus points to the really serious import of the sign, which disappears with the repair of the myocardium. We can be sure that when intermittence and true irregularity of the pulse are present in diphtheria they are generally there on matters of grave import to the patient —to depart when the more serious aspect of the case has disappeared. Again, intermittence is generally regarded as the first beginnings of irregularity, the latter showing a more advanced stage of the cardiac disorder. Thus Broadbent[10] says, "irregularity of cardiac action is more serious than intermission." Since then intermission occurs in only about 4 per cent. of cases it seems more than likely that a not much larger percentage can be claimed for true myocardial irregularity.

An attempt is generally made to state a period in the disease when the pulse becomes irregular and again a period when it may be expected to lose that quality. For instance, Bolton[7] speaks of the irregularity generally commencing in the second week, and Villy[3] goes so far as to estimate an average time of onset—17·7 days. This gives a serious aspect to what is really a harmless event capable of a very simple explanation. For it happens that in a case of moderate severity the temperature falls just about this time and along with it the pulse, which now enters the bradycardial stage so typical of this period of the disease. With the bradycardia comes the respiratory irregularity of the pulse; and not till then, because by the rule governing the appearance of respiratory irregularity the latter is not exhibited in a relatively accelerated pulse, while relative slowing increases the tendency to its occurrence. The latter fact Wenckebach[5] has noted in the following paragraph: "Winkler observed that when the frequency of the pulse is raised during mental exertion the difference in the period length is almost completely abolished, while it becomes very marked again during the rest after the mental work, as the pulse becomes correspondingly slower." I have known cases where the respiratory irregularity was so marked as to lead one to believe there was an admixture of true irregularity, develop a perfectly regular pulse in the acceleration due to a slight intercurrent tonsillitis. In contrast with this it will be remembered that acceleration of the pulse by vigorous exercise is used as a test to best bring out any suspected tendency to true myocardial irregularity. Here is an essential difference. We need not stay to discuss whether the former phenomenon is due to the acceleration of pulse or to the increased blood pressure accompanying it. The latter is no doubt the main consideration, and here Sir James Barr's explanation fits in very well; as do also Wenckebach's remarks about neurasthenia. For about the end of the first fortnight the typical case of diphtheria falls into a depression of subnormal temperature, slow pulse, and low blood pressure (the latter I have ascertained by proper instrumental measurements).

Here, then, are the ideal conditions for the development of the pulsus paradoxus, and in probably no other disease are they more ideal. Consequently marked examples occur perhaps more often in diphtheria, although the phenomenon itself can hardly occur more frequently, seeing that the former is mostly a disease of children. Moreover, for reasons which would prove very interesting to discuss, in some of the worst cases of diphtheria, bradycardia is absent, the pulse-rate being well sustained. Here, where most irregularity of the pulse might be expected, none is found unless occasionally that of myocardial causation. Some may, however, still urge that the bradycardia and respiratory irregularity must have some relation to the severity of the attack, and therefore it may be maintained that this irregularity still furnishes a useful prognostic guide. There is a limited amount of truth in the first contention, but the bradycardia is always the more important prognostic indication, the patient on no account being allowed up till the tachycardial reaction is well established. Any respiratory irregularity still continuing at that time would be ignored. And in fact it is always a secondary matter and could be easily dispensed with as a prognostic sign, the exact cardiac condition being read from other much more reliable data. The tension of the pulse, for example, is, on the other hand, a sign of very real importance.

It might then be supposed that when the body draws out of the bradycardial depression and the tachycardial period supervenes respiratory irregularity of the pulse should disappear, but this is not the case. For there is a great range of pulse-rate at this time throughout the 24 hours, from 64 to 120 being not uncommonly met with in children. The pulse then tends to be regular at the period of greatest acceleration, with marked irregularity in the period of relative slowing. Now it has been the custom to attribute everything irregular in the behaviour of the pulse at this time to the influence of the vagus nerve, which has so often been found degenerated at this period. These alleged irregularities include: the presence of irregular pulse; the supposed irregular manner in which this irregularity comes and goes throughout the 24 hours; the marked changes or range of pulse-rate during the daily periods; and the frequent changes in the volume of the pulse. The first two have been explained by the effect of the change of rate where a tendency to the pulsus paradoxus is present. The change of rate itself does not, except occasionally, need the vagus influence to explain it, since it has often—though the connexion is not always clear—a basis on the daily movement of the temperature (or on some bodily state on which they both rest) which exhibits considerable daily spiking at this time, often rising above normal. A daily rise and fall of blood pressure is also more or less coincident with these. The changes in the volume of the pulse may also be explained by its usual relationships to alterations in the foregoing. One of the writers[7] mentioned above has again unwittingly furnished us with an illustration of the pulse at this period which is at the same time a disproof of the contentions it was supposed to uphold. He apparently gives it as a typical instance of a diphtheritic pulse. It evidently belongs to the period we are discussing. The rate and regularity of the pulse were noted at short intervals of two or three hours throughout a 27 hours' period. The details are so fully given that little doubt is left but that it is no more than a case of respiratory irregularity in spite of the history of cardiac dilatation. The variation in rate from 120 down to 66 in the 24 hours is seen to be a more or less regular movement, consisting of one large wave and depression with a small reflowing wave at the intervening 12-hourly period. The pulse is marked "regular" at the maximum acceleration and "very irregular" at the minimum rate, with varying degrees of irregularity at the stages intervening. The same writer in another place shows that he also makes no distinction between the different forms of irregularity. In referring to the history of a former case he finds the pulse was irregular and on this concludes that the heart was specifically affected. No allusion has been made to the possible effect of a diseased vagus nerve in the earlier stages of diphtheria. Whatever effect it may have in producing true irregularity—though I believe the affection of the heart wall is the main consideration at this time—it has obviously no effect upon the frequency of occurrence of the pulsus paradoxus, as is evident from the above comparisons of different diseases and from the presence of the latter in health.

In most cases respiratory irregularity of the pulse in children persists throughout their stay in hospital—that is, for periods of from four weeks to as many months—especially in marked cases, although they have otherwise regained their normal state of health. There is, however, always a great tendency for it to grow less with the return to the normal vascular tone and, as might be expected, adolescents and adults are most likely to show improvement in this respect. Owing to the limitations of space I have refrained from giving instances of actual cases, numbers of which might have been produced to illustrate every point of this paper. I might add that from the knowledge of the capricious appearance and disappearance and persistence of respiratory irregularity of the pulse and from experience gained in hunting up old patients many months after discharge from hospital—cases of typhoid fever and scarlet fever, as well as diphtheria—I have much difficulty in taking seriously many of the cases described in the literature of the subject who are stated to have lost an irregularity of the pulse which they had exhibited during many weeks and months and on the disappearance of which they had been promptly discharged. I fear that many of these cases visited afterwards in their own homes would be still found with the same peculiarity of pulse for which they had been so long detained in hospital.

In conclusion, a proper understanding of this subject has an important bearing upon the prognosis and treatment of the disease. More than one writer has urged that the patient should be retained in bed for at least three months[7] if irregularity of the pulse continues. Should irregularity, however, be as unimportant as it has been shown to be in seven-eighths of all cases, it becomes rather a serious matter, economically and medically speaking, to keep a practically healthy child in bed for a month longer than is necessary, particularly as a condition of slight general asthenia is much more likely to disappear with exercise in the open air. Of course, it is none the less necessary first carefully to decide that the irregularity is no more than respiratory. The presence of cardiac signs will often help to decide this matter. Should these, however, be lacking, the pulse otherwise good and the patient apparently returned to health, he may be at once discharged, just as hundreds of such cases are discharged yearly from the various fever hospitals, assuredly none the worse for a due return to their normal state of life.

The results of observations upon patients in hospital are published with the kind permission of Dr. Philip Boobbyer, medical officer of health and superintendent of the isolation hospitals.

*Bibliography.*—[1] Rolleston: Practitioner, vol. ii., 1904, p. 797. [2] Hibbard: Medical and Surgical Reports of the Boston City Hospital, 1898. [3] Villy: Medical Chronicle, 1899, p. 391. [4] Aschoff: Brit. Med. Jour., vol. ii., 1906, p. 1103. [5] Wenckebach: Arhythmia of the Heart, p. 142, 1904. [6] Barr: Brit. Med. Jour., vol. i., 1907, p. 917. [7] Bolton: THE LANCET, Feb. 4th, 1905, p. 278. [8] Bolton: THE LANCET, Feb. 3rd, 1906, p. 282. [9] Balfour: Diseases of the Heart and Aorta, p 266, 1898. [10] Broadbent: Heart Disease, p. 290, 1897. [11] See Williams: Brit. Med. Jour., p. 369, 1907, in an article published since this was written.

Nottingham.

---

# RESULTS IN APPENDICITIS TREATED BY THE IMMEDIATE AND COMPLETE OPERATION.

BY WALTER G. SPENCER, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE WESTMINSTER HOSPITAL.

IT is important to note that in spite of the prevailing severity of appendicitis a continuous reduction in mortality can be achieved by operating systematically as soon as a diagnosis has been made, with the determination to remove the appendix in all cases. In a series of 100 strictly consecutive cases up to Jan. 31st, 1905, which I communicated to the Royal Medical and Chirurgical Society at the discussion on appendicitis, the mortality was 15. In a similarly consecutive series of 100 cases ending June 13th, 1907, the deaths numbered seven. Of these three died in consequence of pre-existing disease whilst recovering after operation for an intercurrent appendicitis, leaving four deaths in which the diagnosis and operation were too late. There is this special value in the comparison of the two series: the great majority of the cases in both series was first seen and approximately diagnosed by the same practitioners. The diminution in mortality is therefore to be accounted for by the earlier time at which these practitioners have found themselves able to make a diagnosis and to put the case under my care. For all the 100 cases were thus transferred to me after diagnosis except two nurses with acute perforation. This immediate operation has not entailed errors of diagnosis; a bimanual examination in particular has determined the disease in the subacute cases, and in acute cases, when the appendix could not be felt, the signs of early septic peritonitis have been a sufficient indication for immediate operation.

The superiority of the immediate and complete operation is established not only by the series as a whole but by the cases individually. No amount of experience affords grounds for a certain prognosis, so that any delay in operating simply leaves the patient to chance. Anything short of the complete exposure and removal of the appendix fails to reach the deepest focus of suppuration. It may be taken as a rule that until the appendix has been shelled out septic pockets remain unopened. Consequently in this series there have been no lingering cases except the fatal one (6) in which all the extent of suppuration could not be reached at the operation.

A table of the 100 cases illustrates the greater severity of appendicitis in young subjects and in males:—

| | Class I. | Class II. | Class III. | Class IV. |
|---|---|---|---|---|
| Total ... ... ... ... ... | 37 | 31 | 14 | 18 |
| Males... ... ... ... ... | 14 | 12 | 7 | 14 |
| Females ... ... ... ... | 23 | 19 | 7 | 4 |
| Under 20 years ... ... | 7 | 10 | 7 | 14 |
| Under 30 years ... ... | 33 | 25 | 10 | 16 |
| Deaths ... ... ... ... | 0 | 4 | 1 | 2 |

CLASS I.—Removal of the appendix and the complete suture of the abdominal wall. 37 cases; no deaths. No hernias or fistulas afterwards. These were either cases in the interval between the attacks or early acute and subacute cases in which it appeared that drainage might be dispensed with. All had disease of the appendix to some degree; no doubt some would have recovered from the particular attack without operation, others would have become rapidly worse had the operation been delayed. Beforehand one could not have distinguished them.

CLASS II.—Cases of acute septic peritonitis following gangrenous, perforating, and subacute appendicitis. Appendicectomy and suture of the abdominal wall except for a drain laid obliquely through the wall, removed after a day or two. The peritoneal cavity, the pelvis in particular, was sponged out; the septic fluid removed varied from 30 to 500 cubic centimetres, but the peritoneum generally appeared capable of still absorbing. 31 cases; four deaths. All the recoveries were complete, without hernias or fistulas.

Of the deaths:

(1) A male, aged 22 years, died on the fifth day after operation. The wound and lower part of the peritoneal cavity appeared to be healing well. There was an acute ulcer of the stomach with septic sub-diaphragmatic peritonitis. He was supposed to have had three previous attacks of appendicitis. The appendix at the operation was found

kinked and subacutely inflamed, with some peritonitis around; the gastric ulceration remained unsuspected until the post-mortem examination.

(2) A female, aged 27 years, died four days after operation for acute gangrenous appendicitis with peritonitis and tympanites, the acute symptoms having set in about 24 hours before operation. At the post-mortem examination the lower half of the abdomen and wound appeared to be healing satisfactorily. The stomach showed the remains of wide-spread gastric ulceration and the upper small intestines were much dilated. She had suffered from dyspepsia for 10 years and had been accustomed to take enormous quantities of commercial bicarbonate of soda.

(3) A man, aged 35 years, was seized with abdominal pain and diarrhœa. His stools came to contain large quantities of blood; later they mainly consisted of pus. He rapidly wasted, suffered from aphthæ, and died in the sixth week of the illness. On the fourteenth day he had commenced to have pains in the ileo-cæcal region; on the eighteenth day he was operated upon and an acutely inflamed appendix was found bound down by old adhesions and there was local septic peritonitis. After the removal of the appendix all peritoneal symptoms ceased and the wound healed well. The diagnosis of the intestinal affection proved impossible, as a post-mortem examination was refused; it was supposed to be a case of ulcerative colitis, but there was no fibrin or mucus in the stools and the course was rapid. All the reactions of typhoid fever were negative; there were no fever and no leucocytosis except in connexion with the intercurrent appendicitis. There was no evidence of any leaking abscess.

Probably none of the foregoing three cases would have died from the appendicitis alone.

(4) A female, aged 20 years, had acute gangrenous appendicitis with peritonitis, which had commenced five days before, and there was already marked tympanites. She died about 24 hours after operation and was found to have been otherwise healthy.

Class III.—Cases of suppurating appendicitis treated by shelling out of the appendix, wiping out the affected portion of the peritoneal cavity, and afterwards filling it with gauze; some cases were partly sutured. 14 cases; one death. No sinuses persisted, for the appendix was in all completely removed up to and including its funnel-like junction with the cæcum. Owing to slow healing some of the scars were not at first firm and several of the cases have been ordered belts. Possibly a case may require excision of the scar and suture in stages.

Of the death:

(5) A female, aged four years, after eight days of obscure abdominal disturbance, had marked tympanites. I found a multiloculated abscess in the pelvis around a gangrenous appendix. The child died 36 hours after operation.

Class IV.—Cases requiring an extensive ileo-lumbar incision for the removal of the appendix and the complete evacuation of pus and fibrinous masses. All the suppurating cavity was packed with gauze whilst pushing back the intestines. Secondary suture was done as soon as granulations lined the cavity. 18 cases; two deaths. All the scars remain sound and no belts or trusses have been required. The earliest secondary suture was four days after operation, the average being about nine days after. In one case in which a portion of the cæcum was already gangrenous, and a free fæcal fistula followed, the parts around were so soft that it was only after four months that the secondary suture could be undertaken, when a careful dissection and suture in stages resulted in sound healing. In another case a sinus persisted after the secondary suture. Six months later I explored to find that the sinus ran upwards through the psoas muscle nearly to the spine. A thorough scraping was followed by sound healing. In one case I made this deviation from the rule of always excising the appendix; I had already completely exposed the area of suppuration, and isolated the cæcum and appendix when the patient's condition appeared dangerous, so I wrapped up the cæcum and appendix in iodoform gauze. Three days later I removed the appendix and sewed up except for a drain.

Of the deaths:

(6) A male, aged 20 years, was seized with an obscure abdominal attack immediately after a long bicycle ride, during which his pulse and temperature, after being at first raised, became normal and the temperature even subnormal. He was found to have an abdominal abscess extending from the pelvis upwards in front of the intestines, and pus came out from the foramen of Winslow; the tip of the appendix had sloughed off and there were two concretions loose in the pelvis. On the second day after operation a portion of the cæcum sloughed. After a month an attempt at secondary suture was made and failed. In the second month after operation he passed pus in his motions and septic bronchitis appeared. In the third month a left empyema had to be drained. He died ten weeks after operation. There was suppuration between the diaphragm and the liver and spleen, also in the lesser peritoneal cavity, and multiple abscesses in both lungs. The method of operating here failed because the suppuration had already extended upwards into the lesser peritoneal cavity. The pus throughout showed streptococci.

(7) A male, aged 19 years, had acute gangrenous appendicitis with septic peritonitis, followed by tympanites. He was brought in collapsed and covered with a cold sweat. The appendix had sloughed owing to two concretions; the pelvis was full of pus and fibrin with adhesions. He died six hours later. There was no post-mortem examination.

Thus it has been possible to diagnose and to operate on 100 cases of appendicitis, with a loss when the appendicitis was the sole disease of only four, a result which removes the various objections that have been raised to the method.

Brook-street, W.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### ACUTE ARTHRITIS COMPLICATING A CASE OF OPHTHALMIA NEONATORUM.

By J. H. F. Nunn, M.R.C.S. Eng., L.R.C.P. Lond.

Mrs. ——, a healthy primipara, gave birth to a strong, well-nourished child. On the third or fourth day after birth an acute attack of purulent ophthalmia of the infant's left eye developed. The conjunctivitis was treated with boric and perchloride of mercury lotions and occasional applications of silver nitrate paint (10 grains to one ounce) as the discharge was profuse. Care was taken to allow the child time for sleep. About 24 hours after the conjunctivitis of the infant declared itself the mother developed an attack of pelvic inflammation. I obtained a distinct history of gonorrhœa from the father of the child, who had been treated for the complaint, and I ascertained from the mother that she had had a discharge for some weeks previous to her confinement. After four or five days, when I hoped that the infant's right eye had been preserved, it became similarly affected to the left which was now almost well. At this juncture the metatarso-phalangeal joint of the left great toe of the baby became hot, swollen, red, and painful to touch, the condition being similar to a comparatively mild attack of gout. The nurse was careful and from her I could obtain no evidence of a fall, bruise, burn, or any injury likely to produce the condition. The joint became slightly better, but on the left eye becoming reinfected (this time the condition was worse than before, so that a large central opacity developed which eventually nearly disappeared) the joint again became more acutely inflamed. The arthritis gradually subsided without leaving any stiffness or trace of the inflammation. The child's digestion and bowels were attended to and the joint was occasionally fomented and protected with cotton wool, beyond which no treatment was attempted. The reduction of the discharge from the eye by the use of silver nitrate appeared to coincide with an improvement in the joint, and when the paint was not used for 36 hours there was not only an increase in discharge from the eye but also in the swelling of the joint.

Judging from the usual course of gonorrhœal arthritis, and from the fact that the child was healthy and its strength was being maintained, and that the apparent cause was being treated and thereby diminished, I considered the prognosis to be favourable.

I mention the case because the complication was unexpected, and an ophthalmic surgeon of experience could not recall a similar occurrence; neither had I during 15 months' work at the Barnardo institutions and Her Majesty's Hospital, Stepney, met with a case of arthritis apparently following purulent conjunctivitis even in debilitated subjects.

## A CASE OF TRAUMATIC SUBCUTANEOUS RUPTURE OF THE SPLEEN; LAPAROTOMY; RECOVERY.

By M. B. RAY, M.D., C.M. EDIN.,
SURGEON TO THE HARROGATE INFIRMARY.

THE patient, a boy, aged 19 years, was admitted under my care in the Harrogate Infirmary on Feb. 26th of this year. He was suffering from the effects of a kick in the abdomen by a horse. On admission he was in great pain, referred generally to the abdomen, and in a state of considerable collapse. He lay on his left side with his knees drawn up, any attempt to turn on his back causing intense distress. His face was pinched and somewhat cyanotic. The extremities were cold, the temperature was subnormal, and the pulse at first was 120 and feeble. The abdominal walls, especially on the left side, were very rigid, almost as hard as a board. The percussion note all down the left flank was quite dull.

The abdomen was opened in the middle line and the peritoneal cavity was at once seen to be full of fluid blood. As it seemed to come from the splenic region the incision was extended parallel to the left costal margin. The spleen was felt to be normal in size, but a ragged edge could be distinctly made out below the notch from which the hæmorrhage evidently proceeded. The amount of damage to the organ did not seem to call for extirpation, especially as firm pressure evidently controlled the bleeding. I therefore decided to tamponade. In this process I used about two and a half yards of sterile gauze. The median wound was then sutured and the patient sent back to bed.

The boy had a narrow, rickety chest and for some weeks previous to his accident had been troubled with a cough, accompanied by copious muco-purulent expectoration. This for the first few days got much worse and he had in addition some dulness about his left base. The latter, however, gradually cleared up. The packing was daily withdrawn little by little, commencing on the fourth day. The end of the gauze had caked into a hard mass and the wound had to be slightly opened under gas to allow of its removal. The whole of the tampon was finally removed by the end of the first week. A fistulous track, gradually becoming shorter, persisted for another fortnight. At the end of a month he was sitting up, taking food well, and putting on flesh. He was finally discharged cured on April 13th, six weeks after admission.

The case is interesting as demonstrating the importance of an exploratory operation in doubtful cases of abdominal injury. Also the number of successful cases of tamponading for rupture of the spleen is not great. At any rate, the number recorded is not.

Harrogate.

## A CASE OF TWISTED OVARIAN PEDICLE IN A CHILD AGED THREE YEARS.

By W. GREENWOOD SUTCLIFFE, F.R.C.S. ENG.,
SURGEON TO THE ROYAL SEA-BATHING HOSPITAL AND VICTORIA CHILDREN'S HOME, MARGATE.

THIS case was first seen with my friend Dr. A. Warwick Brown at 10 P.M. on July 17th. The patient was a healthy-looking child, just over three years old, who had been attacked by violent abdominal pains and vomiting 24 hours previously. A large rounded tumour was felt in the middle of the abdomen and operation was at once decided on. Chloroform was given by Dr. F. E. Nichol and Dr. Warwick Brown kindly assisted. On the abdomen being opened the tumour was, to our surprise, obviously ovarian; it was tapped but very little fluid escaped, and after enlarging the wound it was removed and the pedicle was examined. This was twisted four times and sprang from the right broad ligament. It was ligatured in the usual way and the wound, through the right rectus sheath, was closed. The small patient made an excellent recovery and is now running about as usual. The tumour was an ordinary adenoma, weighing 18 ounces, and of about the size of an average cocoanut; it was distended with blood clot and its pedicle was swollen so as to measure some 4 inches in circumference.

Ovarian tumours are, of course, met with at any age, but torsion of the pedicle at the age of three years is, I think, sufficiently rare to record.

Margate.

# A Mirror
OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

## HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

### A CASE OF CATARRHAL APPENDICITIS DUE TO THE PRESENCE OF THE OXYURIS VERMICULARIS.

(Under the care of Dr. A. E. GARROD and Mr. H. A. T. FAIRBANK.)

A BOY, aged 10½ years, was admitted to the Hospital for Sick Children, Great Ormond-street, on Dec. 22nd, 1906, under the care of Dr. Garrod for incontinence of urine and (?) epilepsy. The notes state that he complained of pain in the stomach directly he began to eat, but no history could be obtained of any attack suggesting appendicitis. On Jan. 5th, 1907, in the evening he complained of headache and he vomited. His temperature rose from normal to 101·6° F. The next morning he complained of pain in the abdomen and down the right leg. He vomited again, his temperature again rising above 101°. An enema produced a large constipated result. The next morning his temperature was 103·2° and his pulse was 108. The abdomen was not unduly full and was not rigid, but there was extreme tenderness in the right lumbar region in front and in the loin behind, particularly in the latter position. There was no tumour to be felt. The right thigh was fully extended. There was a leucocytosis of 26,000. By rectal examination nothing abnormal was made out. A diagnosis of appendicitis, with the appendix lying up behind the colon, was made, and the boy was transferred to a surgical ward and operated upon immediately.

The abdomen was opened somewhat higher than usual by McBurney's method. The appendix was found behind the colon in an unusually deep subcæcal pouch. It was quite free from adhesions and there was no sign of recent peritonitis. The vessels of the cæcum and appendix appeared a trifle larger than normal and the terminal portion of the latter was somewhat rigid, so its removal was proceeded with. The right kidney and ureter were normal. On slitting up the appendix after removal the mucous membrane was seen to be congested and in the lumen were found some soft fæcal matter and several thread worms. The next day the boy was much better and in 36 hours the temperature was normal. On the third day after the operation the temperature again rose, reaching 103·8° on the fourth day. The child had an attack similar to the former, though the local tenderness was not quite so marked and he did not vomit. The attack lasted three days and was followed by uninterrupted recovery, the wound healing by first intention. On the supposition that the cæcum was probably the seat of many more worms drugs were given with a view to their removal, yet not a single oxyuris could be found in the motions at any time. He left the hospital on Jan. 26th apparently quite well.

---

**CHOLERA RISKS AT MOSCOW: PROVISION FOR MEDICAL MEN'S FAMILIES IN CASE OF DEATH.**—In view of the threatened invasion of cholera the Moscow Hospital medical men have held a meeting at which it was decided, *inter alia*, that in the event of deaths amongst the members of the staff compensation (except in cases where pensions are provided) shall be paid to the families of such deceased at rates varying from £100 in the case of the lowest services on the staff to £500 in the case of the medical staff.

# Reviews and Notices of Books.

*Diseases of the Eye: A Manual for Students and Practitioners.* By J. HERBERT PARSONS, D.Sc., M.B., B.S. Lond., F.R.C.S. Eng., Assistant Ophthalmic Surgeon, University College Hospital; Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital. With 15 coloured plates and 308 woodcuts. London: J. and A. Churchill. 1907. Pp. 664. Price 10*s.* 6*d.* net.

IT is difficult for the most original of authors to present to his readers any great novelty in the mode of discussing the subjects that must be dealt with in a manual of ophthalmology intended for the use of the large classes of senior students and of junior practitioners; for it is only the student in the last year or two of his attendance in the wards of a hospital or the young practitioner in the first year or two of his professional work who has the time or the inclination to master the details of so large and important a subject as the diseases of the eye. Yet there are few departments of medicine the study of which is more interesting, owing to its numerous relations with other branches of science, or which, when successfully pursued and applied, is more useful to man. The author of this work has excellent qualifications for the office of a teacher. He is connected with a special hospital presenting the most extensive field of observation of diseases of the eye in England. As curator of the museum at Moorfields he has large opportunity of examining the exceptional as well as the more common diseases of the eye. And the works which he has already published on the pathology and on the physiology of that organ show that he has not neglected opportunities which have now enabled him to produce one of the most useful manuals to be found in any language.

In recommending the volume to the junior members of the profession we may remark generally that it is of handy size, clear print, and that it possesses excellent illustrations, those in particular showing the macroscopic changes in the iris and retina, many of which are coloured, being exceptionally instructive. Finally the space accorded to each division of ophthalmology is fairly in accordance with its importance to the learner. In the plan of the work the arrangement in chapters or divisions is—anatomy and physiology, examination of the eye, the diseases in topographical order, errors of refraction, disorders of motility of the eye, diseases of the adnexa of the eye, and some appendices specifying the requirements of the public services.

As might be expected from Mr. Parsons's familiarity with pathological researches, this aspect of the diseases of the eye is brought into prominence to the great advantage of the student, since much of our knowledge of the intimate changes taking place in inflammation of opaque tissues is derived from the investigation of the processes occurring in the transparent tissue of the cornea. We are tempted to transcribe the account, or rather a part of the account, of the process of ulceration in the cornea to show the mode in which accurate pathological knowledge is brought to bear by Mr. Parsons not only on the limited area of the cornea but upon inflammatory affections generally. After describing the usual form of an ulcer in the progressive stage as saucer-shaped with walls thickened from imbibition of fluid and the presence of numerous leucocytes, he points out that a line of demarcation is formed as in necrosis elsewhere. The toxins are most concentrated near the centre where the organisms are most numerous but dead owing to their virulence. Then, as Leber showed, a ring or wall of leucocytes containing many nuclei forms a second line of defence. Here the leucocytes are neither paralysed nor killed by toxins but are able to exert their digestive functions, removing by dissolving or digesting the necrotic tissues. The process of reparation is then described and with vascularisation the regressive stage is reached, the stages of which are given. But in certain circumstances some of the toxins elaborated by the bacteria diffuse through the cornea into the anterior chamber, where they exert an irritative effect upon the vessels of the iris and ciliary body, causing hyperæmia of the iris, and in severe cases the formation and discharge into the aqueous from the vessels of numerous leucocytes which gravitate to the bottom of the anterior chamber where they form an hypopyon. "There are several important facts about hypopyon," Mr. Parsons continues, "which must be borne in mind. The pus cells do not come from the cornea as was once thought. This is proved by the following facts: 1. Descemet's membrane is impermeable to leucocytes though fluids pass readily through it. 2. The cells sometimes contain pigment granules obviously derived from the uveal tract. 3. If the ulcer have not perforated the hypopyon is sterile. The last fact is of the very greatest importance both theoretically and practically. It shows that the leucocytosis is due to toxins, not to actual invasion of bacteria which indeed are as incapable of passing through the intact Descemet's membrane as are leucocytes. It accounts for the ease and rapidity with which hypopyon is often absorbed; it may develop in an hour or two, rapidly disappear, and as readily reappear. Such hypopyons are very fluid, always moving to the lowest part of the anterior chamber if the position of the patient's head be changed. The fact that the hypopyon is sterile has great practical importance—it is unnecessary to remove the pus as is the rule in all other parts of the body; if the ulcerative process can be stopped the hypopyon will be absorbed." Of course in exceptional cases its removal becomes necessary.

Cataract and the operations for its removal are described succinctly but in quite sufficient detail for the junior practitioner. As a matter of fact, the cases requiring extraction of the lens do not in general fall to his lot. To be successful the diagnosis must be satisfactorily made and the surgeon must know the steps of the operation and must not only have the appropriate instruments but they must be in perfect order, a blunt point to the Graefe's knife often leading to undue pressure upon the globe and loss of vitreous. Mr. Parsons confines himself in the diagnosis of errors of refraction to the employment of the shadow test, yet the application of this test can hardly be learnt from books except in the dark room of a hospital with an expert at hand to explain the difficulties which so often arise and which often prove puzzling even to him. We have seen several cases excellently determined by the late Mr. Hulke by the "slit" test alone and this method might have been given as an alternative and certainly much easier method than skiascopy.

The chapter on Sympathetic Ophthalmia is written in accordance with the lights of the present day, but supplies sufficient evidence that this is still a dark corner of ophthalmology and affords little help to the general practitioner who is suddenly confronted with a wound in the globe and has to determine whether he should attempt to apply the ordinary rules of surgery or at once proceed to its removal. The fact is, that we require many more clinical histories of carefully observed cases, supported by such pathological details as Mr. Parsons, Mr. E. Treacher Collins, and other expert microscopists can supply. We want to know why a prick with the point of a pin is followed in one case by no more than a trifling local inflammation and in another apparently exactly similar by the most disastrous results, not only to the injured eye alone but to the opposite one. We want to know better than we do at present the means or channels by which the evil influence is conveyed from the excitor to the sympathising eye, and, above all, we want to know the treatment that should be adopted at the early and at the later stages of the affection, the grounds inducing us to preserve the injured eye in one instance and to extirpate it in others, and when it is proper to deal with the sympathising or uninjured one. We notice that little is here said of any distinction between sympathetic irritation and sympathetic inflammation, yet antiseptics and rest in a darkened chamber with some general treatment will sometimes altogether remove the one and have little or no beneficial influence on the other. The treatment proposed for penetrating wounds in the ciliary region (p. 437) though correct for an expert with all appliances at hand seems too difficult for the junior practitioner. It would not be advisable, we think, for an unpractised hand in a case of a cut with a penknife, a very common form of injury, to insert fine silk sutures into the sclerotic but which are not to be tied, "great care being exercised not to press unduly on the eye. The prolapsed iris and ciliary body are then excised as in the operation for simple prolapsed iris. The scleral sutures are then tied. Finally the conjunctiva is sutured over the wound." The student or general practitioner would, we think, be better advised to send such cases to some large centre where the operation could be undertaken by one who is familiar with the operative surgery of the eye, or, failing this, to wait a week or two, and if the appearances were threatening and no improvement took place to remove the eye; as a rule, a delay of a fortnight does no harm.

We have left ourselves no space to comment upon the sections devoted to the neurology of vision and upon the disorders of the motility of the eye. These, no less than the others, are thoroughly worked up to date, and the book as a whole may be regarded as a very sure guide to the student and as representing the practice of one of the best schools of ophthalmology in Europe.

*Le Sol et l'Eau.* (*Soil and Water.*) Par L. DE LAUNAY, Professeur à l'École des Mines; E. A. MARTEL, Auditeur au Comité Consultatif d'Hygiène; ED. BONJEAN, Chef du Laboratoire du Comité Consultatif d'Hygiène de France; et J. OGIER, Chef du Laboratoire de Toxicologie de la Faculté de Médecine de Paris. With two coloured plates and 80 figures in the text. Paris: J. B. Baillière et Fils. 1906. Pp. 460. Price Fr. 10.

THIS book, which constitutes the second fasciculus of a treatise on hygiene published under the editorship of Professor P. Brouardel and M. E. Mosny, deals in a most exhaustive and interesting manner with the examination of the characters of the soil in regard to the problems of human habitation and with the general properties of water from a hygienic point of view. It commences with a geological study of the soil by M. L. de Launay in which the general characters of soil and sub-soil are described. Geological maps and sections are illustrated and their uses indicated. The constitution of the soil and the penetration of water through it are described.

M. Bonjean contributes a chemical and bacteriological study of the soil and discusses the rôle of the soil in regard to human habitation. He gives in detail the chemical composition of the different varieties of earth, and describes their physical properties. The relations of bacteria to the soil are given in detail, the problem of nitrification is discussed and the general distribution of pathogenic and other organisms, with their vitality in the soil, are described. The mortality rates of dwellers upon different kinds of soil and the nature of the so-called telluric affections concludes this section.

The geological relations of water are contributed by M. E. A. Martel. In this section the origin and nature of subterranean waters are described in detail and these waters are classified. The essential characters of potable waters are laid down and the various sources of pollution are considered, with the means to be adopted for counteracting them. The various possible sources of water—viz., rain, small springs, wells, rivers, lakes, and the sea are each separately dealt with, and the legal procedures necessary for the effective control of the supply of drinking water are summarised.

The remaining section of the book is contributed by M. Ogier and M. Bonjean and deals with the examination of water from the microbiological and chemical points of view. It occupies more than half the total pages of the book and is one of the most thorough and complete studies of the subject with which we are acquainted. The various characters of potable waters are given very carefully and the methods of water examination are described in detail, with especial descriptions of the methods used in the laboratory of the French Committee of Hygiene. The various bacteria found in water are separately considered and their morphological and cultural characters presented very clearly. The ordinary intestinal parasites and their ova and other small animal organisms sometimes found in water are described and figured. The various methods for the chemical analysis of water are next given and the significance and value of the results obtained are discussed. A very considerable amount of attention is given to the methods of purifying and improving the water-supply, and in this connexion the methods for filtration on a large scale are referred to and discussed, the special forms of filter like the Pasteur-Chamberland and the Berkefeld are figured and the methods of purification by chemical processes are also dealt with. An interesting account is given of certain methods for the sterilisation of water by means of ozone generated by electrical apparatus.

The book as a whole is a very valuable contribution to the works of reference on the subject of hygiene and is worthy of the reputation of the editors.

*Hay Fever, Hay Asthma: Its Causes, Diagnosis, and Treatment.* By WILLIAM LLOYD, F.R.C.S. Edin., Surgeon-in-Charge of the Nose, Ear, and Throat Department, Queen's Jubilee Hospital; Surgeon to the Nose and Throat Department, St. Pancras and Northern Dispensary. London: Henry J. Glaisher. 1907. Pp. 95. Price 3*s.* 6*d.*

THE author explains in his preface that his chief reason for writing this book was to record certain opinions which he holds upon the causes and effective treatment of hay fever. He admits that these opinions are not exactly in accordance with those generally current in this country but is convinced, he says, from a considerable experience that they are substantially correct. He divides cases of hay fever into two distinct clinical types, dependent upon the predisposing pathological cause. In the first type, on examination of the nose no structural abnormality is discovered, but certain areas of the mucous membrane are hypersensitive. In the second, some pathological condition or abnormality is present, together with hypersensitive areas. Amongst the intranasal diseases present he mentions simple chronic catarrhal or hypertrophic rhinitis, polypi, sinus diseases, ethmoiditis, adenoids, deflected septum, spines and crests, and foreign bodies, or rhinoliths. Mr. Lloyd considers that his first group forms the true type of hay fever, and the symptoms are only produced by the action of pollen; the second group, he suggests, should be termed pseudo hay fever; the symptoms are much the same, but may come on during any period of the year. We think, however, that it is not desirable to include the second group under the heading of hay fever but to designate them according to the morbid condition which exists. The main etiological factor is quite different, in the one the pollen is the prime cause of the disease, whilst in the other the pollen is of only secondary importance.

In regard to treatment Mr. Lloyd lays great stress on the importance of cauterising the hyperæsthetic areas. Obvious abnormalities such as adenoids and polypi must, of course, be removed, but this procedure, he says, will not always give the expected relief, and the electric cautery must then be applied to the areas just named. This method of treatment has been extensively adopted in America, but many authorities in this country do not view it with favour.

We do not think that this work adds much to the knowledge of hay fever, but it contains a good summary of the various opinions which are held in regard to the pathology and the treatment of the disease.

---

*Operative Gynecology.* By HOWARD A. KELLY. A.B., M.D., LL.D., F.R.C.S. Edin. (Hon.), Professor of Gynæcological Surgery in the Johns Hopkins University and Gynæcologist in the Johns Hopkins Hospital, Baltimore. Second edition, revised and enlarged. With 11 plates and 703 original illustrations. London: Sidney Appleton. 1906. Vol. I., p. 680. Vol. II., pp. 656. Price £3 3*s.* net for two volumes.

SINCE the first appearance of Professor Kelly's important work on Operative Gynecology nine years ago many important changes have taken place in this field of surgery. The very high place which this book has always occupied in gynæcological literature renders the appearance of a second edition a matter of much importance. The author has taken the opportunity of adding several chapters on various subjects of minor gynæcology so as to render the book more suitable for the general practitioner. For our part we somewhat regret that Professor Kelly has not been content to retain the special character of his work as one adapted particularly to the needs of the operating gynæcologist. There are so many subjects of interest only to the specialist on which we could hardly have too much written by so great an authority that we are sorry to see any space taken up by matters which are quite adequately dealt with in the ordinary text-book. The book, however, retains all its distinctive qualities, and the second edition, like the first, need fear no rivals in its own particular sphere. A very thorough revision has been carried out and in several instances chapters have been entirely rewritten.

In the first volume we notice a new chapter on bacteriology by Dr. W. W. Ford and one on the use of the x rays in detecting calculi by Dr. F. H. Baetjer. In the chapter on gynæcological examinations a new instrument, the piezometer, for measuring the resistance of the abdominal muscles present and for determining indirectly the amount of pain, is described. The method recommended of examining virgins in the knee-chest position with a long cylindrical speculum is worthy of attention. There are new chapters on local and palliative treatment, menstruation and its anomalies, and uterine displacements and their treatment by pessaries. The chapter on anæsthesia has been contributed by Dr. H. W. Cook. The subject of spinal anæsthesia is dismissed in a few lines and evidently meets with no favour in Professor Kelly's clinic, being described as unsatisfactory and unsafe. The section on Bartholin's glands has been considerably added to and there are several very good new drawings. The minute anatomy of the gland, based on Dr. T. S. Cullen's recent work, is very fully described and illustrated. In the chapter on relaxed vaginal outlet an account has been added of the operation devised by Dr. G. R. Holden for the purpose of uniting the anterior edges of the levator ani muscles and this is illustrated with several good figures. It certainly promises to be of value in these cases. Nearly 80 pages of this volume are given up to affections of the ureters, and we need not say that this chapter, embodying as it does so much of the author's special work, is one of the greatest interest and value. There are some very striking illustrations of wax-tipped catheters actually scratched by calculi. The chapter on inversion of the uterus, revised by Dr. Dobbin, is not up to the standard of the others, while the chapter on vaginal extirpation of submucous myomata and polypi is an interesting illustration of the fact that the one weak point in this work is to be found in the description of some of the simpler operations undertaken by the vagina. For example, here we actually see an illustration of the use of an écraseur; we are told to incise the cervix laterally in order to expose an intra-uterine fibroid, and ligature of the pedicle of a fibroid or mucous polypus is advised before removing either of these tumours. Although mucous polypi are said correctly to be often associated with a hypertrophic endometritis, no mention is made of the best method of treating them—namely, by curettage.

In the second volume the chapter on the general principles common to abdominal operations has been largely rewritten and there is a good illustration of the method of postural drainage which is often so useful and which consists in elevating the body to an angle of about 30 degrees to encourage the flow of all fluids to the floor of the pelvis. One of the most important chapters in the whole work is that on hysterectomy, with extirpation of ovaries and tubes. It has been extensively revised and a very good description is given of the author's method of bisecting the uterus as a preliminary to the removal of densely adherent appendages. The method is one which we have found of the utmost value in some of these difficult cases, and we can fully corroborate the advantages which are claimed for it. It turns what is often a most difficult and dangerous operation into one of comparative ease. The most interesting and the most helpful section of all we have always regarded as that on myomectomy and hysteromyomectomy. In this new edition there are some noteworthy additions and a number of new figures in this chapter. Further illustrations of the difficulties and dangers which may be encountered in dealing with complicated cases of fibroid tumours are given and the recital of the different devices adopted by the author in treating such cases cannot fail to be of the utmost help to all who have to deal with them.

At the present time we naturally turn with much expectation to the chapter on the operative treatment of carcinoma of the uterus. The whole has been revised and practically rewritten by Dr. J. A. Sampson. It is one of the best accounts that we have read and contains a detailed record of Dr. Sampson's important researches as to the method in which the disease spreads and the relative frequency of the involvement of the glands and of the cellular tissue of the pelvis. The illustrations are of the greatest artistic merit and importance and reflect great credit on Professor Max Brödel. The abdominal route in dealing with the disease is favoured. For the important details with regard to the avoidance of damage to the ureters we must refer our readers to the book itself. The method of operating recommended, based upon the anatomical studies of Dr. Sampson on the blood-supply of the ureters, is a very good one and renders the risk of damaging these structures almost *nil*. We are interested to see that stress is laid on the danger and often unsatisfactory results obtained in many cases of uretero-vesical implantation. In the chapter on intestinal complications the crushing operation for the removal of the appendix is described and recommended.

We can hardly praise this book too highly. It is a fitting record of the genius of its author and of the remarkable work accomplished in the Johns Hopkins Hospital under his direction and supervision. It is true that the book contains mainly the opinions and the practice of Professor Kelly and it might be objected that too little attention is paid to the work and opinions of other surgeons. In this, however, lies one of the main merits of the book—that it is founded upon the practice of one school, and it derives much of its value from the fact that the reputation of the Johns Hopkins University stands so high that any record of the work done there cannot but be helpful to others. Professor Kelly's "Operative Gynecology" must be read and studied by any gynæcologist who wishes to keep abreast of the advances which daily are being made in his specialty, and he will not fail to derive the utmost pleasure and profit from his study of these two volumes. The new illustrations attain an even higher standard of merit than those in the first edition, and this is saying a great deal.

## LIBRARY TABLE.

*Outlines of the Diseases of Women.* By JOHN PHILLIPS, M.A., M.D. Cantab., F.R.C.P. Lond., Professor of Obstetric Medicine and Diseases of Women, King's College Hospital. With 121 Illustrations and two appendices. Fourth edition, revised and enlarged. London: Charles Griffin and Co. 1906. Pp. 282. Price 7*s.* 6*d.*—As this book, of which Dr. Phillips has issued a fourth edition, is only an outline of the diseases of women we must not, of course, expect too much in the way of detail. The author has revised the new edition and more particularly those portions of the book dealing with chorion-epithelioma and the operation of ventro-suspension of the uterus. It is disappointing to find that the process of revision has not been carried out as thoroughly as it might have been; for instance, in considering the operative treatment of inversion of the uterus we are told that, if failure in the attempt at reposition has taken place and hæmorrhage is severe, amputation by the elastic ligature or electric cautery is advisable. We think that even the most conservative gynæcologist would not carry out such entirely obsolete treatment when the removal of the uterus by the easy operation of vaginal hysterectomy is undoubtedly the correct treatment, granting that other operative procedures, which by the way are not even alluded to, are unsuccessful. We fail also to see that division of the pedicle of a fibroid polypus with a wire écraseur is a better plan than the cutting through of the pedicle with a pair of scissors such as is the usual method of treating such cases. Dr. Phillips still recommends Apostoli's treatment carried out by the intrauterine method. In the same section on the operative treatment of fibroid tumours of the uterus we are told that öophorectomy is indicated in young women with slowly growing hæmorrhagic fibroids. We should have thought that removal of the ovaries was contra-indicated especially in the case of young women. In the treatment of cancer of the cervix a considerable amount of space is devoted to supravaginal amputation of the cervix, although nothing is said of total abdominal hysterectomy, which seems curious. The author is of opinion that some cases of chorion-epithelioma may in reality be cases of decidual sarcoma. It is a pity that the drawing on p. 229 illustrating the characteristic contents of ovarian cystomata has not been deleted as its retention might lead the student to believe that the microscopical appearances are characteristic, whereas as a matter of fact they are not so at all.

*The Operations of General Practice.* By EDRED M. CORNER, M.A., M.C., M.B. Cantab., B.Sc. Lond., F.R.C.S. Eng., Surgeon in Charge of Out-patients at St. Thomas's Hospital and to the Children's Hospital, Great Ormond-street; Consulting Surgeon to the Wood Green and Purley Hospitals; formerly Erasmus Wilson Lecturer to the Royal College of Surgeons of England; and H. IRVING PINCHES, M.A., M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., Clinical Assistant to the Children's Hospital, Great Ormond-street; late House Surgeon and Obstetric House Physician to St. Thomas's Hospital. London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 296. Price 15*s.* net.—This is one of the Oxford Medical Publications, a useful series of books only recently commenced. There can be no doubt that at the present time there is a very great tendency for those medical men who are in general practice to operate more frequently than 20 or 30 years ago, but there has been a want of a suitable work giving clear instructions for the operations which a general practitioner would be inclined to undertake. This want appears to us to be very well supplied by this book. It is large without being too big; it is clearly written, and gives just that amount of assistance which is likely to be needed. There is an introduction with a general discussion of surgical matters, such as asepsis; then follows a chapter on anæsthetics, and after that come chapters on the operations on different parts of the body. The illustrations are adequate.

*A Dictionary of Medical Diagnosis: a Treatise on the Signs and Symptoms observed in Diseased Conditions, for the Use of Medical Practitioners and Students.* By HENRY LAWRENCE MCKISACK, M.D. R.U.I., M.R.C.P. Lond., Physician to the Royal Victoria Hospital, Belfast. London: Baillière, Tindall, and Cox. 1907. Pp. 583. Price 10*s.* 6*d.*—It is only by attendance in the wards and out-patient rooms that the student can obtain the requisite experience to enable him to recognise and correctly to interpret the phenomena met with in disease, but a written guide to which he can turn for help will be valuable to him. In order to meet this requirement Dr. McKisack has written the volume under consideration, and we believe that students will find it useful to them in their clinical work and that practitioners will also be able to consult it with advantage in order to refresh their memory as to the significance of physical signs and symptoms when dealing with obscure or complicated cases. In order to facilitate reference to the different subjects these are arranged in alphabetical order and not in anatomical or nosological grouping; as the work is intended as a complement to, and not as a substitute for, the recognised text-books on medicine this is a good procedure. We have been well satisfied with our perusal of the work. It is complete and explicit, and an explanation of much of the more modern terms employed in medical literature will be found in it. In order to assist the reader in the study of differential diagnosis comparative tables are frequently employed; these are valuable not only for instruction but also for facility of reference. The book is well illustrated, containing numerous diagrams and reproductions of photographs illustrative of the text.

*The Ophthalmoscope: A Manual for Students.* By GUSTAVUS HARTRIDGE, F.R.C.S. Eng., Surgeon to the Royal Westminster Ophthalmic Hospital, Ophthalmic Surgeon to the Westminster Hospital, &c. Fifth edition. With 68 illustrations and four plates. London: J. and A. Churchill. 1907. Pp. 153. Price 4*s.* net.—This little book, while not so successful as its companion volume by the same author on the refraction of the eye, has yet attained a large measure of success. The book in reality is an incomplete student's manual on the diseases of the eye and the methods of their investigation by means of the ophthalmoscope. There seems to be a demand for small and concise books of this description, presumably amongst examinees, though this particular specimen has none of the demerits of a cram book. The material, though necessarily incomplete, is thoroughly trustworthy and clearly expressed. The plates in monochrome of diseased conditions of the fundus are not very satisfactory and might advantageously be replaced by coloured representations in a future edition

## JOURNALS AND MAGAZINES.

*The Journal of Physiology.* Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol XXXVI., No. 1. August 27th, 1907. London: C. F. Clay. Price 5*s.*—The articles contained in this number are: 1. The Non-existence of Protagon as a Definite Chemical Compound, by Otto Rosenheim, Ph.D., and M. Christine Tebb. The authors show that Liebreich's, Gamgee and Blankenhorn's, and Cramer's protagons represent practically the same substance as cérébrote prepared by Cooerbe in 1834. By fractional crystallisation substances can be obtained from protagon which differ much *inter se.* Thus protagon with about 1 per cent of phosphorus yields when appropriately treated phrenosin containing no phosphorus and sphingomyelin which is rich in phosphorus.

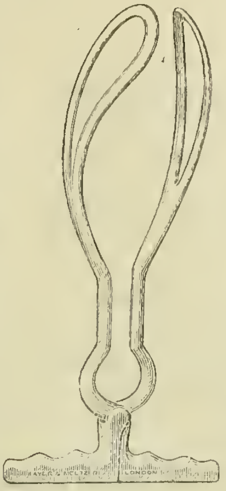
This view is in opposition to the conclusion of A. C. Lockhead and W. Cramer, published in the *Biochemical Journal*, Vol. II. 2. On the Nature of the Fat contained in the Liver, Kidney, and Heart, by Percival Hartley, Grocers' Company Research Scholar. The chief conclusions at which the author arrives are that the higher fatty acids from the liver include, in addition to saturated acids and acids of the oleic series, considerable quantities of acids of the series $CnH_2n-4O_2$, $CnH_2n-6O_2$, and possibly $CnH_2n-8O_2$; that the fatty acids from the kidney and the heart muscle have iodine values of the same order as those of the liver fatty acids; and that the higher fatty acids from the organs undergo change on exposure to the air, the iodine value diminishing and a large proportion becoming insoluble in petroleum ether. 3. Metabolism during Starvation, Part II., Inorganic, by E. P. Cathcart, M.D. Glasg., and C. E. Fawsitt, D.Sc. Glasgow University. 4. The Action of Caffeine on the Capacity for Muscular Work, by W. H. R. Rivers and H. N. Webber. The authors show that in two subjects caffeine produced an increase in the capacity for muscular work but in one the action continued throughout the whole of six sets of ergograms and in the second a decided fall below the normal was observed towards the close of each set of six ergograms. 5. The Haldane-Smith Method of Estimating the Oxygen Tension of Arterial Blood, by W. A. Osborne, University of Melbourne. The author considers that Haldane and Smith were not justified in concluding from their researches that the oxygen tension of arterial blood is higher than that of the alveolar air because the colorimetric method employed is inaccurate and because no account was taken of the counter diffusion of O and $CO_2$ on the CO. 6. On Sulphhæmoglobin, by T. Wood Clarke and W. H. Hurtley, St. Bartholomew's Hospital. 7. Concerning Cystinuria and Diamines, by F. H. Thiele, M.D., pathologist to University College Hospital. This number of the journal contains the Proceedings of the Physiological Society for May 18th, June 22nd, and July 20th, 1907.

*The Biochemical Journal.* Edited by BENJAMIN MOORE, M.A., D.Sc., and EDWARD WHITLEY, M.A. Vol. II., No. 9. August 20th, 1907. Biochemical Department, Johnston Laboratories, University of Liverpool.—The contents of this part are: (1) The Electrolytes in Pathological Body-Fluids, by Oskar C. Gruner, M.B. Lond., clinical pathologist, Leeds General Infirmary; (2) Abnormal Fat Assimilation associated with Some Diseases of the Intestine, by Owen T. Williams, M.D., B.Sc. Lond., medical registrar, Liverpool Royal Infirmary; (3) A Note on the Reduction of Alkaline Coffee Solutions by Sugar, by Stanley R. Benedict, from the Sheffield Laboratory of Physiological Chemistry, Yale University, New Haven, Conn., U.S.A.; (4) On the Effect of Narcotic Agents in the Detachment of Electrolytes from Cell Proteins, by Herbert E. Roaf, M.D. Toronto, lecturer on physiology, University of Liverpool, and E. Alderson, M.D. Liverp.; and (5) On Some Applications of Safranin as a Test for Carbohydrates, by Hugh MacLean, M.D. Aberd., lecturer on chemical physiology, University of Aberdeen. Unlike many other tests for sugar, safranin is absolutely unaffected by uric acid or urates, hippuric acid, creatinin, creatin, chloral, chloroform, hydrogen peroxide, salts of hydroxylamine, pyrocatechin, or hydroquinone. It is essentially a reagent for indicating the presence of carbohydrates in general.

# New Inventions.

## NEW DESIGN OF MIDWIFERY FORCEPS.

I ASK permission by the medium of the columns of THE LANCET to draw the attention of the medical profession to a new design of midwifery forceps. It has often occurred to me during a lengthened experience of midwifery practice that there was a manifest failure to provide the chief essential of such forceps—viz., a means of *traction*—in the ancient instrument still in use by every general practitioner of the present day. It is with this excuse I submit the accompanying sketch wherein this failure is to a considerable extent obviated by having each handle at right angles to the shank. At first sight it may seem difficult of application, but from repeated use I find it simpler. Each handle is 2¾ inches, this being necessary to get a firm enough hold for introducing, making, when locked with its fellow, 5 inches of somewhat uncomely length, and yet not too long if each hand of the operator is on each handle of the instrument when enforced traction is necessary; in practice this does not interfere with its efficiency. In the ordinary position with the thighs flexed and kept apart, or on the back with the thighs apart, the joined handle is not, as one might expect, in the way in the movement necessary for complete delivery. Where rotation is practised the means of doing so by this instrument is simplified. The other accessories of forceps, such as for compression by the addition of a screw, or for axis-traction by a handle, may be applied to the shank or other part of this instrument as they are to others; for my part I prefer keeping the handles locked by some material such as tape or string that can be so easily divided or unwound when not required further.

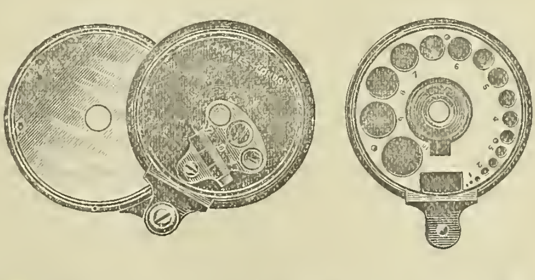


Messrs. Mayer and Meltzer of London and Melbourne have kindly arranged for the supply of this instrument and I have to thank them for their assistance in carrying out my design.

T. TAYLOR DOWNIE, M.B., C.M. Glasg.,
Honorary Midwifery Surgeon, Women's Hospital, Melbourne, Australia.

## AN IMPROVED RETINOSCOPICAL MIRROR.

FROM the illustration it will be seen that two mirrors (one concave and one flat), 1⅞ inches in diameter, are hinged together so as mutually to protect one another. This is a well-known device but the improvement consists in having on the back of the concave mirror a small triangular carrier. This has three perforations carrying a + 2 D. and a + 4 D. lenses, the centre one being unglassed. When examining by the indirect method either at will can be brought over the sight hole of the mirror. The advantage of examining with + lenses gives not only increased magnification but lessens the distance at which the observer has to stand from the eye of the patient. To enable one to clean the lenses the carrier is hinged on itself. The sight holes in both mirrors are six millimetres in diameter which is larger than commonly made. Messrs. Hawes of Leadenhall-street, London, E.C., made the instrument at my suggestion some years ago and as it has proved of value to myself and recommended itself to other ophthalmic surgeons it may be worth the attention of others. A pupilometer is fitted to the back of the flat mirror.



Southport. A. ALISON BRADBURNE, F.R.C.S. Edin.

THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 14, 1907.*

## The Plague in India.

IT appears that the net result of the two years' consideration by the Government of India of the proposals of the Royal College of Physicians of London is to condemn the recommendation of the College that a special organisation for dealing with plague should be formed, but to admit that a general sanitary service requires development.[1] Further than this there is apparently no progress, for Mr. MORLEY was still awaiting information regarding proposals in this direction when he penned the dispatch on July 26th, calling attention to the importance and urgency of the question, expressing his anxiety to be placed in possession at the earliest date of the view of the Indian Government, and recording his regret that greater expedition could not have been found practicable. Possibly the Secretary of State for India had also in mind at the time of his dispatch the questions which Dr. H. V. RUTHERFORD had asked so long back as April last concerning the strength of the medical staff specially deputed for plague work in India, the answers to which he was still awaiting, although three days at most would have been ample time for collecting the information. Things must move slowly in India when it takes over three months to learn what is the actual establishment devoted specially and wholly to plague work. We suspect that some of the active and passive resistance to reforms which Lord KITCHENER experienced in his proposed reorganisation of the Indian army, and which he successfully overcame, has now been transferred to the equally urgent and necessary reforms in the sanitary organisation in India. The particular name or form of the proposed sanitary organisation is a matter of small moment provided the service so formed is the very best for combating plague in India, and that it is formed quickly. We hope, however, that it will be the outcome of proposals by medical officers of great and practical experience in plague and sanitary work and not a cut-and-dried scheme from the secretariat in India, the source of many different plague policies. We further trust that in any scheme of development of a sanitary service it will be recognised that in dealing with qualified Indian medical men and women trained in preventive medicine a corresponding status in the service must be given to them according to the responsibility placed on them. It is only by ungrudgingly treating the Indian sanitary service as a great and important branch in the Civil Service of the country that the best work will be obtained from it. The fewer sanitary inspectors there are probably the better. Sanitary inspectors are not usually a success in the East; monetary considerations are liable to destroy their utility. Doubtless the creation of a separate public health service in India will have a dislocating effect on the existing medical and sanitary administration of the country. Evidently the Royal College of Physicians foresaw this contingency, for no radical changes were recommended, but a scheme embodying a slow and progressive development towards the attainment of a separate and special department the sole duty of which in the first instance should be the prevention and mitigation of plague epidemics while this disease continued its ravages in India.

Let us turn to the recently published correspondence between the Government of India and the Secretary of State for India for information as to the views held by the former.[2] One of the main objections put forward by the Government of India to the organisation proposed by the Royal College of Physicians is its unsuitability to India, but the papers relating to the Punjab show that this province actually possesses on a very small scale an organisation not dissimilar from that which the Royal College of Physicians recommended. The province is stated to have a special plague staff consisting of ten medical men belonging to the Indian Medical Service, four physicians sent out from England, and a subordinate staff of 23 assistant surgeons and 38 hospital assistants. The difference between this and the scheme recommended by the Royal College of Physicians lies in the fact that in the latter qualified women are added, and the suggestion is made that there should be, to begin with, a similar organisation for at least four or five centres, that these centres should be used as training places for other medical men and women in order that other fresh centres could be formed where most needed, and that in this way a special plague organisation should be brought into being and developed. It is not likely to be contended seriously that 14 medical officers with a few native assistants can cope in the slightest degree effectually with such an epidemic as that which has been prevailing in the Punjab during the past seven years, even when there are added to this special organisation the 29 civil surgeons with their other duties. The Punjab is slightly larger than Great Britain. It is divided into five divisions, has 29 districts, and 140 small towns. It is only necessary to state these facts to make clear the absurdity of attempting to combat one of the worst epidemics known in history with 14 medical men and their assistants.

In the Madras Presidency, where plague has been kept under reasonable control, it is stated that the Royal College of Physicians' "scheme is for all practical purposes not materially different from that which is now in existence in this presidency," and we learn later that a sanitary organisation was begun in 1895—i.e., a year after a sanitary service was recommended to the Government of India by the Medical Congress held in Calcutta in 1894. A similar reply comes from the United Provinces of Oudh and Agra. So that in at least three provinces the principle of the proposed organisation has already been accepted and is in operation, which are facts that do not consort well with the view that the proposals are not adapted to India or of any practical utility. Organisation on adequate and proper lines is the first essential in combating plague. Neither at the beginning of the plague nor after 11 years' experience does this fact appear to have impressed itself upon the Indian Government. It was not recognised when the initial mistake was made of reinforcing its medical service in 1897 by large numbers of troops. This circumstance is mentioned in the latest despatch apparently as rather a creditable proceeding instead of one which did more to assist in the complete failure which it deplores and in raising hostility to every measure connected with plague than any other factor. Nor was it recognised in the inoculation campaign in 1902, when the plague service was raised to 77 European medical officers, 37 of whom came from England, for the organisation was still inadequate for the purposes intended. Many of the more important operations had accordingly by order to be intrusted to compounders—i.e., to assistants very little different from Indian villagers, and in case of great stress of work the duty of actually opening the bottles of the prophylactic was to be intrusted to any of the intelligent villagers gathered together for the inoculation. We know the result. The campaign failed and the onus of the failure was hastily and mistakenly placed on the Bombay laboratory instead of on an inadequate organisation and the absence of coördination in the different departments working on plague.

---

[1] See THE LANCET, August 24th, 1907, p. 537.

[2] Correspondence regarding Measures for the Prevention of Plague. Wyman and Sons, London. 5½*d*.

◆

## Flies as Carriers of Disease.

ONE of the most striking of the discoveries made by pathologists in recent years has been that of the important part played by insects of various kinds in the conveyance of disease to mankind and to the lower animals. An entirely new field of research has thus been opened up and the revelation of a novel source of danger has suggested the adoption of prophylactic measures which would have seemed ridiculous only a generation ago. The first inkling of this source of infection was the hypothesis put forward by Sir PATRICK MANSON as to the origin of malarial infection in the bite of the mosquito, a suggestion brilliantly converted into certainty by the work of ROSS among our own countrymen and of the Italian observers GRASSI and BIGNAMI. It was not long before facts were brought forward tending to attribute to the insect world the responsibility for other serious diseases. In the case of yellow fever, although the causal agent has not yet been identified, it is pretty definitely established that another species of mosquito conveys the infection, an interesting point of contrast with malaria lying in the probability that the insect is here the definitive and man only the intermediate host of the parasite. Another disease produced by the bite of a blood-sucking insect is the deadly African lethargy or sleeping sickness caused by a trypanosome conveyed by the fly glossina palpalis. Nor is it only winged insects which carry infection, for the fleas which infest rats are generally believed to convey infection to human beings in epidemic outbreaks of plague. In this country we are fortunately not exposed to any serious dangers from the bites of disease-bearing insects, though from time to time cases of dangerous and even fatal cellulitis are reported due to the bite of a horse-fly infected with some virulent germ. But it is not only by direct inoculation that infection may be spread: food may be contaminated with pathogenic bacteria carried by insect scavengers and its consumption may give rise to fatal mischief. The very interesting paper by Dr. R. M. BUCHANAN[1] which recently appeared in our columns emphasises the reality of the danger to which we may be exposed by the agency of the common varieties of house-fly. Dr. BUCHANAN first points out how well adapted is the foot of the fly for carrying on it particles of any adhesive material over which the insect has crawled. Particles loaded with bacteria will readily adhere to its bristles and pads, to be smeared over the next object on which the fly settles. Food of almost all kinds attracts flies, which crawl over it if it is solid and too often fall into it when it is liquid, so that infection readily occurs. In Dr. BUCHANAN'S experiments flies were made to crawl over Petri dishes containing some nutrient medium and the resulting colonies of bacteria were counted and studied. It is satisfactory to find that flies caught in an enteric ward of a fever hospital did not give rise to any colonies of typhoid bacilli when thus treated; even when they were caused to crawl over actual fæcal matter the number of typhoid colonies which developed was very small as compared with the saprophytic organisms present. Still some colonies were observed to form. Staphylococci and tubercle bacilli were also capable of conveyance by the same means. Much more striking results were, however, obtained with the organisms of some epizootic diseases. Flies which had crawled over the carcass of a pig dead from swine fever readily conveyed a large number of the causal organisms to artificial media, and even more marked infection occurred from insects which had been brought into contract with a guinea-pig dead from anthrax. The bacilli of glanders were also carried on the feet of flies. Nor is Dr. BUCHANAN the only authority who has called attention to flies as a means of conveying disease. A notable communication by Dr. H. H. TOOTH,[2] based on his experiences during the South African war, drew a striking picture of the probable responsibility of the swarms of flies for the spread of the epidemic of enteric fever among the British troops in the field, and a similar view was maintained by Dr. A. B. DUNNE[3] who noted that the incidence and remission of typhoid infection corresponded very closely with the appearance of flies in the hot season and their disappearance as cold weather followed. It would seem, therefore, that it is not only in the laboratory but also under natural conditions that flies may act as carriers of disease.

The question, then, as to the actual amount of danger attributable in this country to such a source of infection is worthy of careful study. Fortunately in temperate climates flies do not abound to the same extent as in tropical and subtropical conditions. There they are capable of rendering life almost intolerable by their very multitude; those who have suffered from them will appreciate the horrors of the Egyptian Plague and sympathise with those ancient races who identified the chief power for evil with the Beelzebub, "Lord of the Flies." The proverb that "Dead flies cause the ointment of the apothecary to send forth a stinking savour" also bears witness to the antiquity of the evil and to the antagonism between the insects and the medical profession. In this country they are regarded merely as a minor nuisance, an enemy from whom meat has to be guarded rather through fear of resulting maggots than from any danger of more subtle contamination. It might even be suggested that they were useful as scavengers, clearing up all sorts of refuse; but this credit can scarcely be given to them, as they tend to wander rapidly from one source of food to another rather than to stay and to finish up any one delicacy; while it is probable that infective microbes would pass through the alimentary canal of the fly alive and would be deposited in undiminished virulence in some fresh spot together with their excreta. Regarding flies, then, as potential carriers of infection, two factors have to be taken into consideration, the existence of foci of contamination to which they have access and the possibility of their transferring the contagium to mankind or the lower animals. The principal human diseases prevalent in this country which flies have been accused of spreading are enteric fever and epidemic summer diarrhœa. In both of these the infective agent probably generally leaves the body of the patient in the stools and conveyance of infection to others by flies implies that these insects have access to fæcal matter. In ordinary circumstances this seems hardly likely to occur where there is a well-organised system of water drainage, though perhaps filter-beds at sewage farms may offer opportunities for such infection. It is otherwise in such places as still employ dry systems of sewage disposal, and attention was forcibly directed a few years ago to the resulting danger by Mr. A. W. MARTIN,[4] medical officer of health of Gorton, where the "privy-midden" system was in operation. In his opinion flies were largely responsible for the prevalence of the diseases just mentioned. In the case of epizootic diseases there would seem to be greater danger, since flies may settle on the dead bodies of animals which have succumbed to such affections as swine fever, anthrax, and glanders and may readily convey infection to the feeding troughs of others. Probably so long as the carcass remains entire the risk of the insects becoming contaminated with bacteria is small, but it is important that infective material should be destroyed by fire or, at all events, deeply buried as soon as an inspection of the carcass has been carried out. To insure due care in such cases it is desirable that the reality of the danger arising from this mode of conveyance should be generally recognised. Dr. BUCHANAN has done good work in proving experimentally what had previously been largely a matter of surmise. From the domestic point of view also the problem of preserving food of all kinds from the attentions of flies becomes one of greater urgency. Hitherto it has seemed but a small matter. But if *de minimis non curat lex*, science has proved that it is by attention to what appear to be small things that the greatest results may be achieved, and in this case a little forethought may avert serious danger.

---

[1] THE LANCET, July 27th, 1907, p. 216.

[2] Brit. Med. Jour., March 16th, 1901, pp. 642, 775.

[3] Ibid., March 8th, 1902, p. 662.

# Lancashire Sanitation.[1]

IT is just over 30 years since the passing of the Public Health Act of 1875, a period of time supposed to correspond with a generation of human beings, and it might be hoped that sanitary knowledge had now become so widely diffused that it would be difficult to find any traces of the old condition of things, when drains were primitive or non-existent, houses often barely fit for habitation, and dairies and bakehouses managed with no regard to cleanliness or health. Unfortunately, such a hope is far from realisation even at the present day. In too many parts of the country progress has been slow and uncertain: money is more valued than health and the most necessary measures of sanitation are often neglected when they involve an addition to the rates. Instances of such parsimony are within the knowledge of all, but documentary evidence is also available in the reports made from time to time to the Local Government Board by its inspectors who are sent to investigate the sanitary condition of individual localities. A batch of such reports has recently been issued, dealing with a group of districts in Lancashire and the condition of things revealed in these papers is such as to cast a slur on the civilisation of a country in which they are possible. It is amazing to find that in the very suburbs of Manchester, in the district of Droylsden, over three-quarters of the houses are supplied only with midden-privies in place of water-flushed closets, that many houses are built with windows that are not made to open, and that indescribable filth is prevalent in many of the poorest houses. But this state of things is by no means confined to the district just mentioned. Midden-privies are common at Limehurst, Denton, and Failsworth. At Lees we are informed that 870 houses have only 685 closets of any sort between them and that groups of 13 or 14 houses exist with only four closets to the group. In several districts there is no isolation hospital for infectious cases other than small-pox: at Failsworth only eight out of 62 cases of scarlet fever were removed from their homes for treatment. Back-to-back houses are found in some of the districts with no possibility of through ventilation; common lodging-houses are allowed to be kept in a filthy and insanitary condition. What wonder, then, that infantile mortality is high in these areas where not only do the women go out to work in the factories but home conditions are such as has been described. And if the human habitations are so neglected can it be wondered at that the cowsheds are noted as unsatisfactory. It is altogether a shameful and distressing condition of affairs to exist among us at the outset of the twentieth century.

Lamentation over our backslidings is, however, unprofitable unless it leads to efforts at improvement, and with this object it is advisable to endeavour to establish the actual causes which lead to such hygienic failures. It is not difficult to discover some at least of the defects at present existing. First and foremost the position of the medical officer of health must be altered. He upholds in each district the teaching of science; to him the local governing body must look for guidance in all matters of health affecting its district. It is essential, therefore, that the conditions of appointment for these officers should be such as to enlist the services of the best men and to leave them sufficient time to devote to the important duties of their office. Further, these officers must be protected against undue influence brought to bear upon them by the representatives of local interests which may be affected by strict sanitary administration. It is notorious that in all these respects the present condition of affairs is highly unsatisfactory. Fair remuneration and fixity of tenure are alike wanting. In not one of the group of districts dealt with in the present series of reports is a medical officer of health appointed to give his whole time to the duties of his post. Further, for such time as they are able to devote to health matters these officers are paid salaries which are almost insulting. Thus at Denton the medical officer of health receives £40 per annum, while the inspector of nuisances is paid £250. At Lees and at Audenshaw the salaries of the medical officers are £20 and at Hurst £30. At Ashton-under-Lyne the medical officer of health, who had been paid £130 a year, died, and the town council appears to have thought the occasion a happy opportunity for retrenchment, for it not only passed over the candidate for the office who, in the opinion of the Local Government Board inspector, was best qualified to hold it, but it appointed a new officer for only six months at a salary of £40 for that period. Nor is this instance of cheese-paring policy unique, for, as we noted last week, the town council at Southend-on-Sea has similarly distinguished itself, practically dismissing a very capable and efficient officer and reducing the salary attached to the post from £600 to £500 per annum. Naturally, the Local Government Board does not view such proceedings with favour, but the powers of the Board are limited. At Ashton-under-Lyne the sanction of the Board was given to the raising of a loan for sanitary improvements on certain conditions; but the conditions were not fulfilled and seemingly no power exists to enforce them. It is clearly desirable that the powers of the central body should be enlarged, so as to enable it to deal with recalcitrant local authorities. If according to the elegant metaphor of Mr. WINSTON CHURCHILL it is desirable "to ginger" the local fathers in the matter of small holdings, much more is it needful in the domain of hygiene. It is certain that in many instances local bodies are unsuited to administer the laws of health, as personal interests are too likely to intervene and to warp their judgment. A change in the law is desirable so that the post of medical officer of health should be permanent, appointments being carefully supervised by the Local Government Board; and provision should be made that if a sanitary authority refuses to carry out the advice of its expert officer, an appeal should automatically be made to the Government department. Payment of health officers should be adequate to enable them to give their whole time to their public work, and if any district is too small or too poor to afford this, amalgamation of adjacent areas for purposes of sanitary administration should be insisted upon.

---

[4] Public Health, 1902-03, xv., p. 652.

[1] Reports of Medical Inspectors of the Local Government Board. Nos. 263-268, 270, 271, and 273 (districts of Droylsden, Denton, Mossley, Failsworth, Lees, Hurst, Audenshaw, Ashton-under-Lyne, and Limehurst). 1907. Wyman and Sons, Limited, Fetter-lane, E.C.

But it is not only the sluggishness of local authorities or the overworked state of their medical officers that stands in the way of progress. The habits of the classes who inhabit insanitary areas must be changed. No landlord can be expected to spend money on improving his houses when the tenants tear up and burn the wood work, sell the leaden pipes, and prefer a condition of filth to any attempt at cleanliness and decency. That such degraded habits exist is attested by the reports before us, and the conditions which produce them call for treatment. It is to education that we must look for a remedy and, unfortunately, true education spreads slowly. Yet it does spread gradually. The sanitary condition of the country as a whole shows a marvellous advance on the old state of things, and when among the subjects taught in our elementary schools is included instruction in the rudiments of hygiene we may hope that rich and poor alike will recognise their true interests and that slums with their attendant horrors will cease to constitute a blot on our civilisation.

# Annotations.

"Ne quid nimis."

## PRESERVATIVES AND DYES IN FOODS.

THE United States Department of Agriculture has issued a provisional "decision" on the question of the use of dyes, chemicals, and preservatives in foods. It has been determined in general that no drug, chemical, or harmful or deleterious dye or preservative may be used. Common salt, sugar, wood smoke, potable distilled liquors, vinegar, and condiments may be used. Saltpetre is allowed pending further inquiry. No prosecution, again, is to be instituted in the case of the application of the fumes of burning sulphur ($SO_2$) as usually employed in the manufacture of those foods and food products which contain aldehyde, sugars, and so on, with which sulphurous acid may combine if the total amount of sulphur dioxide in the finished product does not exceed 350 milligrammes per litre in wines or 350 milligrammes per kilogramme in other food products. Of this amount 70 milligrammes may exist in the free state. Foods and food products manufactured or packed during the season of 1907 which contain sodium benzoate in quantities not exceeding one-tenth of 1 per cent. or an equivalent of benzoic acid, will be permitted provided that it has been customary to use this preservative in such foods and food products. There is clearly no intention of the department to allow the use of preservatives to be extended. The label of each package of sulphured foods or of foods containing benzoic acid or benzoate must bear a statement that the food is preserved with this, that, or the other preservative, as the case may be. The department will not allow any statement on the label to the effect that the article is guaranteed to conform to the requirements of the Food and Drugs Act. The use of any dye, harmless or otherwise, to colour or to stain a food in a manner calculated to conceal damage or inferiority is specifically prohibited and the use in food for any purpose of any mineral dye or any coal-tar dye except certain ones which are listed will be grounds for prosecution. Pending further investigation now proceeding certain coal-tar dyes which are made specifically for use in foods and which bear a guarantee from the manufacturer that they are free from subsidiary products and represent the actual substance the name of which they bear may be used in foods. The list contains the following colourings. *Red shades:* amaranth, ponceau 3 R., erythrosin. *Orange shade:* orange I. *Yellow shade:* naphthol yellow S. *Green shade:* light green S.F. yellowish. *Blue shade:* indigo disulpho acid. So far the use of copper for colouring peas has not been finally determined, but for the present all vegetables which are "greened" with copper salts and which do not contain an excessive amount of copper will be admitted to entry provided that the label bears a statement that salts of copper have been used. It seems to us that the American Government is convinced that the best policy is that which we have consistently urged for years in regard to all questions of fraud and adulteration, and that is to insist upon the use of an honest label. England has no statute applying to the prohibition or limitation of preservatives or colourings in food, but it still has the recommendations of a departmental committee which were drawn up six years ago! And so in 1907 the principal chemist of the Government laboratory is compelled to write in his report, which we noticed in our issue of August 24th, p. 542, "The figures show that butter frequently contains boron preservative in excess of the amount recommended as the limit by the Committee on Preservatives in Food, but in the absence of legislation on the point and in view of the conflicting decisions in the courts I have been unable to advise that proceedings should be taken." In the American bulletin it is stated that the views of "eminent physiologists, hygienists, health officers, and physicians in the United States" were obtained as to the propriety of using preservatives in food and a tabulation of these views points "overwhelmingly to the fact that preservatives, as a class, are injurious to health and hence their use is under the Act inhibited." THE LANCET, on its own initiative, collected similar evidence over ten years ago, but *festina lente* applies more to English than to American methods.

## THE FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE Fourteenth International Congress of Hygiene and Demography is to be held in Berlin from Sept. 23rd to 29th, and Dr. Nietner, the secretary-general, asks us to give publicity to the following. Up to the present 2500 applications have been received from intending members of the Congress. As the number of applications on such occasions always grows larger and larger in the course of the last weeks previous to the meeting there may be some difficulty in procuring suitable lodgings. For that reason, and also to facilitate all necessary preparations, intending visitors are respectfully but urgently requested to send in their applications as soon as possible. As a large number of the members of the Congress are already on their way it has not been possible to send the last "conclusions" to the members living in distant countries. Members will, however, be handed everything they require in connexion with the Congress on calling at the office on their arrival. Dr. Nietner's address is 9 W., Eichhornstrasse 9, Berlin. Prince Heinrich von Schönaich Carolath has been elected President of the Congress. The Vice-Presidents are Professor Rubner, director of the Hygienic Institute of the University of Berlin, and Professor von Meyr of Munich. Several *Festschriften* will be printed and presented to the members of the Congress. The Imperial Statistical Office and the Imperial Health Office will issue jointly a volume entitled "The German Empire from a Hygienic and Demographic Standpoint." The Royal Prussian Cultus-ministerium (Ministry of Education) will present two volumes to the members of the Congress, of which one deals with measures for preventing the spread of epidemics whilst the other gives a description of the new premises of university clinics, laboratories, and other medical institutions of various Prussian universities. The city of Berlin will contribute a work on the Hygiene of the Metropolis. Every member on his arrival will receive a guide-book with a short description of about 120 hygienic and other institutions over which the members are to be shown. This guide-book is in German, French, and English. A committee, including the leading members of the medical profession of Berlin and representatives of the various medical societies, of the medical faculty, and of the Army Medical Corps, has been formed for the purpose of showing attention to the members of the Congress on behalf of the Berlin medical men. The committee has decided to arrange a reception on Sept. 28th in the Exhibition Hall, Hardenbergstrasse, where there is room for several thousand guests.

## ALCOHOLISM AND CIRRHOSIS OF THE LIVER IN CHILDHOOD.

THE pathology of the coroners' courts as reported in the lay newspapers is frequently something to wonder at and recks but little of text-books or authorities. The reason is perhaps not far to seek. The medical practitioner in giving his evidence usually strips it so far as possible of technicalities in order to make clear to the members of the jury the conditions found by himself during his attendance on the case or at the post-mortem examination, while the coroner, if he happens to be a medical man, not infrequently further explains any obscurities. The brief abstracts published, however, often enable but little exact information to be drawn by those reading them. A recent case in point may be quoted in illustration. At the inquest on a child, aged three years and nine months, it came out in evidence that she had swallowed a considerable quantity of gin, apparently about two and a half fluid ounces and that when seen by a medical practitioner she was found to be unconscious and suffering from general convulsions. These were relieved by the administration of chloroform but death eventually occurred. The post-mortem examination, which was performed by Dr. L. Freyberger, appears to have revealed a condition of cirrhosis of the liver, which was hobnailed and weighed 16 ounces, while the spleen and the kidneys were firmer than usual, and in one report it is stated that the "child had an adult brain," whatever that may mean. Both Mr. H. Wheelwright, the practitioner in attendance, and Dr. Freyberger stated that death was due to failure of respiration following acute alcoholic poisoning and that the changes found post mortem could not be produced by a single dose but were those usually associated with chronic alcoholism. The coroner after the medical evidence adjourned the inquest in order to make inquiry regarding the parents, since the conditions found strongly suggested that this occasion was not the first on which the child had taken alcohol. At the adjourned inquiry evidence was forthcoming that the parents bore a very good character both in their business and domestic relations. An inspector of the National Society for the Prevention of Cruelty to Children said that they had "the highest of reputations for kindness to their children" and that he could not trace any fact pointing to the child having taken alcohol before. The coroner, in summing up, said that there must be a certain amount of doubt in the case and that the high character of the parents made it very perplexing when taken into consideration with the medical evidence. It may be of some interest briefly to consider the occurrence of cirrhosis of the liver in children, which, though rare, is well recognised as occurring. 65 cases were collected by Howard and 53 by Laure and Honorat, but in such groups the ages of the children have usually been between nine and 15 years. In a considerable proportion of these cases no cause could be found, although alcoholism was traced as a cause in 15 per cent. of Howard's cases. One special form of true cirrhosis in children is due to syphilis and has been described as parasyphilitic cirrhosis of children. In infancy and early childhood the condition is more rare and although some cases are due to syphilis, in others the actual causation eludes discovery. The view is gaining ground that alcohol is not the direct and only cause of polylobular fibrosis of the liver, but that various causes, including alcohol, may lead to a condition favouring the action of some toxic agent, whether chemical or bacterial, which is the actual cause of the condition. In any case, it is wise to be extremely cautious in suggesting that the cause of a cirrhosis in a child is due to the taking of alcohol, as the history of the above case demonstrates.

## THE SUMMER: JUNE 1st TO AUGUST 31st.

| — | Mean maximum temperature. | Mean minimum temperature. | Mean temperature. | Difference from average. | Days with rain. | Total fall. | Difference from average. | Hours of sunshine. | Difference from average. |
|---|---|---|---|---|---|---|---|---|---|
| | ° | ° | ° | ° | | Ins. | Ins. | | Hrs. |
| Douglas, I.M. ... | 60 | 50 | 54·6 | -2·2 | 57 | 9 9 | +0·9 | 530 | - 64 |
| Blackpool ... ... | 62 | 51 | 56·3 | -2·4 | 64 | 12 0 | +3·2 | 533 | - 17 |
| Llandudno ... ... | 63 | 52 | 57·5 | -2·0 | 54 | 8·5 | +1·0 | 509 | - 47 |
| Rhyl ... ... ... | 62 | 52 | 57·1 | * | 59 | 7·1 | -0·2 | 529 | * |
| Aberystwyth ... | 61 | 52 | 56·6 | * | ? | ? | ? | 411 | * |
| Bettws-y-Coed ... | 63 | 50 | 56 4 | -3·1 | 68 | 11·9 | * | 392 | * |
| Llangammarch Wells ... ... ... | 62 | 48 | 54·8 | -3·2 | 68 | 15 2 | +5·8 | 434 | * |
| Scilly Isles ... ... | 62 | 55 | 58 4 | -1·6 | 52 | 3·5 | -3·4 | 543 | - 89 |
| Jersey ... ... ... | 65 | 54 | 59·7 | -1·9 | 42 | 4 6 | -2 3 | 646 | - 27 |
| Torquay ... ... ... | 64 | 53 | 58·4 | -2·4 | 47 | 4·4 | -2·9 | 593 | - 69 |
| Sandown, I.W. ... | 66 | 53 | 59·4 | * | 42 | 4 4 | * | 689 | * |
| Bournemouth ... | 66 | 51 | 58 4 | * | 39 | 4·2 | * | 622 | * |
| Worthing ... ... | 63 | 53 | 57·9 | -2·6 | 40 | 4·1 | -2·3 | 631 | * |
| Brighton ... ... | 64 | 53 | 58·4 | -2·8 | 39 | 3·6 | -2·9 | 591 | - 84 |
| Eastbourne ... ... | 61 | 52 | 56·6 | -4·0 | 40 | 4·4 | -2·5 | 656 | - 14 |
| Hastings... ... ... | 64 | 52 | 57·7 | -1·9 | 43 | 6·3 | -0·3 | 590 | - 92 |
| Folkestone ... ... | 63 | 51 | 57·1 | * | 34 | 4·1 | -2·4 | 606 | * |
| Margate ... ... ... | 66 | 53 | 59·1 | -1·5 | 36 | 4·7 | -1·2 | 550 | - 32 |
| Clacton ... ... ... | 65 | 52 | 58·5 | -2 9 | 37 | 4·5 | * | 552 | * |
| Lowestoft ... ... | 64 | 50 | 56·9 | -2·3 | 31 | 3·4 | -3·2 | 549 | * |
| Skegness... ... ... | 63 | 49 | 56·2 | * | 48 | 4·1 | * | 566 | * |
| Scarborough ... ... | 63 | 50 | 56·2 | +1·9 | 46 | 5 6 | -1·9 | 473 | - 36 |
| Aberdeen ... ... | 60 | 47 | 53·5 | -2·3 | 61 | 7·5 | -0·4 | 422 | - 81 |
| Harrogate ... ... | 62 | 47 | 54·7 | -2·7 | 50 | 6·7 | -0 7 | 462 | - 97 |
| Bath... ... ... ... | 65 | 52 | 58·1 | -2·6 | 52 | 9·1 | +1·2 | 547 | * |
| Tunbridge Wells... | 65 | 50 | 57·4 | -2·7 | 42 | 6·4 | -0·6 | 549 | - 58 |
| Nottingham ... ... | 65 | 49 | 57·0 | -3·1 | 53 | 7·0 | -0·5 | 459 | * |
| Birmingham... ... | 63 | 50 | 56·5 | -2·6 | 47 | 7·3 | -0·8 | 429 | - 50 |
| Oxford ... ... ... | 65 | 50 | 57·6 | -2·7 | 53 | 7·6 | +0·4 | 472 | -109 |
| London ... ... ... | 66 | 53 | 59·2 | -2 9 | 42 | 4·8 | -2·2 | 489 | - 26 |
| Manchester ... ... | 63 | 51 | 56·8 | -1·9 | 65 | 13·2 | +3·0 | 359 | * |
| Glasgow ... ... ... | 60 | 49 | 54·3 | -2·6 | 62 | 12 3 | +2 1 | 359 | - 82. |

* No trustworthy average.

All the above figures, excepting those for Sandown, have been computed from the reports published daily or weekly by the Meteorological Office, and it is therefore permissible to suppose that they represent accurately the temperature, rainfall, and bright sunshine of the past summer at the various observing stations. It will be seen that the mean temperature for the three months was everywhere below the average, the defect ranging from about two degrees to four degrees. The absence of heat was generally much more marked during June than during the two subsequent months, but throughout the whole period there were extremely few afternoons with an average temperature for the time of year. Most of the nights were also cold, but as a rule the divergence from the normal was less after sunset than during the daytime. The daily range of temperature was consequently considerably smaller than is usual in summer, and this fact probably accounts to some extent for the generally low death returns. But there were other elements which also tended to render the weather of the summer more than usually favourable to health, and if a meteorologist were asked to give his opinion he would probably say that besides the equability of temperature the other contributing causes were (1) the very frequent slight falls of rain that had such a cleansing effect upon the atmosphere, and (2) the relatively great velocity of the wind, which prevented the air becoming stagnant in the large cities. One of the chief features of the season was, indeed, the very large number of days when the wind from some point of the compass between west and south blew strongly or briskly. The air was thus never allowed to rest, but a pretty constant fresh stream was always arriving from the broad Atlantic. Under such conditions a summer is certain to be cool in this country, just as a winter cannot help being mild. In the summer the air has no time to be warmed by radiated heat from the earth and in winter it is in too great a hurry to be cooled from a like cause. Shade temperature readings of 70° and above were remarkably rare. In London (Westminster) there was only one in June, nine in July, and 12 in August, and the highest temperature of the whole year at the same well-exposed station was not during summer at all, but on May 12th, when the thermometer rose to 79°. Days with more or less rain were very numerous, but except in the north and north-west and in a few scattered localities elsewhere the aggregate fall was small. Nearly everywhere July and August were dry, the heavy amounts in the north-west being the result of a wet June. The driest spots were in the extreme east of England and at the Scilly Isles, Lowestoft having no more than 3·4 inches and the Scilly Isles only 3·5 inches. In the extreme south-east only about one day in three was rainy, while in the north-west there was only about one day in three without rain. Sunshine, like temperature, was below the average throughout the entire kingdom, but in several localities the deficiency was very small. At Eastbourne it was not more than 14 hours, at Blackpool 17 hours, and in London 26 hours. Omitting the large aggregate of 689 hours at Sandown, the records of which were presumably not examined by the Meteorological Office, the sunniest place given in the table was Eastbourne with 656 hours, followed very closely by Jersey and Worthing, while the most sunless spots were Manchester and Glasgow, each with 359 hours. These two populous cities received less than four hours' sunshine per day, while Eastbourne enjoyed rather more than seven hours and London more than five and a quarter hours per day. The record for London was very satisfactory, its total of 489 hours being only 20 hours less than that at Llandudno, 60 more than at Birmingham, and 27 more than at Harrogate. During the corresponding period of 1906 the metropolis recorded 693 hours and the number of hours at Torquay, Bournemouth, Clacton, and several other resorts on the south and south-east coasts exceeded 750.

## FATAL HÆMORRHAGE FROM THE JUGULAR VEIN IN CHRONIC OTITIS MEDIA.

IN the *Boston Medical and Surgical Journal* of July 4th Dr. F. L. Jack and Dr. F. H. Verhoeff have reported a case of chronic otitis media which terminated in an unusual manner—by fatal hæmorrhage from the jugular vein. A girl, aged two and a half years, was taken to hospital. She had been in good health until two weeks previously, when she became fretful and evidently was in pain. A swelling had been noticed behind the right ear for nearly a week and a discharge of pus from the ear for several days. There was much coagulated blood in the meatus. Over the tip of the mastoid, extending about one inch below and one and a half inches posteriorly was a large, tender, and fluctuating swelling of the size of a Tangerine orange. The child was admitted and two hours later severe hæmorrhage occurred from the mouth and nose. When the house surgeon arrived she was exsanguine and was not breathing. There were clots in the mouth and nares and signs of vomiting on the clothing. Adrenalin and normal saline solution were injected subcutaneously and artificial respiration was employed, but without avail. At the necropsy, which was performed 19 hours after death, both nostrils and the right auditory meatus were found filled with clotted blood. Below and behind the meatus was a swelling of the size of an olive, over which the skin was ecchymosed. The meninges and brain were normal. The venous sinuses, including the right lateral sinus and bulb, were intact. The whole temporal bone with a large amount of the soft tissues beneath and a portion of the wall of the pharynx were removed and hardened for 48 hours in 10 per cent. solution of formalin. A stream of water could be forced through the carotid canal without finding its way into the tympanum. The soft tissues beneath the bone which contained the carotid artery and jugular veins were infiltrated with blood and there was a large hæmorrhagic extravasation which communicated with the pharynx a short distance below the mouth of the Eustachian tube. The extravasation extended outward to the angle of the jaw, undermined the subcutaneous tissue, formed the swelling previously mentioned, and communicated with the lumen of the external auditory canal. The tympanic membrane was intact but was retracted and united to the promontory, evidently as the result of an old perforation. The tympanum and Eustachian tube contained much exudation but no blood. Attached to the walls of the tympanum were several small polypi. The attic and mastoid cells were filled with exudation but were not necrotic. Microscopic examination revealed the characteristic appearances of chronic suppurative otitis media. The carotid artery was normal but its sheath showed chronic inflammation as far as the first bend in the bony canal, most marked at the entrance of the latter. The sheath for a short distance was infiltrated with blood which had forced its way from the large hæmorrhage beneath the temporal bone. The soft tissues in which this hæmorrhage had taken place were involved in granulation tissues in which were large areas of pus cells. The wall of the jugular vein which passed through this abscess was necrotic, lined with purulent thrombi, and in places perforated. Sections of the abscess stained by Gram's method showed numerous streptococci but no other bacteria.

## INFANT MORTALITY IN HUDDERSFIELD.

IT is not without interest to note the apparent effect on infant mortality of the local Act which was passed last year and enacted the early notification of births occurring within the borough of Huddersfield to the sanitary authority. The rate of infant mortality—of deaths under one year of age—in Huddersfield during 1905 was equal to 119 per 1000 births and rose during 1906 to 135 per 1000, the average rate in the 76 large English towns showing an increase from 140 in 1905 to 145 in 1906. Thus the rate of infant mortality in Huddersfield, which was 15 per cent. below the large urban rate in 1905, was only 7 per cent. below the same average in 1906. It must be remembered that the Birth Notification Act did not come into operation in Huddersfield until late in 1906, but bearing in mind the voluntary efforts made by the mayor and sanitary authority to promote early notification of births prior to the passing of the Act the figures noted above were somewhat disappointing. During the first six months of this year the rate of infant mortality in the 76 large towns was equal to 123 per 1000 births and the rate in Huddersfield did not exceed 97 per 1000; thus the Huddersfield rate was 21 per cent. below the mean large urban rate. The interesting point for consideration is whether this relative reduction in the rate of infantile mortality in Huddersfield during the first half of this year, compared with the mean rate in other large towns, can safely be attributed to the operation of the Huddersfield local Act. During the six weeks of unsummerlike weather and temperature ending on August 10th, which has checked the usual fatality of summer diarrhœa, the rate of infant mortality in our large towns has fallen to 96 per 1000, while in Huddersfield it has not exceeded 38 per 1000. The evidence of these statistics seems therefore to point to the successful administration of the Huddersfield local Act since the beginning of this year as the cause of the recent reduction of infant mortality in that town. In view of the new Act making early notification compulsory the effect of the local measure in Huddersfield on infant mortality acquires much importance.

## FATAL HÆMOLYSIS FOLLOWING TRANSFUSION OF BLOOD.

IN November, 1906, Dr. Crile published in the *Journal of the American Medical Association* an important paper recommending as the best method of transfusion of blood anastomosis of the proximal end of an artery of the donor to the proximal end of a vein of the receiver.[1] Since that period the method has been tried in the treatment of anæmia in America at times with favourable results, at others without much apparent change. In the *Journal of the American Medical Association* of August 3rd Dr. William Pepper and Dr. Verner Nisbet have reported a case in which fatal hæmolysis followed—an observation of great importance because transfusion of blood has always been regarded as innocuous. A man, aged 33 years, was admitted to hospital on April 16th last. In October, 1906, it was noticed that his naturally pale complexion was becoming paler and tinnitus and nocturnal bleeding from the gums began. The bleeding gradually became more severe and took place both by day and by night for ten days preceding admission. Blood was also passed in the urine and fæces. 11 years before admission the patient had a hard sore on the penis which was followed by a rash, and he was treated for syphilis for six months. On admission the temperature was 98° F. and the pulse was 108. The skin was of a dirty lemon colour. The lymphatic glands in the axillæ and groins were palpable. The mucous membranes were very pale and the lips were blood-stained. Blood oozed continuously from the gums. The cardiac dulness extended above the third rib, to the right one centimetre beyond the sternal margin, and to the left three centimetres outside the nipple line. The first sound was loud and was accompanied at the apex by a rough murmur. A systolic murmur was also heard in the third interspace and was not transmitted to the vessels of the neck, over which a humming sound was heard. The pulmonary second sound was accentuated. Blood examination showed 20 per cent. of hæmoglobin and 970,000 red and 3600 white corpuscles per cubic millimetre. Blood was not found in the urine but was present in the fæces. The bleeding continued and the patient steadily lost ground. The diagnosis was obscure. Of hæmophilia there was no history. Scurvy was negatived by the absence of changes in the gums or intramuscular or subdermal effusions. The morphology of the blood excluded pernicious anæmia. On April 26th the patient seemed to be sinking rapidly. A large vein on the left elbow was anastomosed with his wife's left radial artery at 5.52 P.M. and transfusion was continued until 7.25 P.M. Both husband and wife stood the operation well. The red corpuscles at 5 50 P.M. were 420,000; at 7.15 P.M. they were 1,001,000. The bleeding from the gums almost ceased and the patient's colour improved. On the 28th he was much better and there was merely a trace of hæmorrhage from the gums. Transfusion was performed from the radial artery of the patient's brother-in-law. This raised the red corpuscles from 1,270,000 to 1,800,000. In the evening the patient was flushed and lethargic and perspired much. The temperature was 102°. On the 29th he was very jaundiced. The temperature rose to 104°. The arms were painful and swollen and the hands were œdematous. The liver increased in size and became tender and the spleen was palpable. Petechiæ appeared. The urine contained urobilin, hæmoglobin, blood, and many casts. After the first transfusion the urine became slightly reddish and contained a little urobilin, suggesting hæmolysis, but this condition had nearly disappeared at the time of the second transfusion. During the night after the second transfusion the urine became bloody and subsequently its condition showed a direct relation with the jaundice, oppression, and other evidences of hæmolysis. On April 30th the jaundice was worse, the temperature was still high, and the mouth was very dry but not bleeding. Death occurred on May 3rd. The necropsy showed numerous small pulmonary hæmorrhages, dilatation of the heart, and acute parenchymatous nephritis with subcapsular ecchymoses. The cases reported by Dr. Crile seem to show that direct transfusion is a safe procedure in hæmorrhage. But the present case indicates that there may be danger of hæmolysis in certain pathological conditions.

---

[1] THE LANCET, Dec. 22nd, 1906, p. 1737.

## HYPERSUSCEPTIBILITY AND IMMUNITY.

THAT nothing in nature is too trivial to be worth recording is now a commonplace of science. Light is often shed on important problems from the most unexpected quarters. An instance may, perhaps, be seen in some recent researches carried out by Dr. M. J. Rosenau and Dr. J. F. Anderson on the somewhat obscure phenomena of hypersusceptibility[1] produced in animals by injections of foreign serum. The observation upon which these studies were based was the discovery that if an animal were injected with a dose of horse-serum and subsequently received a second dose of the same after some days' interval serious and even fatal symptoms were produced. From further experiments it appears that the same phenomenon results from the injection of other albuminous substances, such as white of egg or even extract of yeast, and that an interval of about ten days must elapse before the condition of hypersensibility is fully developed. This condition is transmitted by the mother to her offspring but not by the father. The administration of uncooked meat results in the production of some degree of susceptibility to the albumins of the animal eaten, but this result is prevented by thorough cooking of the meat. The explanation of the phenomenon is not very clear, but "profound chemical changes, perhaps in the central nervous system, are probably produced by the first injection of a strange serum." The interesting suggestion is made by the writers that the incubation period of an infectious disease—often a period of about ten days, corresponding closely with that needed for the production of hypersusceptibility—may be explained by the existence of some similar action, while the analogy with the phenomena seen after injection of tuberculin is obvious. The still more curious feature seen in some diseases, the occurrence of a crisis, may perhaps prove to come under the same law. These observations have also a bearing upon the production of immunity, the writers holding that a condition of hypersusceptibility is probably necessary as a stage in the production of immunity to one class of diseases. It corresponds to some extent with the "negative phase" or diminished resistance seen after inoculation with bacteria or their toxins. Thus hypersusceptibility produced in guinea-pigs by extracts of some varieties of bacteria (typhoid, colon) was followed by a definite immunity to the corresponding infection but this was not the case with the bacilli of anthrax.

## TRADE CUSTOMS.

THE term "trade customs" in some quarters appears to be the modern synonym for malpractices. So many defendants shelter themselves, or attempt to shelter themselves, behind the plea of trade custom that it would be interesting to have a list published of "trade customs." The public have a right to know what trade customs are. We doubt very much if the public know quite so much about them as the trade. Police-court proceedings enlighten us considerably at times, but there are so many "trade customs" that we plead for a glossary of them. We fancy that we should be fairly safe in saying that such a compilation would open our eyes to a string of petty practices designed more or less to cheat the purchasing public: trade customs, in fact, which though approved by the trade are, strictly speaking, illegal transactions. We should like to see appointed a Royal Commission on "trade customs." The selection of the Commissioners, who, of course, would be authorities on the subject, would be interesting and the evidence of the witnesses would at least be amusing if not instructive. The final report would have the word "swindle" written in every one of its conclusions—that is to say, if the Commissioners honestly set about their business. These may be strong words, but day by day we read in police-court proceedings how indictment after indictment is met by the sickening excuse of "trade customs." Brown paper is found in the soles of boots; it is a trade custom. Silk containing cotton is sold as pure silk; it is a common practice of the trade and therefore a justifiable one, because the trade recognises it. It is also at times the trade custom to call an article brandy which is not brandy, soda-water which is not soda-water, butter which is not butter, and so on *ad infinitum.* In fine, it will be found that "trade customs" as a rule do not call a spade a spade and things are not what they seem. The term "trade customs" is a cloak, is not in many instances honest, and in an equal number of instances exists to evade the law. The law should recognise no trade custom which is not straight dealing.

## THE FREQUENCY OF THE BABINSKI SIGN IN GENERAL PARALYSIS.

Dr. Alfred Gordon contributes an interesting paper entitled "A Study of Reflexes of the Lower Extremities in 60 cases of Paresis" to the July (1907) issue of the *Journal of Nervous and Mental Disease* (America). He refers to the general agreement by most authorities that the Babinski sign is rarely present in cases of general paralysis. Robert and Fournial (*Revue Neurologique*, Nov. 21, 1906) reported that out of 66 cases of paretic dementia they had only found it present in one patient. As Dr. Gordon states, the reason for this infrequency is not easy to explain when it is borne in mind that the involvement of the motor tract in general paralysis is the rule and further that the Babinski reflex is unquestionably a sign of an involvement of the motor pathway in its central or terminal ends. Dr. Gordon showed in his first clinical studies[1] that the "paradoxical reflex" is "a sign of irritation or early stage of a lesion of the motor tract," and he considered that it would be of some pathogenetic value to study the relationship of this reflex and the Babinski sign in general paralysis. He refers to Wyruboff's work in the *Revue Neurologique*, 1900, in which he showed that, from the anatomico-clinical standpoint, all cases of general paralysis can be divided into three groups: (1) the first concerns cases characterised by markedly exaggerated knee-jerks and anatomically by a degeneration of the posterior columns in the thoracic region and a recent degeneration of the pyramidal bundles; (2) in the second group the knee-jerks are abolished, which corresponds to a considerable degeneration of the posterior columns in the lumbar regions and some degeneration of the pyramidal tracts; and (3) in the third group there is a marked degeneration of the posterior columns throughout the entire cord, and, again, some changes in the pyramidal bundles. Dr. Gordon concludes from these studies that although "the motor pathway is always involved nevertheless it is only to a very slight degree in the majority of cases." As Babinski's sign is usually the clinical expression of a well-defined degenerative lesion of the motor tract the very moderate degree of pyramidal involvement will perhaps satisfactorily explain the rarity of the "phénomène des orteils" in paresis. He goes on to state that, "on the other hand, the study of the paradoxical reflex in organic nervous diseases suggests very strongly that it is the expression of a slight or early involvement of the motor tract." He found that in 60 cases of well-developed general paralysis which he examined the paradoxical reflex was present in 42 instances and that in 39 of these the knee-jerks were increased and absent in the remaining three. The Babinski sign was present on both sides in only three of the cases and in four others on one side only. Further, he found that in all except two cases when the Babinski sign was present the paradoxical reflex was absent and *vice versâ*. He then passes on to consider Oppenheim's reflex in relation to the Babinski sign and the paradoxical reflex in general paralysis and finally sums up his conclusions as follows: "the old triad of reflex phenomena—viz., exaggerated knee-jerks, ankle-clonus, and Bakinski's sign—which we are accustomed to find in hemiplegia, or in any other organic disease with a distinct degenerative lesion in the motor pathway, is here markedly dissociated. While the first is present in the majority of my cases, the other two are rare. Of the two more recently described reflexes, Oppenheim's is also rare, while the paradoxical is frequent."

---

[1] Rosenau and Anderson: Studies upon Hypersusceptibility and Immunity, Bulletin No. 36, Hyg. Lab., U.S. Public Health and Mar. Hosp. Serv., Wash., 1907.

[1] Journal of Nervous and Mental Disease, July, 1906.

## THE "GOUTTES DE LAIT" INTERNATIONAL CONGRESS AT BRUSSELS.

The Second International Congress of Gouttes de Lait is being held in Brussels from Sept. 12th to 16th inclusive, the first Congress having been held in Paris in October, 1905. The work of these congresses may be summarised under three headings: First, to give advice to mothers; secondly, to encourage breast-feeding; and thirdly, to distribute milk to those infants for whom breast-feeding is either impossible or insufficient. The present Congress is divided into two sections, the first concerned with social and philanthropic questions and the second with the problems of infant hygiene. Foreign delegates may address the Congress in their own language and interpreters are attached to the sections. The main question to be discussed at the general meeting is as follows: "Is it advisable to widen the scope of the congresses of 'Gouttes de Lait' so as to include in their programmes all questions relating to the protection of child life, and should forthcoming congresses bear a new name which will denote the change?" In section 1 the following questions and subjects are to be considered:—

1. Are the "Gouttes de Lait" and other institutions for the protection of infant life satisfactory means for the prevention of tuberculosis, and can they be considered as forming the first necessary step in the solution of the problem of the prevention of tuberculosis? 2. An account of the legislation of different countries concerning the control of the production and distribution of milk. Special stress will be laid in the papers on the measures taken in certain towns for the control of infants' milk. 3. (*a*) Description of institutions of different countries for the prevention of infantile mortality. (*b*) Exact statistics of infantile mortality in each country.

In the second section the following matters are to be discussed:—

4. (*a*) The regulation of infant feeding: (1) breast feeding; (2) artificial feeding. (*b*) Study of digestion in infancy (glandular appendages of the alimentary canal, intestinal flora, fæces, &c.). 5. (*a*) The different milks used in artificial feeding, and the indications for their use. (*b*) Practical and rapid clinical methods of analysing milks. 6. Instruction in the hygiene of infancy by official and private agencies, and its popularisation in different countries.

The Congress is held under the patronage of their Royal Highnesses the Prince and Princess Albert of Belgium, and the general secretary of the Congress is Dr. Eugene Lust, Rue de la Limite, 27, Brussels.

## THE ROYAL SOCIETY OF MEDICINE: CLINICAL SECTION.

The meetings of the Clinical Section of the Royal Society of Medicine will, during the coming session, be conducted on lines somewhat modified from those of its predecessor the Clinical Society of London. It is proposed that during the first half of each meeting medical and surgical cases shall be exhibited and that the remainder of the meeting shall be devoted to the reading of papers. The latter will deal exclusively with the records of cases and clinical methods. The number of meetings during the session has been reduced to eight, and the first meeting will be held on Friday, Oct. 11th.

## THE PRODUCTION OF ŒDEMA.

The question as to the mechanism by which the œdema characteristic of cardiac failure and of renal disease is produced is among the most interesting problems of pathology and distinguished workers have given varying answers to it. Thus Heidenhain, who found that certain substances such as leech extract were capable of causing the escape of lymph from the vessels into the surrounding tissue, inferred that formation of lymph was due to a secretory action of the cells in the capillary walls and that dropsy was caused by overaction of these cells. Professor E. H. Starling, as the outcome of very ingenious experiments, threw doubt on this vital action. He found that by injecting into the blood harmless crystalloid bodies such as glucose it was possible to produce an inflow of lymph into the blood-vessels, resulting in a condition of hydræmic plethora or increase in the total amount of blood with diminution in its density. Œdema, he held, was caused by the resulting rise of pressure in the capillaries, assisted by changes in their walls. He endeavoured to bring the phenomena of cardiac dropsy into line with these observations by assuming a similar inflow of lymph to take place as the result of diminished pressure in the veins. This diminution of pressure was inferred to exist from the observation that obstruction of one of the large veins, though producing a rise of venous pressure near the heart, was accompanied by a shrinking in bulk of the limbs as shown by a plethysmograph—a phenomenon attributed to a fall in vascular tension. Dr. Charles Bolton has recently, in a communication read before the Royal Society on Jan. 17th, come forward to break a lance with Professor Starling over the reality of the condition of hydræmic plethora in such cases. He disputes the accuracy of the inference on which it is founded, as he finds that the result of obstructing one of the venæ cavæ is to produce a transitory rise of pressure in the veins of the limbs which quickly falls to normal owing to a compensatory dilatation of communicating channels, and that the œdema occurs at a time when there is normal venous, and either normal or diminished arterial, pressure. Hence in his view the escape of lymph which constitutes œdema is not due either to increased pressure in the capillaries or to hydræmic plethora. He attributes it to alteration in the capillary walls, though the exact cause of this alteration is not clear from his observations. It may be induced by the initial rise of pressure, though the effects are not visible till this has passed off, or it may be caused by some retraction of the blood stream in the veins. Manifestly the question is not yet settled, though all observers seem at one in assuming an alteration in the cells constituting the walls of the capillaries —a view which appears to bring passive effusions into line with those due to inflammation, the change being possibly one of degree, not of kind.

## DEAF CHILDREN IN ELEMENTARY SCHOOLS.

A DISCUSSION of some importance took place in the ninth section of the recent International Congress on School Hygiene with regard to the arrangements to be made for children suffering from defects of hearing. Dr. J. Kerr Love recommended that those who were merely "hard of hearing" and some of the better cases of the semi-deaf should be taught in special classes in the ordinary schools. Worse cases, including the intelligent deaf-mutes, should attend special day-schools or oral residential schools, while those deaf-mutes who proved failures in oral classes and those of defective intelligence should have manual alphabet teaching in a residential institution. Mr. P. Macleod Yearsley laid stress upon the difficulties of making ignorant or indifferent parents provide the necessary medical treatment for their children who suffer from ear disease and advocated the passage of special legislation to deal with such cases. If this were impracticable he would institute lectures to parents on aural defects and appoint officers to deal with the careless and refractory. After a discussion on papers read the section unanimously resolved that it was desirable to provide special classes for those deaf children who could most suitably be taught in a "hearing environment," under the control of teachers qualified to teach articulation and lip-reading to the deaf, the classes to be subject to special legislation dealing with deaf children. Certainly nothing but good can come of the efforts of the Congress to call public attention to the needs of these sufferers and from full discussion of the problems involved in their education. Difficulties will almost certainly arise in many schools as to provision of separate class-rooms for deaf children, for it seems scarcely possible to give them their lessons in the same room as other classes. It would be necessary to group the schools in some way, so that the special classes could be held at convenient centres. This, however, is only a matter of organisation and presents no particular difficulty. The training of the necessary number of qualified teachers will further have to be arranged.

## RUPTURE OF A BRONCHUS.

IN THE LANCET of Sept. 7th, p. 694, appeared an account of a case which was under the care of Mr. W. H. Bowen in the East London Children's Hospital, Shadwell, and which was recorded by Dr. W. Norman May. The patient was a boy, 15 years old, who had been injured by the wheel of a van passing over his head. He was found to have a double depressed fracture of the skull and pneumothorax. The skull lesion was treated and it was apparently doing well, but the boy died 26 hours after the accident from the thoracic condition. At the necropsy it was found that the right bronchus had been torn completely across immediately below the bifurcation of the trachea, the torn ends being separated about half an inch. There was no blood in the pleural cavity and the ribs, clavicles, and pleuræ were quite intact. Complete or even partial rupture of a bronchus is a very rare condition and when it does occur it is nearly always associated with, and due to, fracture of a rib or the sternum, the sharp edge of the broken bone being the direct cause of the rupture. In the case above mentioned, which Dr. May has described, all the ribs were intact and therefore this explanation is inadmissible. A possible explanation is that the chest was much compressed by the heavy wheel of the wagon, and then the pressure on the lung forcibly tore it away with the bronchus from the trachea. Mr. A. Marmaduke Sheild exhibited a specimen at a meeting of the Pathological Society of London on March 19th, 1889, showing complete rupture of the left bronchus. A man, 47 years old, was crushed between the pole of a van and a wall. In addition to other injuries to the chest the third and fourth ribs were broken and the left bronchus was torn completely through close to its junction with the trachea. In this case it is probable that the bronchus was torn by one of the broken ribs. It is curious that so little is to be found in the text-books relating to this rare though important lesion, and though specimens are to be seen in several museums very few histories are obtainable.

## EPIDEMIC CEREBRO-SPINAL FEVER.

AT the annual congress of the Incorporated Sanitary Association of Scotland, held at Aberdeen on Sept. 5th and 6th, a discussion on epidemic cerebro-spinal fever was opened by Dr. A. K. Chalmers, medical officer of health of Glasgow. Dr. R. M. Buchanan, bacteriologist to the Glasgow corporation, read a paper on the Examination of Cerebro-spinal Fever Contacts. He said that the meningococcus existed in the naso-pharynx of a large proportion (26·3 per cent.) of the healthy persons who had been in close contact with cases of the disease and that such persons, acting as carriers of the meningococcus, provided a very large source of potential infection. Dr. W. Leslie Mackenzie said that during the last six months 1611 cases had been reported to the Scottish Local Government Board and that 648 of these were in Glasgow. In Scotland during the week ended Sept. 7th there were eight deaths from this cause registered in Glasgow and one in Edinburgh. In Belfast during the same period there were five deaths registered as being due to this cause.

A TELEGRAM from the Governor of the Mauritius received at the Colonial Office on Sept. 6th states that for the week ended Sept. 5th there were 5 cases of plague and 4 deaths from the disease. As regards Hong-Kong, a telegram from the Governor received at the Colonial Office on Sept. 9th states that for the week ending Sept. 7th there were 5 cases of plague and 5 deaths from the disease. The department of public health of Queensland, in a bulletin dated August 3rd, states that no case of plague had occurred in Brisbane since July 26th. As regards the Cape Colony, the medical officer of health for the colony states that for the week ended August 17th no case of plague occurred in King William's Town or district.

THE tablet to the memory of the late Robert Barnes, M.D. Lond., will be unveiled in the Robert Barnes Laboratory of St. George's Hospital at 3.45 P.M. on Tuesday, Oct. 1st.

---

POLLUTION OF THE RIVER YEO.—At a meeting of the Yeovil rural district council held on Sept. 2nd a report of a series of analyses by the county analyst (Dr. H. J. Alford) of samples of water taken from the river Yeo below the outfall from the Yeovil corporation's sewage works was read. The report indicated that the stream was largely polluted with sewage and one sample contained arsenic in appreciable quantity. Arsenic is used in the preparation of the leather for the glove manufacturers. After some discussion the chairman said he did not see that the council could do anything at present in the matter and added "that the Yeovil town council were at their wits' end over the pollution of the river."

# NOTES UPON HEALTH RESORTS.

## SOME MEMORANDA ON THE ITALIAN LAKES.

By H. B. T. SYMONS, L.R.C.P. IREL., &c.

THE Lakes of Lombardy, with the adjacent and mainly Swiss Lake of Lugano, probably form the chief intermediate climatic station in Europe. An annual convergence of visitors arrives from north, south, east, and west, or, to speak more precisely, there are two such convergences—one at the end of winter and one at the end of summer. It is therefore not remarkable that, in view of the increase of travel, sojourners in this region should have multiplied 100 per cent. during the past decade. It is possible, then, to reach the lakes from the four cardinal points of the compass. To those arriving from Great Britain—they can do so in a day's travel—Lake Maggiore is first attained. The greater number of travellers go on, in the first case, to Como. The favourite months are May and September. In the spring the weather, when fine, is unsurpassable; when it is bad, and the spring is the most rainy season, it is extremely so. Viewed in this light the autumn, being drier, is preferable. Como for the climatologist presents no special indications as to locality. The centre of lakeland is called the basin of Tremezzina, where the lake bifurcates Y-like. Places on the right bank have more sun. At random I specify one on either side of the lake, and in different localities of the lake, which are well adapted to the health-seeker's wants. Steamers afford ready and pleasant means of connexion between places to be visited.

First in order of these the Villa Serbelloni may be mentioned. It crowns the promontory of Bellagio, the centre of the "Y." It is possibly the oldest inhabited place on the lake whose records have been preserved, and I incline to think that it is still the most beautiful. Once a stronghold and afterwards a villa, it is now a hotel not over-frequented, select, but expensive. The grounds are magnificent. There is an English colony at Cadenabbia opposite on the left shore of the lake. The second of these places is the Villa d'Este, Cernobbio, which was formerly the residence of Queen Caroline during her voluntary exile from England in the early part of the nineteenth century. This spacious house seemed to be for a long time infected with a gloomy dignity to which modern hotel methods have now succeeded.

The journey between Lake Como and Lake Lugano may be made by rail at either end or in the middle from Argegno on Como to Osteno. If the last route be taken a sharp ascent of some 2000 feet has to be climbed, through the Val d'Intelvi. At the head of the valley is Lanzo d'Intelvi, a growing resort suitable for early summer and autumn in the main. In view of its moderate elevation, 3000 feet, it has attractions to those desiring to pass the summer in the locality of the lakes and to avoid excessive altitude. The nights are fresh and its position on the mountain side looking northward to the Bernese Oberland is such as to render it cooler than many places of similar elevation.

A new funicular railway has just been opened from Lanzo to Osteno. The approach from Lugano will thus be much facilitated, which town one passes through in retracing the way to Lake Maggiore. On Lake Maggiore there are two places that have been praised for the climate to be found there, Pallanza and Locarno, both looking full south. The former has mostly German visitors and the chief hotel is arranged according to Teutonic ideas of comfort. A thick coppice of yew trees surrounds the building. Locarno presents surroundings of a markedly pleasing character. The contour of the hills at the lake-head makes for all that is delightful in alpine form and colour. To my mind the place is rather over-rated climatically. As a specimen of the statements which pass from book to book so much in matters of climate without challenge one finds those on Locarno apt to be specially fallacious; it is commonly credited with furnishing an all but tropical climate. Even such writers as Dr. I. Burney Yeo and Mr. R. Bagot, the well-known writer on Italian subjects, have been somehow misled on this point. "During the winter months," says Mr. Bagot in a recently published work on the lakes, "Locarno possesses a climate superior to the French or Italian Riviera; orange and lemon-trees abound, myrtle and many other semi-tropical shrubs and plants flourish throughout the winter." Locarno is an admirable place in the late autumn, for at this season the weather is sunny here if anywhere and society is to be found in this locality when Bellagio, Menaggio, Baveno, or Stresa present a deserted air. With the close of the autumn, however, the orange-tree, "that busy plant," as George Herbert has described it, is ingeniously housed, and the semi-tropical shrubs receive their winter clothing of heavy matting, the whilom semi-tropical garden disappears, and the illusions of perpetual summer flee away. A large colony of people practising the "Nature Cure" live here. Lake Orta, smaller and rather remotely placed, and Varese, near Como, should also be mentioned.

Briefly, the Italian lakes, amongst other considerations, may be described as the convalescent's paradise. The moderate elevation, the extreme equality of temperature, the freedom from dust and noise, the picturesque surroundings, and the pleasant variation of the scene easily obtained afford conditions admirable for mind and body undergoing restoration. Under this heading one may place the "after-cure" for bathers or Weir-Mitchell patients. Early *poitrinaires* are in some instances benefited, or at least it is believed that they may stay here without harm. Whether hotel life be appropriate in pulmonary tuberculosis is a question which must be left to the consideration of others.

# MEDICINE AND THE LAW.

### *An Illicit Still and an Absurd Story.*

THE explanation recently put forward in a prosecution for unlawfully manufacturing spirits and using an illicit still drew from the magistrate at Marlborough-street police court some trenchant observations upon the absurdity of wasting his time with stories that might amuse but could not deceive him. The defendant, a Russian butter and cheese maker, named Jacobovitch, had on his premises a still and about 40 gallons of wash in an active state of fermentation, and explained to the inland revenue officials who discovered them that the wash was a kind of sauce, and that the still was used for cheese-making by passing a hot pipe through the milk. Variants of this story were put forward at the police court and witnesses were called to swear that the defendant's only business consisted in manufacturing cheese or butter. As Mr. Denman observed: "There is no limit to what these people believe to be the gullibility of the magistrates before whom they come." As a matter of fact, in these important prosecutions, which not only defend the rights of the revenue but protect the public from being poisoned with unwholesome spirits, and in those others which seek to prevent the distribution of putrid or adulterated food, there is always some story easy to be invented if only a magistrate can be found to lend an ear to it. It will, for instance, have been observed that a large proportion of the retailers of foodstuffs, who from time to time are prosecuted for offering for sale articles of obviously human diet in an unfit condition, promptly discover that they have bought sacksful of tins of preserved milk or large quantities of putrid fish or meat in order to sell it for feeding pigs or for manuring the ground. These operations are extremely unlikely to be carried out in the manner that the defendant's story suggests, but presumably it satisfies his fighting spirit and he feels that he has not submitted to be fined or imprisoned without a struggle. Mr. Denman professed himself to be amused at the ingenuity of Jacobovitch (who on a previous occasion had been fined £25 for a like offence), but he fined him £125 nevertheless, with the alternative of four months' imprisonment. If the law were only concerned in "making the punishment fit the crime" the better course, and one which perhaps might have been adopted in an Oriental country, would have been to sentence him to imprisonment together with his still and his 40 gallons of wash until he produced a palatable condiment or a few pounds of either cheese or butter by the novel processes of manufacture of which he claimed to be the master.

### *Street Noises.*

A coal hawker and an oilman were recently summoned before Mr. Plowden at the Marylebone police court on account of the noise made by the former in shouting "coal" in a certain street at 11 A.M. and by the latter in calling attention to his wares by ringing a bell. The learned magistrate appears to have had little sympathy with the desire of the complainants, who were the police at a neighbouring section house, to sleep after their nights on duty, for he only imposed fines of 1*s*. Such noisy nuisances as those complained of are at least as disturbing to those who are awake and are doing their day's work quietly without annoying their neighbours as they are to persons who desire to rest, and it is to be regretted that in a city like London where a certain amount of noise is inevitable wholly unnecessary additions to it should not be more vigorously repressed than they are.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Sept. 12th, 1829.

### ADVICE FOR THE PREVENTION OF FEVER IN IRELAND.

*To the Editor of* THE LANCET.

SIR,—Observing at page 657 of THE LANCET, a few simple and excellent rules recommended at the London Fever Hospital to be adopted to prevent contagion, I take the liberty of enclosing you some rules of a similar nature with which I have lately met, issued a few months since from a fever hospital in Ireland. You will not only render a service in Ireland, where your journal circulates very widely, by republishing them, but you will both amuse and instruct many of your readers in this country, by the insight which this "advice" thus unpremeditatedly affords them, into the degraded state of the lower class of people of that country. We may readily judge what must be the state of health in those neighbourhoods in which it is necessary to advise the people "to scrape their floors with a *spade*, and sweep them every day." Houses without windows and chimneys, floors matted with dung, spades instead of brooms, straw beds, and foulness of all kinds, seem the common characteristics of that unfortunate country. Well might Dr. Stoker, in speaking of its poorer classes in his report, have said that "Their habitations were ruinous, and their apartments (into each of which numbers crowded, in order to lessen expense, by dividing the cost of rent and taxes) became so many laboratories of noxious vapours, sometimes more like the neglected cemetries of the dead, than habitations of the living."

I am, Sir, your obedient servant,

G. I.

London, Sept. 5.

"*Advice to prevent Fever.*

"Nisi utile est quod facimus, stulta est Gloria."—*Phædrus.*

No. 1.—Let your doors and windows be kept open in the day; if you have not a window in the back part of your house, make one; have them so hung as to be easily opened; have a chimney with a good draught, so as to encourage a free current of air through your house.

No. 2.—Remove dung and putrid matter of every kind, from before and behind your houses, as the vapour and smell proceeding from them, (called malaria,) have been found by physicians to generate infectious fever.

No. 3.—Scrape your floors with a spade, and sweep them every day; also the yards before and behind your houses as often as you can; keep your hair cut short, and comb it every day; wash your hands and face; keep your clothes, furniture, and utensils sweet and clean.

No. 4.—Don't go into any house where a person is sick, or has been ill of fever; don't attend the wake of any person who has died of fever; if you do you will be infected yourself, and will communicate fever to your family.

No. 5.—Don't let strolling beggars enter your houses, as they frequently carry infection from one house to another.

No. 6.—Whitewash your walls, inside and outside, with lime slacked in the house, and while it continues hot and bubbling; let this be done once a month while fever is prevalent.

No. 7.—If fever attacks your family, as soon as the calamity is removed by recovery, or by death, employ the above means as soon as possible; burn the straw of the bed; put all the clothes of the house in cold water, wring them out and wash them in hot water, soap, and pot-ashes; let every box, drawer, chest, &c., be emptied and washed, and let the floor under the patient's bed be strewed with lime fresh slacked and hot. Let no person upon recovery go into a neighbour's house, nor into any public place of worship, for fourteen days.

No. 8.—REMEMBER!!! that cleanliness and good air will improve your health and strength, will check disease, and UNDER GOD will preserve you from all the variety of wretchedness and misery occasioned by INFECTIOUS FEVER.

Valley House.

NOTE!—Heads of families are strongly recommended to have a printed copy of this advice pasted up in their houses, and to enforce a strict observance of its instructions.

The gentry are advised only to give employment to such persons as carefully attend to the rules therein contained.

A strict adherence to this plan constitutes the sole means for removing the principal cause which generates typhus fever in Ireland, viz. the fetid smell (called "malaria") exhaled from vegetable and other substances in a state of putrid fermentation.

It is reasonable to hope, that every other cause will be eradicated by comfortable clothing, wholesome food, and good lodgings, which comforts can only be obtained through the medium of constant employment given to the poor."

# Public Health and Poor Law.

## LOCAL GOVERNMENT BOARD.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*The Port of Manchester.*—Mr. W. F. Dearden reports that during 1906 powers were obtained for examining imported foodstuffs introduced into the country *viâ* this port, and he furnishes an instructive chart showing the value of food imports entering each of the principal ports compared with the value of total imports from abroad. This chart accentuates not only the enormous proportion of our total imports which is made up of foods but also the great importance of proper control of such imported foods. Powers for the inspection of food imports have been possessed by the Port of London since 1898, but Manchester (the youngest provincial port) has been the first to obtain such powers outside the metropolis. It is interesting to all those who study the problem of our dependence upon outside foodstuffs to learn that during 1905 the value of food introduced into this country through the 13 principal ports more particularly devoted to this trade amounted to £201,722,057 in relation to a sum of £484,320,251 which represents the value of imports of all kinds—i.e., nearly half the money spent by us in imports is for food. As regards the Port of Manchester the actual value of the food introduced *viâ* the Ship Canal has steadily increased from £2,919,825 in 1901 to £5,024,119 in 1905, and all this food is still apparently being admitted without any inspection in the port. The Bill embodying powers for inspection was not inscribed upon the statute book without considerable opposition as it was felt that to place restrictions upon a new and rising port would be undiplomatic as regards the progress of business. It was contended that if the powers in question were to be conferred they should be bestowed on all port sanitary authorities throughout the country. Although these powers have now been obtained as regards Manchester they have not as yet been actively enforced pending the passage through Parliament of general measures conferring similar powers upon all port sanitary authorities throughout the kingdom. We find here, in fact, a further illustration of the value of local Acts in promoting general legislation on the same lines.

*Dartford Rural District.*—Dr. Sylvester Richmond, as medical officer of health of a rural district in which fruit-growing abounds, finds himself face to face with the two difficult and annoying problems of the control of a low-class nomadic population visiting the district for short periods in the summer and with the conveyance and storage of manure. Everyone familiar with rural districts around London will sympathise with him in his troubles, more especially as he appears to have added to them, especially at Greenhithe, a growing smoke nuisance from cement burning. Apparently the fruit-picking cannot be carried out by the local population, partly because it is too small and partly because the wage which the inhabitants demand is too high to render the industry remunerative; hence this alien trouble. The main nuisance has occurred at Swanley Junction, but here Dr. Richmond has at last succeeded in procuring a sewer to drain the fruit-pickers' huts. The subject of infantile mortality in this district has been gone into very thoroughly by the medical officer of health during the past year, more especially as regards the eight years during which he has been in office. In this way he has been able to procure averages having a much higher value than the rates for one year would possess. The average infantile mortality for the eight years in question was 132 per 1000 births, the legitimate rate being 124 and the illegitimate 404; while one of the special tables constructed by Dr. Richmond shows that 19 per cent. of the deaths occur under the age of one week, 31 per cent. under one month, and one-half under three months, the remainder being fairly evenly distributed over the remaining months. Of the total deaths under one year of age 37·5 per cent. were due to wasting diseases and 23 per cent. to diarrhœal diseases; while of the total deaths under one month no less than 74·2 per cent. were due to wasting diseases. This group of wasting diseases may be divided into two sub-groups, premature birth and atrophy, and of those due to premature birth 60·5 per cent. of the whole occur immediately on birth or within the first week. Dr. Richmond thinks that the medical officer of health can do very little to check mortality under this head. As regards, however, the second sub-group—i.e., atrophy and like causes—there are many which occur in the first week which are probably due to pre-natal causes. These deaths diminish for the next three weeks but increase in the second and third months, and at this time the causes are post-natal and preventable—i.e., due to neglect, artificial feeding, and insanitary surroundings. By way of curtailing the death-roll under this head Dr. Richmond proposes the appointment of lady visitors who should visit and instruct the mothers as to the proper methods of feeding their children and who should report to the sanitary officials any defects in the sanitary condition of the houses. We much hope that this suggestion will be acted upon, and there is no reason why visitors of this description should be appointed in urban districts only. We should be glad, too, to see this subject of infantile mortality analysed as carefully in other rural districts as in the Dartford district, and it is gratifying to find a rural medical officer of health gratuitously going beyond the already very complicated tables which he is bound to fill up.

*County Borough of Bournemouth.*—Mr. P. W. G. Nunn, the medical officer of health of this important health resort, condemns in his current annual report the belief that pulmonary tuberculosis possesses the high degree of infectivity with which it is credited by some persons. His experience at Bournemouth during 36 years has not tended in this direction and in his view had the disease possessed this attribute the low death-rate attained by Bournemouth would not have been achieved. Certainly the evidence of Bournemouth, with its numerous institutions for pulmonary tuberculosis, should be of value, and we wish that Mr. Nunn had entered a little more into detail upon his subject. There is, however, much evidence from other places pointing to the conclusion that the presence of sanatoriums and hospitals for consumption exercises no prejudicial influence upon the death-rate from this disease; indeed, in the majority of such places such death-rate has steadily declined. The borough analyst, whose report is bound up with that of the medical officer of health, reports that one sample of milk contained no less than 35 grains of boric acid to the pint, a somewhat drastic dose to administer to invalids or children without their consent or knowledge. We are glad, therefore, to see that the town council has decided to take action in all cases where 40 grains to the gallon of boric acid and formalin to an amount exceeding one part in 40,000 are detected.

*Reigate Rural District.*—Provisional arrangements have apparently been made between the medical officer to the education committee of the Surrey county council and the local medical officers of health by means of which a closer supervision over the health of the scholars may be maintained than heretofore. The school teachers are now required to notify to the local medical officer of health whenever a child is absent from school owing to any infectious or contagious malady or when there is even a suspicion of such an occurrence. The medical officers of health are, too, expected to visit each school at least once a year and to examine into its sanitary conditions. The examinations made in this sense in 1906 by Dr. Arthur E. Porter seem to indicate that in several instances the local schools ought not to be used as such. We read of "sanitary conveniences badly situated," "no water-supply to urinal," "very poor cloakroom accommodation," "not a suitable building for a school," and "quite unfit for a school." If these statements are not out of proportion they should receive the immediate attention of the education authority.

*County Borough of Salford.*—Mr. C. H. Tattersall's current volume embodies a report by Dr. J. J. Butterworth, the deputy medical officer of health and assistant medical officer to the education committee, upon the medical inspection of schools. The routine practice appears to be to visit the schools regularly and to inspect the children rapidly. All those suffering from physical or mental defects are noted. If as a result of further examination of these selected children it is found that medical treatment is desirable, apart from some modification of school attendance, the parents are advised either to consult a private practitioner or to attend at hospital with the child. In addition to this method of determining defective children it is within the province of the school attendance officers to refer children to the medical inspector. The physical instruction sub-committee undertook in 1904 to have the measurements of boys taken in six elementary schools and some useful data, not in a form which can be conveniently epitomised, will be found in Mr. Tattersall's report. It may, however, be stated generally that the results as regards height were below the Edinburgh and Glasgow data, below the Anthropometric Committee average standard, and markedly below the public schools standard. Very similar observations obtain as regards weight. Apparently the Salford education authority supplies spectacles at a low and uniform price to children requiring them.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7980 births and 3785 deaths were registered during the week ending Sept. 7th. The annual rate of mortality in these towns, which had been equal to 11·5 and 11·8 per 1000 in the two previous weeks, further rose last week to 12·3 per 1000 During the first ten weeks of the current quarter the death-rate in these towns has averaged 12·0 per 1000, the rate in London during the same period being 11·9 per 1000. The lowest death-rates in the 76 towns last week were 3·1 in Wallasey, 5·4 in Walthamstow, 5·7 in East Ham, and 7·0 in Hornsey; the highest rates were 17·0 in Nottingham and in Liverpool, 17·2 in Tynemouth, 17·6 in Newcastle-on-Tyne, and 19·7 in Stockton-on-Tees. The 3785 deaths in the 76 towns last week exceeded by 168 the number in the previous week, and included 471 which were referred to the principal epidemic diseases, against 407, 432, and 437 in the three preceding weeks; of these, 229 resulted from diarrhœa, 80 from whooping-cough, 71 from measles, 39 from diphtheria, 34 from scarlet fever, and 18 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Willesden, Plymouth, South Shields, Huddersfield, Hornsey, Rochdale, or in six other of the 76 towns; the death-rates from these diseases, however, ranged upwards to 3·6 in Cardiff, 3·8 in Aston Manor and in Sheffield, 3·9 in Bootle, and 4·9 in Walsall. The fatal cases of diarrhœa, which had risen from 39 to 194 in the eight preceding weeks, further increased to 229 in the week under notice, and caused death-rates ranging upwards to 2·2 in Walsall, 2·5 in Rotherham, 2·9 in Sheffield, and 3·1 in Bootle. The deaths from whooping-cough, which had been 99 and 76 in the two previous weeks, rose again to 80 last week; the highest death-rates from this disease were 1·3 in Aston Manor and 1·4 in West Hartlepool. The fatal cases of measles, which had been 102, 84, and 73 in the three preceding weeks, further declined to 71 in the week under notice; the mortality from this disease was equal to 1·2 per 1000 in Blackburn, 1·4 in Merthyr Tydfil, 2·2 in Walsall, and 3·3 in Cardiff. The deaths from diphtheria slightly exceeded the number in the previous week, while those from scarlet fever and from "fever" showed a slight decline; the mortality from these diseases was not excessive in any of the 76 towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals and the London Fever Hospital on Sept. 7th was 3816, the numbers having risen successively in the 17 preceding weeks from 2658 to 3738; 587 new cases were admitted during the week, against 430, 440, and 557 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 97 and 129 in the two previous weeks, declined again to 116 in the week under notice, and were 17 below the number in the corresponding period of the five years 1902–06. The causes of 43, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 48 other of the 76 towns; there were six uncertified deaths in Liverpool, five in Birmingham, three in Salford and in Reading, and two each in Manchester, Bristol, Sheffield, South Shields, Gateshead, Preston, St. Helens, and Bootle.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 12·6, 12·8, and 13·7 per 1000 in the three preceding weeks, was 13·6 per 1000 in the week ending Sept. 7th, and exceeded by 1·3 per 1000 the rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·5 in Perth and 10·6 in Leith to 14·2 in Dundee and 14·8 in Glasgow. The 471 deaths in these towns were slightly fewer than the number in the preceding week, and included 58 which were referred to the principal epidemic diseases, against 65 and 62 in the two preceding weeks. These 58 deaths were equal to an annual rate of 1·7 per 1000, which exceeded by 0·2 per 1000 the mean rate during the same period from the principal epidemic diseases in the 76 large English towns; they included 22 which were referred to whooping-cough, 22 to diarrhœa, 11 to "fever," and one each to measles, to scarlet fever, and to diphtheria. The fatal cases of whooping-cough, which had been 22 and 19 in the two preceding weeks, rose again to 22 last week, and included ten in Glasgow, five in Edinburgh, and five in Aberdeen. The deaths from diarrhœa, which had been 21 and 15 in the two preceding weeks, increased again last week to 22, of which 15 occurred in Glasgow, five in Aberdeen, and two in Dundee. The fatal cases of "fever," which had been seven and 19 in the two preceding weeks, declined again to 11 last week, and included 10 in Glasgow and one in Edinburgh; of these eight were attributed to cerebro-spinal meningitis in Glasgow, and one in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 48, 53, and 51 in the three preceding weeks, rose to 57 in the week under notice, and exceeded by seven the number in the corresponding period of last year. The causes of 21, or 4·4 per cent., of the deaths in these eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 1·1 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 15·7 and 18·6 per 1000 in the two preceding weeks, further rose to 20·7 per 1000 in the week ending Sept. 7th. During the first ten weeks of the current quarter the death-rate has averaged 18·9 per 1000, the rates during the same period being only 11·9 in London and 12·3 in Edinburgh. The 155 deaths of Dublin residents registered during the week under notice were 16 in excess of the number in the previous week, and included 12 which were referred to the principal epidemic diseases, against 14 and 17 in the two preceding weeks; they included five from diarrhœa, three from measles, two from whooping-cough, one from scarlet fever, and one from "fever," but not any from small-pox or from diphtheria. These 12 deaths were equal to an annual rate of 1·6 per 1000, the death-rate from the principal epidemic diseases during the same period being 1·5 in London and 1·1 in Edinburgh. The fatal cases of diarrhœa, which had been six, four, and eight in the three preceding weeks, declined again last week to five, while the deaths from measles decreased to three, having been two and seven in the two previous weeks. The 155 deaths from all causes in Dublin last week included 29 of children under one year of age and 50 of persons aged upwards of 60 years, these numbers being respectively five and 19 in excess of the corresponding figures for the previous week. Four inquest cases and three deaths from violence were registered, and 61, or 39·4 per cent., of the deaths occurred in public institutions. The causes of seven, or 4·5 per cent., of the deaths in Dublin last week were not certified; in London all the deaths were duly certified, while in Edinburgh the proportion of uncertified deaths was 5·8 per cent. The 105 deaths in Belfast included five which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

## THE SERVICES.

### Royal Navy Medical Service.

The following appointments are notified:—Fleet-Surgeons: J. A. Keogh to the *President*, for three months' course at West London Hospital; E. Sutton to the *Kent*, on recommissioning; and O. W. Andrews to the *President*, additional, for International Congress of Hygiene and Demography at Berlin. Surgeons: S. S. H. Shannon to the *Arrogant*, on recommissioning; J. E. Johnston to the *Pembroke* for Royal Naval Barracks; F. E. Bolton to the *Kinsha*, R. Kennedy to the *Glory*, and E. Cox to Chatham Hospital; A. H. S. Richardson to the *Amphitrite*, and to the *Kent*, on recommissioning; and R. Thompson to the *Cambridge*.

### Royal Army Medical Corps.

Major Alfred L. Borradaile retires on retired pay (dated Sept. 7th, 1907). Lieutenant-Colonel W. L. Reade and Major A. C. Stone have been permitted to exchange appointments by the Army Council.

### Indian Medical Service.

The following Lieutenant Colonels retire from the service:—Charles Lethbridge Swaine (dated July 23rd, 1907), Nityananda Chatterjie (dated June 18th, 1907), Alexander Vass Anderson (dated July 19th, 1907), and Herbert Mackinlay Morris (dated May 14th, 1907).

### Imperial Yeomanry.

Scottish Horse: Surgeon-Lieutenant J. A. Taylor to be Surgeon-Captain (dated August 1st, 1907).

### Volunteer Corps.

*Royal Garrison Artillery (Volunteers):* 1st Forfarshire: Surgeon-Captain G. Halley to be Surgeon-Major (dated July 29th, 1907).

*Rifle:* 2nd Volunteer Battalion the Royal Warwickshire Regiment: Arthur James Arch (late Lieutenant, R.A.M.C.) to be Second Lieutenant (dated July 20th, 1907). 1st Volunteer Battalion the Duke of Cornwall's Light Infantry: Prosper James Liston to be Surgeon-Lieutenant (dated August 12th, 1907). 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry): Supernumerary Surgeon-Major E. Lee (Brigade-Surgeon Lieutenant-Colonel, Senior Medical Officer, Humber Volunteer Infantry Brigade), to be Surgeon Lieutenant-Colonel, remaining seconded (dated July 18th, 1903). 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment): Surgeon-Lieutenant H. W. Spaight resigns his commission (dated August 1st, 1907).

### Royal Army Medical Corps (Volunteers).

Eastern Command: Woolwich Companies: Lieutenant A. E. Jerman to be Captain (dated August 6th, 1907). London District: London Companies: Allan Chilcott Parsons to be Lieutenant (dated Sept. 1st, 1907). Argyll and Sutherland Bearer Company: Captain J. A. Boyd resigns his commission (dated August 12th, 1907). East Surrey Bearer Company: Captain (Surgeon-Major, Army Medical Reserve of Officers, Honorary Captain in the Army) E. W. St. V. Ryan resigns his commission (dated July 17th, 1907).

The Woolwich Companies, numbering 13 officers and 392 non-commissioned officers and men under the command of Lieutenant-Colonel C. H. Hartt, completed their 14 days' training at Netley on August 17th. They were encamped in a field in the rear of the hospital. On August 9th they were inspected by Surgeon-General R. H. Quill, Principal Medical Officer, Royal Victoria Hospital. Besides being engaged in field exercises 30 of the men were drafted each day into the wards of the hospital to learn the special duties connected with nursing.

### Deaths in the Services.

Lieutenant-Colonel Herbert Jekyl Dyson, I.M.S., in Calcutta, on Sept. 3rd. He obtained his medical qualifications in 1882, entered the service as surgeon in April, 1885, and was promoted to be lieutenant-colonel in April, 1905. He served with the Burmese Expedition in 1885–88 and received the medal with two clasps. He also held the position of civil surgeon at Jessore.

# Correspondence.

"Audi alteram partem."

## SHIPS' SURGEONS AND MEDICAL EQUIPMENT.

*To the Editors of* THE LANCET.

SIRS,—Having just performed a voyage as surgeon on a passenger boat trading from Australia to England and formed a few impressions as to the medical side of things and the provision made for sickness in the way of drugs, &c., I have thought I might set these down with some profit.

Before sailing I took the trouble to run down and see what drugs and instruments there were, and I found that things according to Board of Trade regulations were supplied and that departure from the strict letter of these was not encouraged. Instruments were well provided, but there was only one artery forceps among the whole outfit. I requisitioned for two or three more but found after sailing these were not got, on the ground that the Board of Trade regulations did not require more than one. There were about 170 souls on board and the voyage would take at least seven weeks. As a matter of fact, it took about eight weeks. It can be easily seen that in the admitted possibility of a serious accident involving the severance of several arteries one useful pair of forceps was but a poor stand-by to fall back on.

The choice of drugs was of a very peculiar character. There was no nux vomica, sulphate of soda, ammonium chloride, or any one of the infusions provided. Nor was there any adequate provision of gauze. Carbolic acid and a little perchloride solution was the only antiseptic provided, unless one would call boric acid such. There was no picric acid for burns.

Now all this was specially noticeable in view of the fact that as to catering for the feeding, as to comfort, and as to attendance upon the passengers the ship was exceedingly well found. Clearly there seemed an inability to recognise the necessity of so providing that the important duty of the surgeon should be efficiently carried out. His place in the scheme of things seems not yet definitely settled. He is apparently as yet but an accretion, an accident, and hence there is an inability to gauge the place in the scale that he and his duties hold. He himself is treated with courtesy and consideration and his representations are received with respect, but any definite action is avoided by an attitude of *non possumus*. The dispensary had no seat or bench, and it was only the courtesy and good sense of the commander that provided such after the voyage had begun. Now it would be unreasonable in the extreme to expect the comfort of a surgery or the completeness of provision of a hospital dispensary, but ought not a little more latitude to be allowed the doctor so as to give him every encouragement to perform his duties with pleasure and satisfaction to himself and his patients, who need just as much sympathy and care at sea as on shore?

It might be objected that really so very little sickness occurs on board that it would be foolish to go to any great expense and make elaborate provision for contingencies that could only arise on the rarest occasions. In answer to this let me give an inadequate list of what I had to deal with on the voyage: orchitis and epididymitis, an old fracture of metatarsal bone with severe strain and adhesions, a case of alcoholism, two axillary abscesses and one inguinal abscess, one case of chancre, two of cystitis, one of renal calculus, one case suggestive of renal calculus, obscure case in many respects; one of prostatic enlargement, two of varicella, one of pertussis, one of acute laryngitis with adenoids as an aggravation, very severe; two burns, several injuries of shins leading to ulcers, two cases of liver derangement with gastric complications, one phthisis pulmonalis, far advanced; several cases of lumbago, bronchial catarrh, and pharyngitis (three). Then there were sundry cases of catarrh, indigestion, and, of course, the large number of constipation cases we all expect among firemen and others. I submit this is a formidable list for a few weeks and I allow it is exceptional. But no chain is stronger than its weakest link, and on starting no one ever thought such a deal of sickness would occur. But pity the doctor who is called upon to meet the situation. Certainly nothing *very* serious resulted, but it might have in other circumstances. Some drugs were run out of on the voyage and I desired to get them replaced. But then I found that the company objected to any drugs being bought at any other ports than London and it was there down in their regulations for the guidance of the surgeon. But the captain got them all the same. But how is a man to get satisfactorily through his work, small and unimportant as it may be, if he is hampered by considerations such as these?

There is one more point I must draw attention to. Is it comportable with the dignity and efficiency of the work of the doctor that his dispensary should be next to a urinal and his cabin and the dispensary both be in a dark alleyway which it was impossible to keep clean or properly lighted? This alleyway constituted the one means of access for the crew to go to their quarters, for the stores to be carried backwards and forwards, and for the provisions to be conveyed to the crew and the steerage passengers, and for all and sundry to go to the bar. The traffic along it was thus very great and at times it was impassable. To crown all, its width was about four feet. Now surely it is time such a state of things was rectified. Of course we must keep in view that the doctor and his dispensary are accessible to every class of passenger at all times. But this applies just as much to saloon passengers as to others, and to invite such to pass through dirty and dark alleyways where they must brush against coal dust and step through slops is a blunder as well as a crime. Structurally, surely, in this day of marine architecture *in excelsis* there can be no insuperable difficulty in so placing cabin and dispensary so that they can be accessible in unexceptionable neighbourhoods and with approaches that can be kept both clean and dry?

Now, finally, is it not time that Board of Trade lists of drugs should be revised? When were these schedules last overhauled and corrected? It seems only right that they should be so drawn up as not to allow any latitude to such shipping companies as are not above playing fast and loose with them in their pursuit of a cheese-paring policy to make them really a means of hampering their medical officer. Of course, it is ever the effect, in these ingenious days, of any prescriptive legislation to have a restrictive result, because while it says what must be taken it is ever open to any one to say that nothing outside its provisions shall be taken. Both the character of drugs and their quantities ought to be more or less at the option and direction of the surgeon, inasmuch as every medical man has certain drugs with which he works and has confidence in. As a matter of fact these positions are more or less filled by recently qualified men who have not yet had occasion to have their special fancies and dependencies. But even such in their hospital work will have a choice dictated by experience. I have deliberately refrained from specifying the ship and company that have given me my text, because I am clear that the conditions here are more or less prevalent in all lines but the *very best*. As to them I have no experience, so cannot say. But I have frequently travelled on other lines, and can assert that the conditions described above are the best I have met with.

Trusting that you will consider this matter of sufficient importance to justify insertion,

I am, Sirs, yours faithfully,

Sydney, N.S. Wales. G. A. VAN SOMEREN, M.D. Edin.

## RHEUMATOID ARTHRITIS.

*To the Editors of* THE LANCET.

SIRS,—In common with others I read with much interest your annotation entitled "Rheumatoid Arthritis" which appeared in THE LANCET of Sept. 7th, p. 725. In considering the trend of the discussion on this subject at the recent annual meeting you draw attention to the almost complete absence of any allusion to the neural theory of the origin of the disease, and this notwithstanding the fact that some authorities like Spender, Latham, and others, still hold it to be the correct view. This silence on the subject of the neural theory as opposed to the infective would seem to carry with it the inference either that the neural theory has been thoroughly weighed, found wanting, and no longer merits serious attention, or that there is something inherently antagonistic in the two theories which precludes anything of the nature of a compromise between their respective advocates.

The truth of the matter, it seems to me, is that neither of the opposing claimants is in a position to disdain the aid afforded it by the other in unravelling the complex clinical phenomena grouped under that vague, ill-defined term rheumatoid arthritis. For while, on the one hand, it cannot be gainsaid that many of the clinical features strongly savour of an infective process as, for example, the acute mode of onset of some cases, the lymphatic and occasional splenic enlargement, still, it must not be forgotten that even in cases presenting the above features there may be in addition widespread muscular atrophy, increased deep reflexes, symmetrical involvement of joints, and trophic changes.

Now such features as these latter strongly point to some implication of the nerve centres, and in order to make the infective theory fit all the facts of the case we have to explain them by assuming them to be the result of changes in the central nervous system consequent upon absorption of toxins. We thus see that in many cases it is impossible to dissociate the two theories, for, as a matter of fact, the manifold clinical phenomena of rheumatoid arthritis are best explained by a blend of the two views; and some years ago I endeavoured to explain this complex disorder on the basis of a chronic spinal toxæmia. Another advantage to be obtained by blending and not opposing the two views is that it leads us to take a more comprehensive view of the disease as a whole, for otherwise there is a distinct danger of our falling into the pitfall, stumbled into by so many, of regarding rheumatoid arthritis as a disease of joints and joints only, whereas, I take it, it is a disease of joints plus certain collateral phenomena, as, for example, muscular atrophy, sensory, vaso-motor, and trophic changes—in other words, the very phenomena which give to rheumatoid arthritis its characteristic clinical facies as opposed to all other joint affections.

When brought in contact with a series of rheumatoid patients we note that while they all present joint swellings of the same character they each may show important differences when looked at as a whole—i.e., muscular atrophy, intense and widespread, may obtain in the one; in another muscular atrophy may be slight but it may be characterised by vaso-motor phenomena indistinguishable clinically from Raynaud's disease. In yet another the predominant accessory features may be sensory, as evidenced by severe neuralgic pains and in some long-standing cases definite anæsthesia, and there may be areas of glossy skin, pigmentation, and in very rare cases perforating ulcers. The importance of a thorough all-round examination in all cases of rheumatoid arthritis is obvious, for it is just to these collateral phenomena that we look for a clue as to the nature of the joint trouble. Furthermore, I believe that these accessory features will eventually aid us considerably in establishing a sound clinical classification of the various forms. We are all aware how urgent is the need for an adequate classification of the joint diseases grouped under the term rheumatoid arthritis, and here again we might take a lesson from the way in which the arthropathies are classified. The neurologists do not content themselves with a classification based upon the mere anatomical distribution of the lesions, monarticular, polyarticular, and so forth. Nay, on the other hand, they classify them as tabetic, syringomyelic, &c. In other words, they look at their cases as a whole, and I cannot help thinking that if we approached the study of our rheumatoid patients in the same methodical manner, we should be able to evolve some classification more scientific than one based on the mere anatomical distribution of the lesions.

In support of my contention that the neural theory is still worthy of attention I would draw attention to an article [1] by Dr. F. W. Mott and Mr. A. F. Tredgold. It is entitled "Some Observations on Primary Degeneration of the Motor Tract." In it are discussed, both from a clinical and a pathological point of view, two cases of amyotrophic lateral sclerosis, one of progressive muscular atrophy, and a case of chronic rheumatoid arthritis with muscular atrophy. The microscopical examination of the cord of the last-named revealed "in the spinal cord chronic atrophy with excessive pigmentation of anterior horn cells in cervical and lumbar enlargements, all groups affected (especially the mesial anterior). Decrease in fibrillary network. General slight interstitial overgrowth throughout the cord, with arteriocapillary fibrosis, but no tract degeneration, slight chronic changes in cells of posterior ganglia, atrophy of peripheral nerve fibres, atrophy and fatty degeneration of muscles." It is only fair to add that the authors, after commenting on the remarkable similarity of the microscopical appearances in the cord sections of all four cases, felt themselves unable to say "whether the change in the anterior horn cells is primary or secondary to the joint change, or to give any satisfactory explanation of this difference, we simply record the fact."

In conclusion, I should like to add my testimony to the very great value of counter-irritation of the spine in rheumatoid arthritis. I have had the opportunity of seeing one of Dr. W. J. Midelton's cases both before and after treatment by Dr. Latham's method had been adopted and I can truthfully state that the results more than justified his strenuous advocacy of the method. Apologising for the length of my communication,

I am, Sirs, yours faithfully,

Bath, Sept. 11th, 1907. R. Llewelyn Jones, M.B. Lond.

## BODILY POSTURE AND CARDIAC PHYSICAL SIGNS.

*To the Editors of* The Lancet.

Sirs,—The paper upon the above subject which appears in The Lancet of August 10th, p. 353, from the pen of Dr. William Gordon raises many interesting points and rightly accentuates the importance of examining the heart both in the horizontal and the vertical postures of the body. With most of Dr. Gordon's conclusions I fully agree, but would differ with him upon several small points. The effect of posture upon cardiac dulness is usually very marked, this dulness becoming narrower and higher in the recumbent than in the vertical postures. This change seems to be due to the fact that in the vertical posture the heart gravitates downwards and forwards, while in the horizontal posture it tends to gravitate away from the sternum. Dr. Gordon would urge that when this change is greater than usual and the patient shows little or no cardiac dulness when horizontal, it is a sign of some value of cancer, but although this is present in cancer it is also so in *any* case of rapid emaciation, more especially when this occurs in young people. This point has been worked out by several German observers.

It is quite beyond cavil that most systolic cardiac murmurs, especially those due to "functional disturbance," are more distinct or even only present when the patient is recumbent. I have amply confirmed Dr. Gordon's observation that the antero-posterior diameter of the chest is usually less in the recumbent than in the vertical postures but must demur when Dr. Gordon explains such increase in murmurs in the recumbent posture by saying that then "the stethoscope is relatively much nearer the pulmonary valves, relatively a good deal nearer the aortic valves, and relatively somewhat nearer the tricuspid and mitral valves." Dr. S. Cummings and I showed last year [1] that in the horizontal posture the heart tends to gravitate away from the sternum and Roentgen ray photographs taken from the side show then an increased space between the heart and the anterior chest wall. Hence one can argue that during auscultation of the heart with the patient recumbent the cardiac orifices are further away from the stethoscope than they are when such examination is conducted with the patient vertical. Moreover, it is evident to any observer that the normal heart sounds tend to be more audible when the individual examined is vertical than when he is recumbent; in fact, occasionally in thick-chested emphysematous people the heart may *only* be heard when the chest is vertical or, better still, leaning forward.

While quite admitting that the normal heart sounds are qualitatively changed by posture, the first being sharper and the second duller in the erect posture than in the horizontal, it seems to me that by far the most evident change in the sounds is that they are both more audible in the vertical than in the recumbent position. And this is only what one would expect if the contention is correct that in the erect posture the heart is nearer to the stethoscope. Why systolic murmurs should be more evident in the horizontal than in the upright posture is a different question and I agree with part of Dr. Gordon's explanation of the phenomenon when he argues that "it is due to the action of gravity on the intra-cardiac currents." Nevertheless, occasionally one meets with a case where, owing probably to thickened chest wall and emphysema, no heart sounds are audible during recumbency, and yet when such a patient leans forward the heart can be heard and any murmur present *then only* becomes audible. I would conclude by expressing my appreciation of the value of Dr. Gordon's communication and fully agree with him that "no description of the cardiac physical signs can be regarded as complete which does not include a statement of the position of the patient at the time of observation."

---

[1] Some Observations on Primary Degeneration of the Motor Tract, Brain, Part IV., 1902.

[1] Brit. Med. Jour., vol. ii., 1906, p. 1028.

I am, Sirs, yours faithfully,

Toronto, August 26th, 1907. R. D. Rudolf.

## THE DISCOVERER OF ETHER ANÆSTHESIA.

*To the Editors of* The Lancet.

Sirs,—It may interest your readers to know that at last active steps are being taken to honour the memory of Dr. C. W. Long of Jefferson, Georgia, the discoverer of ether anæsthesia. The Commonwealth of Georgia having passed the Act authorising his statue to be placed in the statuary hall, Washington, D.C., the necessary steps are being taken to have a suitable statue in position without any unnecessary delay. A marble statue 40 feet high will be erected to his memory in Jefferson. The unveiling ceremony is to be performed by the President, for the time being, of the Georgia Medical Association, and is fixed for April, 1909. A suitable memorial building bearing a bronze tablet will be erected at Athens, Georgia, on the site of Dr. Long's residence. The tablet will be inscribed with the date of Dr. Long's first operation and tell of his arduous and beneficent work in Athens. It is pleasant to think that all concerned in the discovery of anæsthesia were Britons: Humphry Davy, C. W. Long, and J. Y. Simpson. Dr. Long, as your readers doubtless know, was of Irish descent, his grandfather having emigrated from Letterkenny, Co. Donegal. I am, Sirs, yours faithfully,

Cavendish-row, Dublin, Sept. 7th, 1907. George Foy.

## PICROTOXIN AS A PREVENTIVE OF POST-CHLOROFORM SICKNESS.

*To the Editors of* The Lancet.

Sirs,—The administration of an anæsthetic is sometimes followed by sickness of so persistent and depressing a character that the patient suffers more from the effects of the anæsthetic than from the operation itself, while after major operations the subsequent vomiting may still further weaken the patient and increase the gravity of his condition. This is especially the case in abdominal operations where, in addition, the violent muscular contractions throw a severe strain on the stitches which close the wound. Any method of treatment, therefore, which prevents or even diminishes sickness is of some importance and in this short letter I wish to draw attention to the value of picrotoxin in this connexion.

The great majority of my operations are performed under chloroform or C.E. mixture, consequently my observations have been limited almost entirely to the action of the alkaloid after the use of these narcotics. To obtain the full effect of picrotoxin in the prevention of post-chloroform sickness it must be administered as soon as possible after the anæsthetic has been withdrawn and this circumstance makes it somewhat difficult to determine its true value, because many patients are never sick after an anæsthetic and as these cannot be recognised beforehand the drug is necessarily given to such as well as to those who do suffer from this form of sickness. However, by comparing a series of cases in which it has not been given with a series in which it has a marked difference can be noticed. This difference is specially emphasised in those cases in which, an anæsthetic having been administered several times, the only occasion violent vomiting was absent was when picrotoxin had been given. I have had several patients in the latter class who suffered from severe vomiting for many hours after anæsthesia, and in whom at some subsequent operation, when picrotoxin had been injected, sickness was either absent or lasted only a few minutes. I employ for the purpose a 0·2 per cent. solution of the alkaloid in sterilised water. In adults 20 minims of this are injected into the subcutaneous tissues as soon as possible after the withdrawal of the anæsthetic and certainly at the very latest before the patient leaves the table. The dose for children varies with the age, five minims being sufficient for a child four years old. The introduction of this alkaloid is not an absolute specific against post-chloroform vomiting, but undoubtedly the great majority of patients are entirely free from sickness after its use. If, as rarely happens, sickness should appear and last as long as ten minutes, a second injection, half the quantity of the first, is introduced, and in not a single case has this failed to produce the desired effect.

Occasionally patients are sick before they leave the operating table even after an injection, but in these the drug has not had time to exert its influence. By the time they are placed in bed vomiting has ceased. So firmly am I convinced of the value of picrotoxin in this class of sickness that it is now administered as a routine to my chloroform cases. I am, Sirs, yours faithfully,

Glasgow, August 26th, 1907. Peter Paterson.

## BUTTERMILK IN ENTERIC DISEASE.

*To the Editors of* The Lancet.

Sirs,—Major K. B. Barnett, R.A.M.C., in his letter in your issue of Sept. 7th on the subject of buttermilk in the treatment of enteric trouble, and especially in the diarrhœa of young children, commences his prescription with the formula, "Fresh buttermilk is slowly boiled," and so on. This rather suggests the problem offered by Mrs. Glasse's preamble to her well-known recipe for jugged hare, "First catch your hare." I fancy that most people who have not the felicity of living in Ireland, where buttermilk is a drug, or in the Argentine, where it may also be readily available, will want to know how or where they are to obtain "fresh buttermilk." Of course, buttermilk can be obtained from any dairy where butter is made; but, irrespective of other difficulties and disadvantages in doing so, by the time it got into the hands of those who wanted to use it, it might be anything but "fresh" and be likely to excite the trouble it was intended to allay. Moreover, buttermilk has the objection that, to perpetrate a Hibernianism, it is not buttermilk at all. For it is not milk and it contains practically no butter. So far as it can be called milk at all it is milk without its butterfat, of which it has been deprived in the process of churning. This is a serious disadvantage, as butterfat is not only the most valuable constituent of milk from an economic point of view but also on nutritive and digestive grounds, especially for young children.

If any of your readers who are interested in the subject on which Major Barnett writes will communicate with the Severn Valley Dairy Products Company at Stonehouse, Gloucestershire, they may obtain a sample of an article which I venture to think they will find much more suitable for the purpose of infant feeding under the conditions referred to by Major Barnett, as well as in the treatment of enteric fever and diarrhœa generally, than buttermilk. It is called "Casona cream" and is really a liquid form of cheese, specially selected and prepared for the purpose, which contains not only all the casein of milk in a most digestible form but also all the butterfat. Indeed, it can be prepared with an extra proportion of butterfat if desired. The only constituent of milk of which it is almost wholly deprived is the milk sugar. But this is so easily supplied in other ways that its omission is of no practical importance.

I am, Sirs, yours faithfully,

Gloucester, Sept. 8th, 1907. Francis T. Bond, M.D. Lond.

## ETHER INHALATION IN PULMONARY TUBERCULOSIS.

*To the Editors of* The Lancet.

Sirs,—To those interested in the treatment of phthisis I would submit for consideration the feasibility of attempting to arrest the disease by subjecting the patient to a course of ether anæsthesia. For instance, let the patient be put as fully as safety will permit under the anæsthetic for half-an-hour for three consecutive days, after which at intervals of two or three days let the process be repeated. If the theory be sound, within a fortnight unquestionable evidence should be found of improvement. Of course, it would be necessary to administer the anæsthetic with the utmost care, bearing in mind the nature of the disease. Abdominal section has frequently been credited with temporary arrest of tuberculosis of that cavity. May not ether be the chief factor in the temporary arrest? I am, Sirs, yours faithfully,

Sept. 5th, 1907. ROBT. HUGH HODGSON.

## THE SEASONS AND MENTAL DISORDERS.

*To the Editors of* THE LANCET.

SIRS,—The incidence of mental disorders does not correspond in point of time with recorded admissions into asylums, especially private asylums. It is true that the summer months, as indicated by Dr. J. Adam, bring special anxieties and maximum work, for suicides are most common in July and least common in November; but the inception of these disorders must be referred to the spring months, as I have shown in the Morison lectures of this year. It is undoubtedly in the study of the prodromal period and the onset of insanity that modern methods of treatment must find their bases and most hopeful development.

I am, Sirs, yours faithfully,

Perth, Sept. 7th, 1907. A. R. URQUHART.

## TUBERCULOSIS IN SPAIN.

*To the Editors of* THE LANCET.

SIRS,—I am informed that after a fatal case of bacillary phthisis it is the national custom in Spain to disinfect and redecorate the room in which the fatal case occurred. Can you, or any reader of THE LANCET, inform me if this is a fact? I am, Sirs, yours faithfully,

Cornwall, Sept. 2nd, 1907. C. E. ABBOTT, M.R.C.S. Eng.

*** It is a fact that tuberculosis is regarded in Spain as very infectious. It is difficult to let a house or rooms in which a patient has died from this disease. Moreover, the furniture is generally destroyed after the death.—ED. L.

## THE GUILD OF ST. LUKE.

*To the Editors of* THE LANCET.

SIRS,—May I draw attention to the advertisement appearing in the present issue of THE LANCET respecting the annual festival service of the Guild of St. Luke to be held at St. Paul's Cathedral on Oct. 22nd and request that those who desire to attend will communicate with me as soon as possible; as we are expecting a large attendance from the City companies and others we are anxious to allot space as soon as possible. I am, Sirs, yours faithfully,

CLAUDE ST AUBYN-FARRER, Registrar.

7, Westbourne Park-road, London, W., Sept. 9th, 1907.

## TEA SHOPS AND DUST.

*To the Editors of* THE LANCET.

SIRS,—May I draw your attention to the practice that seems to me insanitary and otherwise objectionable of sweeping the floors of tea shops while customers are eating and drinking. I admit it is not done during the busiest time, but I have just been suffering from it in one such shop at 2.40 to-day. A word of condemnation in your columns would go far to suppress this nuisance.

I am, Sirs, yours faithfully,

August 22nd, 1907. ACE.

## THE ROYAL SOCIETY OF MEDICINE.

*To the Editors of* THE LANCET.

SIRS,—The usual annual issue by the editors of the Medical Directory of slips for correction will perhaps place others of your readers, as it has myself, in a little difficulty as to how they should describe themselves in connexion with the Royal Society of Medicine. I believe that a Fellow of the late Royal Medical and Chirurgical Society *ipso facto* becomes a Fellow of the new Royal Society, but how is my partner to replace his "Fell. Obst. Soc.; Mem. Clin. and Path. Socs."? and how is one who previously belonged only to the Clinical Society to write himself down?

I am, Sirs, yours faithfully,

Sept. 9th, 1907. PUZZLED.

# THE PUBLIC AND PRIVATE SLAUGHTER-HOUSES OF DUBLIN.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

## PART I.

### *The Public Abattoir.*

THE position of Dublin in regard to its slaughter-houses, public and private, is peculiar and somewhat perilous. Under existing conditions there can be no serious guarantee that the meat is properly inspected before it is sold for human food. On the other hand, the complications that have arisen are such that it is not easy to see how matters are to be arranged in a satisfactory manner without occasioning a good deal of friction and opposition. To put the case briefly, there were many private slaughter-houses in existence when the Dublin Improvement Act of 1851 became law. Since that date licences for slaughter-houses have been frequently granted, although they were accompanied with the stipulation that on the establishment of a public abattoir these private slaughter-houses should be given up. Ultimately a public abattoir was built, but it was placed on the county side of a road which divided the county from the city of Dublin. Thereupon the butchers contended that as the abattoir was not within the city they could not be made to go there and need not give up the temporary licences that had been granted to them on the conditions explained above. Either the butchers were right in law or the authorities supine in the matter, for the butchers were not forced to close their private slaughter-houses. In 1890, however, another Dublin Improvement Act was passed and then the boundaries of the city were extended, so that now the public abattoir is within its jurisdiction. In these circumstances it was naturally thought that the private slaughter-house licences would, as originally intended, come to an end. These, however, are technical matters. They do not come within the scope of popular, political, or theological controversy, and the great mass of the people at Dublin are not taught to study such purely practical and scientific problems. Therefore the handful of butchers who have a personal interest in the question are often able to act as if there were no other interests than their own to consider, because public opinion is too ignorant or too indifferent to exercise any check. Thus interested parties were able to bring influence to bear, so that the corporation of Dublin during the passing of the Act agreed to regard as permanent the temporary licences which it had granted. Instead of coming to an end automatically when the boundaries of the city were extended and included the public abattoir it was now stipulated that these licences could only be extinguished by purchase. Yet it cannot be said that these butchers had a vested interest since the licences were only given as temporary licences. It was known from the first that the butchers would be called upon to remove their slaughtering business to a public abattoir; nevertheless, the ratepayers are now to be called upon to give them compensation. But this is not all, for even if the money is forthcoming another difficulty arises. The Act insists that only one person can receive compensation in regard to the closing of a private slaughter-house and it is often a matter of great perplexity to determine who that one person should be. Thus it is that since the passing of the Act in 1890 only 18 private slaughter-houses have been closed, and, including some situated in three townships recently annexed to the city, there still remain in Dublin no less than 62 private slaughter-houses.

That it is necessary to do away with the private slaughter-houses can scarcely be questioned; it can only be urged that their abolition should be deferred till a very much better public abattoir is built than that which now exists. The situation is described by Surgeon-Colonel D. Edgar Flinn, medical inspector of the Local Government Board of Ireland, in his official report for 1906. He there states that about 70 butchers avail themselves of the public abattoir, killing there from 700 to 800 animals weekly. The average number of cattle slaughtered weekly is about 200, of sheep 450, of pigs 50, and of calves 6. On the other hand, the killing in the private slaughter-houses is approximately estimated at cattle 380, sheep 1671, pigs 739, and calves 20. Thus only about a quarter of the slaughtering takes place at the public abattoir; by far the greater part of the Dublin meat comes from private slaughter-houses. Many of these private slaughter-houses are, the official report states, "in most unsuitable and thickly populated localities." The report adds that :—

> A special department is now formed under the efficient charge of Mr. Watson, M.R.C.V.S , for the purposes of meat, fish, and food inspection generally, but it is obvious that he can never adequately control the meat-supply of the city until the private slaughter-houses are abolished and the meat killed under his supervision in the abattoir. The Dairy Inspection Department has also, as mentioned before, been placed under his supervision as well as the inspection of slaughter-houses. The whole question, not only of meat but of food inspection generally, is a wide and vitally important one, and requires close and unremitting attention on the part of the public health committee.
>
> Slaughter-houses situated in such crowded localities as Moore-street, Townsend-street, Chatham-street, Westland-row, Thomas-street, Francis-street, Dorset-street are a positive nuisance to the residents in these districts.

Such is the historic aspect of the subject; and having ascertained this much I proceeded to visit the public abattoir. It is situated in the direction of Phœnix Park, just opposite, and conveniently near, the large cattle-market. If the butchers who buy their cattle there took them merely across the road to the public slaughter-house it would save them much time and trouble. But the majority prefer to drive the animals through the streets of Dublin to their private slaughter-houses. This, of course, is bad. The animals by their droppings add to the difficulty of keeping the streets clean. The barking of dogs, the shouting of men, and the lowing of the cattle add to the street noises. These animals not only impede the traffic but by reason of the blows and dog-bites which they receive and the panic into which they are thrown the disturbance caused by their journey to the Dublin cattle market is aggravated. At the slaughter-house the cattle would not only be spared the alarm of being driven through strange streets amid terrifying tramways and motor-cars, but there are adjacent fields where they could rest and graze for a few days before being killed. Also (and perhaps these form the best constructed part of the Dublin abattoir) there are the lairs or stabling attached where animals can rest and recover from the effects of travelling. The surrounding fields belong to the city of Dublin and are kept at present for grazing purposes but also in view of a probable enlargement of the slaughter-house. The sheep and cattle lairs consist of a sort of verandah with corrugated roofs, with concrete and fluted flooring, so that the liquid manure easily drains away. But there are some wooden planks at the edge of the flooring that should be removed, as they naturally absorb much of the foul moisture.

Taken altogether, I must confess that I was much disappointed with the public abattoir. It cannot for a moment be compared with any good model slaughter-house of the continent. The one excuse is that it was built in 1882; that is, before the modern principles had been generally accepted. The unpretending entrance, the very simple office for the management, the absence of uniforms, of smartness, and of that appearance of order, discipline, and dignity which conveys the impression of the majesty of government, at once proclaimed the fact that in the building and organising of its public abattoir the city of Dublin had utterly failed to understand the importance of its mission. A public slaughter-house should be an elegant edifice, kept so bright and clean and tidily regulated in every part as to constitute a demonstration of the power of science to civilise even the most brutal of occupations. Those who built the Dublin slaughter-house had evidently no knowledge of what constitutes a model modern abattoir. Thus on entering the first steps are taken on square pavement stones that go up to the doors of the slaughter sheds. Here blood and manure flow upon these stones. Yet they are not cemented, so that the subsoil is befouled. Now close at hand there is a terrace of new dwelling-houses and under them subsoil water is likely to contain some of the blood and manure from the slaughter-house. One of the great grievances against private slaughter-houses is that they contaminate the subsoil in towns, and here is a public abattoir doing the same.

To the right on entering there is a lofty hall sometimes called the meat market. Carcasses should be brought to this hall and hung so as to cool. Under the same roof there is a cold storage where for 1*s.* 6*d.* for the first day and 1*s.* for the following days a butcher may hang the meat which he cannot dispose of rapidly. The "omnibus" rails, the patent scales, the lofty, well aired, shady and cool character of this central compartment, are certainly preferable to, and more commodious than, anything to be found in a private slaughter-house. No individual butcher could afford to build anything like it for his own private use. But I have seen in the town one or two private slaughter-sheds that were, if anything, better than those of the public abattoir. To begin with, the slaughter or killing rooms at the public abattoir have exactly the same disadvantage as those in the town—namely, they are private. Certainly they can be more readily inspected, but only by reason of their construction and because they are nearer to each other. In other words, there is no slaughter-hall but there are several small compartments let out to various butchers. Indeed, butchers complained to me that these slaughter-rooms are let out to the highest bidder, thus giving special advantage to the wealthiest butchers. On the other hand, on questioning some of the town officials, I was assured that this was not the case for all the slaughter-rooms. Some were always available for the smaller butchers who would only use them for a short time. Obviously, however, it is easier to find room in a large slaughter-hall than when the same space is divided up into compartments. More important, however, than this consideration of the convenience of the butchers is the public health point of view. Obviously it is easier to watch over what is done in a large hall than in small compartments, and the latter are not so easily cleansed or ventilated. Therefore the Dublin abattoir is behind the times because it still tolerates compartments.

The slaughter rooms or compartments are also in themselves defective. The walls very properly are of glazed bricks up to a certain height but somehow the splashings go above this, striking and sticking upon the porous part of the wall. In one instance some offal must have been thrown up purposely for large pieces were adhering to the walls at a height of ten feet or more. It suggested that pieces of fat and offal had been used as missiles in a free fight. Such disorder would, in Germany, be absolutely incomprehensible; it would drive the officials to distraction. To treat Government property with such scant respect would shock the German mind more than words can express and it is necessary to remember that it is to Germany we must look for the best example in regard to public abattoirs. All splashing above the glazed part or dado cannot be satisfactorily cleansed away and its occurrence should be rendered impossible. But worse than this, because so easy to avoid and yet so abominable in itself, were the horrible wooden tables riveted to the walls on which the intestines are laid so that the fat may be removed therefrom to make butter substitutes. Between these tables and the wall there is a space from half to an entire inch wide in which fat, offal, blood, dust, and dirt cake and remain for days, weeks, perhaps months. For such work no wood should be used. In any case, if there be wooden tables they should stand on their own four legs and be removeable from the wall so that they can be cleaned on all four sides and that the walls can also be cleaned. There is evidently no sanitary police force here.

Immediately behind each of these slaughter-rooms or compartments there is a small stable or lair where animals are kept for a short time before they are killed. These small stables are very dark; they are reeking with manure, and it would be no easy matter to clean them thoroughly. The manure oozes out of them and runs on to the uncemented pavement opposite a second row of slaughter-sheds or rooms. These have also got similar stables behind them. The carcasses from the second row of slaughter-rooms should at once be removed to the large hall where the meat is intended to hang and to cool. This removal of carcasses can be easily effected from the first, but not so easily from the second, row of slaughter-rooms. Consequently a good deal of the meat is simply hung up in the open outside the second row of slaughter-rooms. The carcasses are then exposed to the effluvia from the stables of the front row which face them and of the second row behind them and also to the dust and dirt caused by the traffic; to the rain or sunshine; in fact, to multiple influences likely to compromise the quality and the cleanliness of the meat. This ought not to be; the carcasses should at once be taken to the cooling hall built for their reception; but some butchers assured me that as they could not do this easily they did not do it at all, forgetting that in such matters there should be no option allowed. It is not a question of the butchers' convenience but of the proper preservation and preparation of meat.

There are but few pigs killed at the Dublin abattoir, as the figures given above show, but the place where they are killed is much superior to that provided for horned cattle and can easily be kept clean. With all its defects the public abattoir affords not only this but several other advantages. The slaughter-sheds, with all their faults, are better than many of the private slaughter-houses. There is better prospect that the meat will be properly inspected. Then there is a condemned meat department, so that what is unwholesome is promptly separated from what is fit to eat. The site also on which the public abattoir stands is on an elevation well exposed to the purifying action of all the four winds. The establishment could be easily improved and better discipline and greater cleanliness enforced. Though historic truth, and judging after seeing many model slaughter-houses on the continent, compels me to criticise and to find fault with the Dublin public abattoir, it nevertheless remains superior to most of the private slaughter-houses. The latter undoubtedly must be swept away, but it will be necessary at the same time to effect very great improvements in the public abattoirs that are to replace them. It now remains for me to describe the condition of some of the private slaughter-houses of Dublin.

*(To be continued.)*

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Modern Surgery.*

A GARDEN party was given at the Ashton-under-Lyne District Infirmary on Saturday last to mark the completion of improvements and extensions to the institution. Mr. William Thorburn, one of the surgeons to the Manchester Royal Infirmary, was amongst the guests and made some interesting remarks on the progress that had taken place in surgery even during the period of his connexion with the infirmary. 25 years ago the number of operations performed in a given time by one surgeon was 56, while now the number performed in the same time was 205. The deaths out of the 56 cases were 12; the deaths to-day out of the 205 cases were still 12. This is a striking reduction in the mortality after operation. He went on to speak of the still more striking advance in the surgical treatment of disease, particularly of the internal organs. 25 years ago five operations, which to-day would be considered slight and which were more or less tentative, were performed in six months. Of the five cases two died, which would give a mortality of 40 per cent. To-day, in the same period, 73 such operations were performed, with a total of six deaths. Then, as regards the saving of limbs, among the comparatively small number of operations 25 years ago there were 16 cases of amputation, of which eight died; while at the present day, in the far larger number of operations, they had only eight amputations and no deaths. "Both the periods he had selected were since the introduction of anæsthetics and antiseptics and they simply represented the gradual outcome of a steady and persistent study of disease, the nature of disease, the means of recognising disease, the precise localisation of disease, and the organisation of the staff which has to deal with that disease in a great hospital. If there was one point more outstanding than another it was that in these 25 years they had trained everybody, every nurse, every charwoman who had to deal with the ward, to do their duty in the most thorough way, and to eliminate little sources of error which formerly used to crop up." Though Lord Lister's name is not mentioned in this passage, for his investigations have so much influenced surgical views and their results have been so dominant in shaping surgical methods, and have become so much an unquestioned and integral part of surgical science that the originator is almost liable to be forgotten, yet it bears testimony to the debt that surgery and indeed the whole family of man owe to the patient and in those days the difficult labours of one man. The stimulus given by the work and example of Lord Lister has had much to do with the infinite pains and watchful care that characterise the surgery of to-day.

### *The Sale of Poisons.*

The careless way in which the sale of poisons is sometimes carried on leads from time to time to fatal results. An inquest was held at Rochdale on Sept. 7th on the body of a man who died from drinking ammonia from an unlabelled bottle. The coroner said that it was a dangerous thing to sell poison in this way and "he should report the matter to see if a stop could not be put to the indiscriminate sale of poisons." This is really an urgent matter, for though it may be said that the man owed his death to his own folly, it is no less a fact that many people require protection from the consequences of such folly. The verdict was the ordinary one—"Accidental death."

### *Drunken Jurymen.*

An inquest was held last night at Bury on the body of a man who was hurt on a railway and died the next day, and the verdict was "Accidental death." The peculiarity of this inquest was, however, that the coroner is reported "to have tolerated the conduct of two of the jurymen but reprimanded them." They insisted on asking questions which the coroner, Mr. S. F. Butcher, said had nothing to do with the case. Eventually the interruptions led him to tell the jury that "If any juryman has had too much drink he will be wise to hold his tongue, because if he does not he will be fined." The first part of this utterance is of wide application, even where there is no fear of a fine. The coroner's officer said that the two men were sober at noon when he warned them to attend.

### *Fines for Adulteration.*

Southport has long been famous for its shrimps and is sometimes scarcely able to supply the demand for potted shrimps without some outside help. Yesterday a local fish-dealer was fined 20*s.* and costs for selling potted shrimps containing an excess of boric acid. It was stated by the prosecution that the shrimps had 107·6 grains of acid to the pound, while the Commission that had inquired into the matter only allowed 35 grains to the pound. Another Southport tradesman was fined £2 yesterday. In this case it was for selling as butter a substance containing 90 per cent. of margarine.

Sept. 10th.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

### *Opening of the Medical Session.*

THE medical session will be opened by an informal "at home," to be held in the Medical School on the afternoon of Oct. 1st, when Major Ronald Ross, Professor of Tropical Medicine in the University of Liverpool, will present the prizes. Leeds is thus departing on this occasion from the custom of having an opening address. In the evening there will be held as usual the annual dinner of the medical profession of Leeds and district, when, in addition to Major Ross, there will be numbered among the guests the Lord Mayor of Leeds, Lord Airedale, and Professor Miall. Lord Airedale's interest in all that pertains to the welfare of the University is well known. He was one of the first of its honorary graduates, receiving at the inauguration ceremony the degree of D.Sc. at the hands of Lord Ripon.

### *Leeds Sewage Disposal.*

At a meeting of the Leeds city council held on Sept. 4th the following motion was carried without discussion:—

> That the council promote a Bill in the next session of Parliament to obtain compulsory powers of purchase of a portion of the Temple-newsam estate, not exceeding 600 acres, for the purposes of sewage disposal and to obtain such other powers as may be necessary to enable the council to carry out the scheme for disposal of the sewage of the city which has already been sanctioned by the council.

It will be remembered that at the recent assizes an order on the subject was made by Mr. Justice Grantham and this action on the part of the council is in harmony with the terms of the order.

### *The Supply of Water to Charitable Institutions.*

A deputation, consisting of Mr. Charles Lupton and other members of the infirmary board, came before the corporation with respect to a proposal which had been made that the charge for water supplied to the infirmary should be increased from 3*d.* to 6*d.* per 1000 gallons. The proposal was a general one and it was intended to apply to all the charities and educational institutions of the city, but Mr. Lupton pointed out that the work of the infirmary was carried on without any support from the rates, that last year the expenditure exceeded the income by £4000, and that the infirmary was doing a great work which otherwise would have to be undertaken by the municipality. In his opinion the corporation should not expect to make a profit from the infirmary on the water-supply. He supported the request of the infirmary by a reference to other cities, and mentioned that in one of the largest cities in the empire a similar hospital to the General Infirmary not only got all its water free of charge but was also in receipt of a subscription from the municipality. At present the amount paid by the infirmary was £356 per annum and he expressed the hope that the council would see its way to exempt the infirmary from the operation of the proposed increase of rate. Mr. Lupton rightly enlarged on the difference which should exist in the treatment of a rate-supported or rate-aided institution and one supported by voluntary contributions. To increase the rates in the former class is, as he said, in a measure to take money out of one pocket and put it into another.

### *Nursing at the General Infirmary.*

The maintenance of a high standard of efficiency in the nursing at hospitals and infirmaries is, as one might expect, a source of great expense, and any increase in the number of the staff should be carefully considered before it is carried into effect. Some months ago a committee of the board, consisting of laymen and members of the honorary staff, was appointed to consider the nursing arrangements and to report to the board. A good many meetings were held and information was obtained from most of the larger metropolitan and provincial hospitals. It may be pointed out that the General Infirmary at Leeds undertakes, as its name implies, all kinds of work, and that there are special departments for diseases of women, special medical and surgical wards for children, special departments for ophthalmic and aural cases, and a very large out-patient and casualty department. The number of in-patients last year was 7052 and the average number in the infirmary at one time was 365. The number of patients treated at the Robert Arthington and Ida semi-convalescent homes was 1247. At the time when the committee of inquiry was appointed the staff consisted of the lady superintendent and her assistant, with a nursing staff of 101, which included 16 nursing sisters or charge nurses. Each of the nine large wards, which accommodate 28 or 32 patients, is in charge of a sister with a varying number of nurses under her. Six of the wards are in groups of two and each group of two is under the charge of a sister in the same way. The remaining four sisters are in charge of the casualty and out-patient department, the theatres, the supervision of the night nursing and the two semi-convalescent hospitals, and each of these has a varying number of nurses under her. The committee felt that a case was made out for an increase in the number of the nurses and special attention was given to the conditions of the nursing during the night and to the question of the occasional employment of extra nurses at times of stress from some of the various nursing institutions in the city. It was felt by the committee that the demand for these extra nurses, mainly required when it is necessary to have the services of one or more nurses entirely devoted to one patient, was of so fluctuating a character that it would be unwise to make any attempt to meet this by an increase in the staff, and in future, as in the past, outside nurses will from time to time be engaged. The night nursing has been under the immediate supervision of the night sister and her assistant. In each of the nine large wards and in each group of the smaller wards, as above explained, there is one night nurse but one of the heavier wards is provided with two. There are also three nurses who are moved about by the night sister to meet the varying periods of activity in the different wards, and the making of beds and the other routine duties of the wards are arranged in harmony with this. There was much discussion as to whether the increase in the night staff should take the form of placing extra nurses in the heavier wards or in an increase in the number of these moveable nurses, and the latter plan was unanimously decided upon. There will be an increase in the number of nurses on duty in the theatres and in some of the wards, and at a recent meeting of the board the recommendation of the committee that ten extra nurses should be engaged was ratified. Accommodation for nine of the ten extra nurses will be provided in two empty houses belonging to and adjoining the infirmary, after some structural alterations at a probable cost of about £300, and in estimating the future expenses of the infirmary an additional sum of £600 per annum must be reckoned for as the cost of the additional nurses recommended by the committee. The nursing staff will therefore now consist of 111 sisters and nurses exclusive of the lady superintendent and her assistant.

Sept. 10th.

## WALES AND WESTERN COUNTIES NOTES.

(From our own Correspondent.)

### *Merthyr General Hospital.*

The General Hospital at Merthyr Tydfil has been enlarged several times since its establishment in 1887. Last year an addition was made to the accommodation on the female side at the cost of Sir William Thomas Lewis and to the male side by public subscription. The increased general expenditure involved by this additional accommodation has been met by an annual contribution of 1*s.* from each workman employed in the local collieries and ironworks. The men employed at the Cyfarthfa works have not joined in this general scheme because they maintain that every medical man practising in the town should be *ipso facto* a member of the staff of the hospital. The workmen at the other works contend that the Cyfarthfa men should not have the benefits of the institution unless they comply with the conditions in force elsewhere, and the executive board of the hospital upholds this contention, so that except in cases of extreme urgency the Cyfarthfa men are not received for treatment.

### *Bristol Pauper Children.*

In a city so renowned as Bristol for its philanthropic institutions it is not a little strange that those who are responsible for the well-being of the poorest classes should appear to have so little sense of responsibility when the medical care of the latter is concerned. For some years past the Local Government Board has been urging the board of guardians to provide better and more adequate infirmary accommodation but the recommendations of the central authority have upon one pretext or another been either entirely ignored or postponed. At the last meeting of the board of guardians but scant courtesy was shown to suggestions made in a report of Mr. Andrew Fuller, a medical inspector of the Poor-law department of the Local Government Board. Mr. Fuller had made an inquiry into the medical supervision of the children under the care of the board of guardians. Some of these children are in grouped homes and others in scattered homes. As regards one of the former, at Downend, it appears that a medical man attends weekly and at other times when required, the superintendent matron being responsible for the decision when these other times shall be. As Mr. Fuller very properly pointed out, this places upon the matron a responsibility which she should not be called upon to bear—namely, the diagnosis of what may be termed minor ailments. The two most prominent recommendations made by Mr. Fuller had reference to the necessity for periodical examinations of the children's teeth and an examination by a specialist of the naso-pharynx of every child in the homes with a view to ascertain the necessity for medical or surgical treatment. Mr. Fuller stated that he found several children with badly ulcerated gums owing to their teeth requiring attention, while others had had their first teeth extracted, and none of the carious teeth of any of the children had been stopped. He also pointed out that quite a large proportion of the children were suffering from conditions of the nasal passages which required surgical or other treatment. In spite of these very precise statements from so experienced an official as Mr. Fuller his recommendations were spoken of by members of the board of guardians as "absurd" and "monstrous," mainly apparently because they involved additional expenditure. They do not seem to realise that nothing is more wasteful than to send out into the world from their schools youths and girls handicapped with deafness and the other untoward results of adenoid growths, and with their teeth so decayed that their digestive functions are seriously impaired.

### *From Medical Officer of Health to Medical Missionary.*

Dr. Peter Fraser, the medical officer of health of Carnarvonshire, has just applied to the Calvinistic Methodist Foreign Missions for an appointment as medical missionary in the Khassia Hills, India. It is expected that his application will be accepted and that his wife will share in his work. Dr. Fraser has made great efforts for the improvement in the housing of the working classes and has been instrumental in the removal of large slum areas in Carnarvon.

Sept. 10th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Girgenti Home for Inebriates.*

THE sixth annual report by the corporation of Glasgow to the Secretary for Scotland of the Girgenti Home for Inebriates states that there were 41 inmates in the reformatory on Dec. 31st, 1905, while up to that date there had been 113 admissions. During the year 1906 there were 17 new admissions, making the total number on the register 130. The medical officer has classified the patients as follows: hysterical patients, 18; weak-minded (moral paralytics), 17; accidental drunkards, 22; and chronic inebriates, 73. The largest number of inmates still comes from the lower grades of society, and as they have been "out and in" the poor-house for years they can be called "pauper inebriates." In connexion with chronic inebriates the medical officer is of opinion that a cure is highly improbable and very nearly impossible. It must be remembered that the majority of cases had been confirmed drunkards for a number of years, and when admitted were suffering from physical conditions the result of disease and accident. The treatment adopted in the reformatory is essentially the same as that adopted for mental disorders, and endeavours are directed not so much to stop the drinking of alcohol as to suppress the craving for it. Two years ago the medical officer in charge made trial of the drug treatment, which consisted of the administration of $\frac{1}{100}$th grain of atropine sulphate daily and also a mixture containing quinine, sodium, ammonium, and aloin. 22 patients willingly consented to undergo the treatment which was not, however, successful. The financial statement for the year shows that the expenditure (exclusive of expenditure on the farm and garden) amounted to £2628, equal on the average to £62 11*s.* 5*d.* per inmate per annum, or to £1 4*s.* per week. Of this weekly amount there were contributed by the Government 10*s.* 7*d.*, by the corporation 12*s.* 10½*d.*, and by sundry revenues 6½*d.* On the farm and garden account for the year there was a credit balance of £57 10*s.* 8*d.*

### *Deadly Concoction Drunk by Poles.*

Some extraordinary revelations were made at a recent meeting of the Dalziel parish council with reference to the drinking habits of Poles, of whom there are in Lanarkshire a considerable number engaged in working as coal miners. It was stated that cases had been sent to Kirklands Asylum, chargeable to the parish, on account of their indulgence in a drink which was doing much injury among Poles in the district. The concoction was a mixture of methylated spirit, ether, and paraffin oil, and it was asserted that a thimbleful of it would do more injury to a man than a bottle of brandy. This drink is hawked through the streets and the sale of it does not seem to be a contravention of the Licensing Acts. It was decided to communicate with Mr. Findlay, M.P., to get the matter brought before Parliament with a view to putting down the traffic in this stuff.

### *Death of Mr. John Stuart Nairne.*

I announce with regret the death of Mr. J. Stuart Nairne, F.R.C.S. Edin. and F.F.P.S. Glasg., which took place this week at his residence in Renfrew-street, Glasgow. Mr. Nairne, who was in his sixty-first year, has been in failing health for some time, and about a week ago, while on a visit to the country, he caught a chill which developed into his fatal illness. A native of Irvine, Mr. Nairne received his education in Glasgow, at first serving his apprenticeship as a pupil teacher but eventually turning his attention to medicine. At the close of his medical curriculum he began practice in Glasgow, his special interest lying in surgery. By frequent visits to hospitals at home and abroad he made himself acquainted with the most advanced methods of treatment and operation and latterly devoted himself chiefly to gynæcological work. For some time he conducted a gynæcology class for women in the Western Medical School. Impressed with the great amount of suffering among women he was the moving spirit in the foundation of the Samaritan Hospital which was inaugurated in Cumberland-street in January, 1886. Mr. Nairne was the first surgeon of the hospital and held office until 18 months ago when he was appointed consulting surgeon to the hospital. He took a great interest in the recent large extension of the institution and was present at the opening of the new section by Lady Blythswood in April last. On his retirement he was the recipient of a public testimonial, consisting of a cheque for about £300, a study chair, and of silver plate for Mrs. Nairne, the presentation being made by the Lord Provost. Mr. Nairne is survived by his wife, one son, and three daughters.

### *Lecture by Sir A. E. Wright at Glasgow Royal Infirmary.*

The opening lecture of the autumn course of post-graduate classes in connexion with the Glasgow Royal Infirmary was delivered in the Dispensary Hall last week by Sir A. E. Wright. The Lord Provost presided and there was a large attendance of medical men. The subject of the lecture was "The Principles of Vaccine-Therapy," or a new method of treating bacterial disease. The present methods of treatment—antiseptics, extirpation, serum-therapy, and the expectant method—were all pronounced unsatisfactory by the lecturer and he proceeded to show the defect of each. He was sorry that so many surgeons were still satisfied with the extirpation method which really belonged to barbarism. It was quite ineffective, except, perhaps, in the case of the appendix, which could be taken right away. He then went on to describe the principles in detail of vaccine-therapy and predicted that it would form an important branch of study in the medical schools of the future.

### *The Sanitary Association of Scotland.*

The Sanitary Association of Scotland held its annual meeting last week at Aberdeen and was able to demonstrate, to quote the words of the *Aberdeen Free Press*, that "it is not merely the pedagogue who calls the school to order and sets the old lessons anew; it also plays the part of pioneer in making fresh advances, and its conferences form a record of progress at once encouraging and useful." To the march of sanitation Scotland and the country at large owe a great deal, but there still remains much to be done to bring Scotland to the position in public health which the generally advanced condition of the country warrants us to expect. Dr. J. T. Wilson in his presidential address dealt with preventive measures against infectious diseases, the provision of hospitals for the isolation and treatment of those suffering from such diseases, and steps for restricting the dissemination of consumption. He took a broad view of the scope of the sanitary measures that were desirable to give the community its best chance of public health, and evidently believed that the public should be educated to understand the meaning of sanitary sin. An interesting feature of the proceedings was the discussion on cerebro-spinal fever, the declaration that the most effectual way of coping with it was to observe the elementary principles of sanitation being a clear indication of the value of the proceedings. Not merely public health authorities, who may be regarded as more immediately concerned, but the general public at large, whose health and happiness depend so largely on the adoption of effective sanitary measures, are thus taught the urgency of hygienic matters. Interesting papers were read to the congress by, among others, Mr. J. McLauchlan Young, lecturer in veterinary medicine at the University of Aberdeen, who read a paper on Meat Inspection; Dr. Matthew Hay, medical officer of health of Aberdeen, who discussed the inspection of fish; Mr. A. M. Trotter, veterinary inspector to the city of Glasgow, who dealt with the supervision of milk; and Dr. G. M. Cullen, who described the process of animal inspection in Edinburgh and spoke of the need of abattoirs. A paper read by the secretary of the congress for Dr. C. R. Macdonald, county medical officer of Ayrshire, upon the Supervision of Dairies led to an interesting debate, while a paper by the President upon the Training of Meat Inspectors also gave rise to a useful discussion.—The annual dinner of the association and a conversazione in the Art Gallery proved to be highly successful, and the officers of the association may be congratulated on having proved the value of the work of their institution.

Sept. 10th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Belfast Asylum.*

THE report of the resident medical superintendent of the Belfast Asylum, Dr. W. Graham, for the year ended Dec. 31st, 1906, has just been issued. There were 241 admissions during the year, 1349 (626 male and 723 female) patients under treatment, with 121 discharges and 94 deaths. The admissions show a decrease of 55 as compared with the previous year, the diminution being due to a falling-off in the cases transferred from the Belfast workhouse (the numbers from that institution being fewer by 59), while, on the other hand, the number of admissions directly from the patients' homes remains at the same ratio to the population as in previous years. In a very interesting and suggestive report Dr. Graham quotes from the inspectors of lunatics in their special report (on the alleged increase of insanity for 1906) a statement to the effect that they believe that "the Irish branch of the Celtic race is specially predisposed to mental breakdown, and therefore the great increase in the number of registered insane all over the civilised world is for this as well as for other reasons very marked in Ireland"; and they think that probably "the innutritious dietary and other deprivations of the majority of the population of Ireland must, when acting over many generations, have led to impaired nutrition of the nervous system, and in this way have developed in the race those neuropathic and psychopathic tendencies which are the precursors of insanity." Further, statistics prove—as stated in Dr. Graham's report—that the proportion of the insane among the Irish in America is greater than that of any other nationality. It is curious that Armenian and other emigrants to the United States from the Turkish dominions do not evince the same proneness to mental breakdown. Further, the refugees from Poland and from some parts of the Russian empire (whose state at home has been as unhappy as the Irish emigrant) do not show the same tendency to mental breakdown. Dr. Graham suggests, as an explanation of this curious fact, that it is due to two reasons. First, that many Irish emigrants are driven by poverty to the United States who are ill-fitted for the new conditions of life, the crowded tenements of big cities, and the abnormally keen competition for a livelihood—in a word, all that is implied in a sudden change from a quiet agricultural existence in Ireland to the bustle and excitement of New York or Chicago; and secondly, that the intellect of the Irishman is finer and that he is more civilised than the Russian or Hungarian. Owing to the fact that the Irish race, as a race, is of finer psychical structure, therefore, adverse conditions tell on him more strongly than on the others. This brightness, to quote from Dr. Graham's report, this keen susceptibility to joy and sorrow, make him more liable to mental breakdown than would be the case among duller peoples. The gross expenditure for the financial year ended March 31st, 1907, amounted to £25,483, which, after deducting receipts from paying patients and miscellaneous sources, gives the low net capitation cost of £21 1*s.* 8*d.* per annum. Special reference is made to the great loss which the institution—and, I may add, the medical profession—has sustained in the death, on Feb. 13th, 1907, of Dr. R. A. L. Graham who had been an assistant medical officer for eight years. Dr. A. S. Merrick, who for 22 years was medical superintendent (he resigned in 1897), died at the close of last year.

### *Queen's College, Belfast.*

The report of the President of Queen's College, Belfast (Rev. Dr. Hamilton), just issued for the academic year, 1906-07, indicates that the College continues to prosecute its work with vigour and success. Special reference is made to the splendid achievement accomplished by the equipment fund. 20 years ago there was but one laboratory; now there are eight. Owing to the Treasury giving £5400 for new buildings on condition that a corresponding sum of £5400 was contributed by the better equipment fund, there are now the "Donald Currie Laboratories" devoted to chemistry, the "Musgrave Laboratories" devoted to research and teaching in pathology and bacteriology, the "Jaffé Laboratories" for physiology, the "Harland Laboratories" for natural philosophy and engineering, as well as biological, pharmaceutical, and anatomical laboratories. Of the students there was an increase in the Faculty of Arts and as usual the medical students were numerous. An athletic field will be available next session, and all the students' college societies appear to have had very useful and successful sessions during the academic year 1906-07. Among the honours to old students Professor J. W. Byers was knighted, Serjeant Dodd, K.C., was appointed one of His Majesty's judges in Ireland, and Mr. J. O. Wylie, K.C., was selected as the judicial head of the Irish Land Commission.

### *Women's National Health Association of Ireland.*

Her Excellency the Countess of Aberdeen is to be present and to take part in a meeting which will be held on Oct. 29th in the City Hall, Belfast (the Lord Mayor, the Earl of Shaftesbury, presiding), to establish a Belfast branch of the Women's National Health Association of Ireland.

### *Lunacy in Ireland.*

The following deplorable statistics were mentioned at a meeting of the Belfast Asylum Committee on Sept. 9th. In 1851 the registered number of insane in Ireland was 9980; in 1901 they totalled 25,050, or 1 to every 179 of the population. In 1851 the entire insane for Belfast, county Antrim, county Down, and Carrickfergus was 330. The last returns showed—Belfast, 1150; County Down, about 600; and County Antrim, about 550; a total of 2300, or an increase of 1970. While the population of Ireland in 1841 was 8,175,124, it was in 1901 4,458,775, a decrease of 3,716,349. (In 1906 the Registrar-General estimates the population as—in the middle of the year—4,388,006, while in 1906 there were 35,344 emigrants.) Comparing the number of lunatics per 10,000 of population, the result was:—

| | England and Wales. | Scotland. | Ireland. |
|---|---|---|---|
| 1871 | 30·4 | 34·0 | 30·5 |
| 1881 | 32·5 | 38·5 | 35·6 |
| 1891 | 33·6 | 38·4 | 45·0 |
| 1901 | 40·8 | 45·0 | 56·2 |

Such startling figures surely demand the attention of statesmen and patriots.

### *Cerebro-spinal Fever.*

On Sept. 9th a boy, six years of age, who first exhibited signs of cerebro-spinal meningitis on Sept. 6th, died at Harryville, Ballymena, county Antrim.

Sept. 10th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *The Purification of Water in Hotels.*

THE French Touring Club is organising a competition the object of which is to discover the best means of insuring the purity of water supplied in hotels. The programme has been arranged by a committee of which M. J. Lucas-Championnière is the president, and proposals are invited for methods of sterilisation which will be satisfactory alike to the Faculty of Medicine, to hotel-keepers, and to travellers. Any inventor may compete. The method or apparatus which is adjudged the best will be recommended to all hotel-keepers and to all the members of the French Touring Club.

### *Vaccination in Paris.*

Dr. Roux has presented to the council of public health of the department of the Seine a report on his inspections of vaccination stations (*établissements vaccinogènes*) in 1906. He remarks that he cannot conclude his report without calling attention to the fact that more than three years have elapsed since vaccination and revaccination were made obligatory, but that the law has not been systematically enforced either in Paris or in the department of the Seine. Lists of persons who were required to conform to the regulations were not prepared, hours of attendance (*séances*) were not arranged, and the results were not recorded.

### *The School of Medicine in Indo-China.*

In the School of Medicine at Saigon in Indo-China a military department has been established for the purpose of training ten native medical assistants each year. The students will be selected by competition among the native soldiers in course of training. The period of study will be four years.

### *Treatment of Ankylosis of the Knee-joint with Malposition.*

At the congress of the French Association for the Advancement of Science M. Lardennois read a paper on the treatment of the cases in which a child's knee-joint had become ankylosed in a faulty position. He said that ankylosis of the knee-joint in the position of flexion was not uncommon in children, and the proper treatment was a difficult problem because the same operative measures could not be used as in the case of adults. An immediate correction might no doubt be obtained by partial resection of the tibial epiphysis, but the ultimate results would be disastrous, for this cartilage was necessary for the natural growth of the bone and interference with it would lead to a shortening of six or eight inches in the patient's lower limb when adult life was reached. Moreover, when the ankylosis was divided in the usual way two flattened surfaces were produced which could not be brought into satisfactory apposition when the limb was straightened. M. Lardennois avoided this difficulty by making a curved incision with Séglie's wire saw; the opposing curved surfaces obtained in this way presented a considerable area of contact and firm union might be expected.

### *Wounds of the Eye Caused by the Bursting of Bottles.*

At the same congress M. A. Bourgeois read a paper on the treatment of wounds of the eye caused by the bursting of bottles. He said that on account of the thickness of champagne bottles the fragments produced by their bursting were usually of considerable size, and the wounds which they caused were proportionately extensive and serious; the bruising effect of the flying glass caused the edges of the wounds to be irregular but no glass was left in them. He had found that suture of the cornea or of the cornea and sclerotic gave excellent results when performed soon after the infliction of the injury. Seriously wounded eyes were invariably enucleated 20 years ago but the improved methods and instruments of modern surgeons frequently avoided the necessity for enucleation, to the advantage of the patient's appearance and in some cases a certain amount of visual power was retained.

### *French Ambulances Work in Morocco.*

Dr. Henri de Rothschild has just started for Tangier to organise there an ambulance service for the wounded from Casablanca. With him have gone two other medical men and two nurses (*surveillantes*). The Red Cross Society (Société de Secours aux Blessés) has also organised an ambulance with the authority of the Minister of War. The general secretary of the society has started for Tangier where he will confer with the French Minister to Morocco. The ambulance will consist of 100 beds and the staff of 18 nurses, eight male and ten female.

### *A Gift of 4,000,000 Francs.*

The Red Cross Society has just received an anonymous gift consisting of the estate of Mont des Oiseaux at Hyères. The estate includes a park of 80 hectares, terraces, gardens, a house containing 120 rooms and five villas scattered through the grounds, the whole being valued at 4,000,000 francs. The society is going to make it a convalescent home for sick and wounded officers. The anonymous donor has also given a sum of 100,000 francs for upkeep.

Sept. 10th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *Hospital Accommodation in Rome.*

THE Administrative Board of the Roman Hospitals has this year been confronted with the problem of hospital accommodation in an acute form, for which a prompt remedy has become an absolute necessity. The overcrowding which for many years has prevailed in the wards of all the hospitals has lately been greatly aggravated through the demolition of part of the Hospital of Sant' Antonio on the Esquiline Hill to make room for the new Via Napoleone III.; by the removal of a wing of the Hospital of Santo Spirito to allow of the systematisation of the adjoining part of the Tiber near the Bridge of St. Angelo; and, finally, by the increase of the population of the city, which augments the number of patients seeking admission to the hospitals by about 400 every year. Whilst in London there is an outcry over the cost of maintaining empty beds, here in Rome the complaint is very different, as will be understood by a glimpse at any of the wards of such hospitals as Santo Spirito or San Giovanni. In the latter, for example, one of the wards on the ground floor contains 150 beds arranged in four rows with scant room between and every bed with its occupant. And for each bed that becomes vacant there are always dozens of applicants. With such a state of affairs already existing and the certainty in view that with the advent of winter the number of patients demanding admission will be greater still, no time was to be lost in providing additional accommodation. To meet the most pressing needs the board has ordered the immediate erection on a site contiguous to the hospital of San Giovanni of ten of the transportable hospitals known as the "Döcker," many of which are used by the Red Cross Societies in Germany and elsewhere, and of which there are already two in Rome at the Lazaretto of Santa Prisca. These "Döcker's barracks" are a Swedish invention, and are 22 metres long by six metres wide; they consist of a single storey and have a double wall of wood lined with "enamelled" cloth, and a waterproof roof made of wood and cloth, or cardboard and cloth. Each contains 22 beds. It is hoped that they will all be erected by the end of the year. Their cost will be 120,000 lire (£4800). At the same time the foundations are being laid, on a site between San Giovanni and the Via Merulana, of six new permanent hospital pavilions of two storeys each, with a large ward on each floor capable of taking 30 patients. When these are all completed some 600 additional beds will be available for the reception of patients, a provision which will give at least temporary relief to the present congested state of the other hospitals.

### *Outbreak of Tetanus at Bologna.*

The surgical clinic of the University of Bologna has been closed on account of the numerous cases of tetanus which have appeared amongst the patients there.

### *The Moderate Use of Wine.*

The controversy as to the use of alcoholic beverages has diffused itself over the continent, the Latin countries in particular. In Italy it still shows animation, though the *Giornale Vinicolo* (Wine-growers' Journal) is not perhaps the best medium through which the arguments *pro et contra* might be addressed to the public. These, however, are all from clinical teachers or consultants whose impartiality is beyond question, and there could hardly be a better "authority" to open the discussion than the Senator Giulio Bizzozero, whose loss to science is deplored far beyond the subalpine schools of which he was an ornament. Insisting on the wine in daily use being the genuine juice of the grape with which the "manufacturer" has as little as possible to do, he sees only good to be derived from it if taken in moderation—that is, in quantities adjusted to the physical and mental wants of the consumer. So used he has found it to brace the mind for its regular work, giving a sense of confidence as well as support to the faculties. Next comes the all-accomplished professor of physiology in the same school, Dr. Angelo Mosso, who is convinced that wine, within the limits laid down by Bizzozero, is a nutrient to the system, slowing or diminishing waste. Having placed this fact in physiological evidence, he cites the experience of the Prussian army which in the severe campaign of 1870–71 maintained its health in augmented proportion as it was quartered in ever greater force in a wine-growing country. Those in its ranks who belonged to total abstinence societies were found less able to stand the fatigues and privations of the march or the trenches than their comrades who drank in moderation the "bottled sunshine" of the Loire. Dr. Augusto Murri, professor of clinical medicine in the University of Bologna (whose contributions to THE LANCET on cerebral pathology are still referred to by workers in that field), is of opinion that the graduated use of wine is not hurtful; on the contrary, by reason of its adjustment to the individual's needs, it is distinctly wholesome. His long and varied clinical experience warrants him in saying that men who have used wine freely in their work, professional or other, maintain a high degree of vigour even in old age and that it would be more in accordance with true science to assert the value of wine, moderately used, than to condemn it *simpliciter*. Dr. Bonaventura Graziadei, who holds the chair of medical diagnosis in the University of Turin, is as clear as any of his colleagues on the subject. "Alcohol," he says, "is a necessity for man. All races possess their stimulating beverages. Of these wine is the prototype and I am convinced that its moderate use is beneficial." To the same effect may be cited the opinion of the Senator Achille De Giovanni, professor of clinical medicine in the University of Padua, while Dr. Alessandro Lustig, who occupies the chair of general pathology in the Istituto di Studi Superiori at Florence, says he finds "a glass of sound wine not only agreeable to the palate but useful to the organism." Dr. Cesare Lombroso of the University of Turin, where he is professor of psychiatry and criminal anthropology, and who (*si quis alius!*) is a witness of the evils of the abuse of alcohol, speaks with less confidence on the subject and would advise abstention from the beverage wherever it "is impossible to fix the dose beyond which it becomes a source of the more serious mischief;" and a no less distinguished psychiatrist, Professor Enrico Morselli of Genoa, sees the root of the evil not in wine but in "the alcohols of industrial origin." Professor Capparelli, who holds the chair of physiology in the University of Catania, agrees with his *confrère* Morselli in insisting on pure wine culture and traces the harm done by "alcohol" to the artificial products thrown on the market, adding: "I believe the moderate use of sound wine to be an excellent coefficient of health," while he scouts the notion that taken thus it can ever cause hepatic mischief. Dr. Carlo Ruata, professor of materia medica in the Umbrian School (University of Perugia), maintains that a truly scientific and impartial investigation of the whole subject has yet to be started and sides with Capparelli in announcing that the moderate use of wine has never caused cirrhosis of the liver. The professor of hygiene at Naples, Dr. De Giaxa, thinks that the use of vinous beverages is a question of individual tolerance and cannot persuade himself that sound wine is not "good for digestion and the physical energy of the organism." Professor Alfredo Rubino (also of the Neapolitan University) is equally emphatic in favour of the judicious use of wine, as are also Professor Sanfelice of Messina and Professor Martinotti of Bologna. Professor Antonio Carle of Turin, who, as a pure surgeon, disclaims all pretension to speak with authority on a medico-clinical question, approves the moderate use of alcohol freely diluted; of the same school, Dr. Bernardo Silva, though an abstainer of ten years' standing, admits the benefit of graduated doses of wine, especially in fever cases and in convalescents; and Professor Galeotti of the Pathological Institute of Naples, after he had long been a teetotaler, began the graduated use of fermented liquors in convalescence from illness and found distinct benefit from it. Lastly, Professor Mangiagalli, the distinguished successor of Porro in the Lombard School, deprecates the "exaggeration" which is a distinctive note of the total abstinence propaganda. "I have even read in books," he says, "a denunciation of bread. There are certain men of science, like the mediæval Mystics, who would mould and model a humanity naked, joyless, subsisting on fruit and water. The crusade against alcohol is holy, but it can gain neither in force nor in effect by making itself the mouthpiece of assertions and exaggerations demonstrably unscientific." 18 representatives of Italian medicine, it will be seen, have each, *ex cathedrâ* and, so to speak, above his own signature, pronounced opinions on the moderate use of wine, and in well-nigh every case, some more, some less, emphatic in expression, have declared in its favour. Wine, not spirits, the juice of the grape *par excellence*, as consumed in Latin countries, is the beverage under consideration, and there is unanimity among the 18 medical men as to the wine trade having itself to blame if by impure production it plays into the hands of those who would eliminate all wine, good as well as not so good or positively bad, from human consumption. One of the 18 anticipates a reaction against the mineral waters now so common as a substitute for the "bottled sunshine" of his native land. In these, too, it is alleged, there is spurious manufacture! But, when all is said and done, the public have nothing to lose by discussions which make for the production of a genuine article and for the use of the said article in moderation.

Sept. 7th.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

### *Birth Returns.*

THE Imperial Medical School of Haidar Pasha on the Asiatic side of the metropolis has submitted a very useful suggestion to the Ottoman Ministry of Justice, as well as to the central municipality, with regard to the necessity of registering in a constant and regular way the birth returns of Constantinople. Up to now only deaths were recorded, whereas the returns of births were utterly neglected. This neglect rendered the accurate making of the census and the ascertaining of the actual increase or decrease of the indigenous population impossible. True, there existed the practice of registering the births by imams and mouktars, as well as by the officials of non-Mussulman religious communities, but this was done in a very incomplete, negligent fashion, the returns never being submitted to the municipalities. Henceforward it is intended to remedy this state of things. Orders have been given that each municipality is to provide a general official register for the purpose of entering birth as well as death returns. The municipal sanitary inspectors will be responsible for the regular and accurate registration. It will thus be possible in the future to compare the death- and birth-rates and to make correct statistics of the movement of the population.

### *Yaghourt and its Adulteration.*

One of the chief popular foods in Turkey is yaghourt. This is a kind of curdled milk which makes a very favourite dish in spring and summer time, especially with the poorer classes of the population. At present there exist six factories which supply the metropolis with yaghourt; two at Epivatis, one at Tcheuplidé, and three at Callictaria. The one at the last-named place, in possession of a Moslem, is the largest and best equipped. It is a stone building and has three large boilers of 600 litres capacity each. The milk used in this factory is that of the sheep. This is boiled for two hours, being at the same time agitated, and then poured from a considerable height into numerous receptacles which are made of tin and placed upon tiers of slightly heated shelves. Here it is left for two or three hours. The scum is then taken off and rennet introduced for coagulation and fermentation. Now, it has been found that the yaghourt is frequently adulterated, extraneous matter, such as flour, or starch, or gum, or other oftentimes injurious ingredients, being introduced into the milk kept for its preparation. This fraudulent practice will now be strictly forbidden and severe measures taken to insure that all the yaghourt factories, and the local dairies where this food stuff is being prepared on a minor scale, shall produce pure, unadulterated yaghourt. The municipal medical men will visit at regular intervals the factories and the dairies. They will also examine the dishes and receptacles of hawkers selling yaghourt in the streets. Every fraudulent practice will be heavily punished.

### *The Cholera.*

Extensive and energetic measures are being taken against the dreaded invasion of cholera from Russia. In that country the scourge seems to make great ravages, judging from the reports received in Constantinople. It is spreading through many provinces and has reached even St. Petersburg. The Red Cross Association of that city has granted 100,000 roubles for the purpose of combating the epidemic. This association also sends a number of medical men to every infected district, while medical committees hold frequent meetings for the discussion of means and measures of prevention and cure. The government of Samara seems to suffer most but Simbirsk, Astrakhan, and Sisran are also suffering greatly. One valuable measure is the erection of tea houses, thus enabling the populace to dispense with the use of unboiled river water. It is to be hoped that the steps taken in Constantinople will prove to be efficient, but at any rate the Conseil Supérieur de Santé is exhibiting a laudable vigilance.

August 23rd.

VACCINATION FEES IN SOUTH WALES AND THE WEST OF ENGLAND. — At a meeting of the Neath (Glamorganshire) board of guardians held on Sept. 4th it was decided to pay the minimum vaccination fees to the public vaccinators. — At a meeting of the Warmley (Gloucestershire) board of guardians held on Sept. 3rd it was decided to give the minimum fees for vaccination to the public vaccinators of the union, one of the guardians remarking that "he was sorry they could not make it lower as he did not believe in vaccination."—The public vaccinators of the Bristol union have accepted the fees for vaccinations as suggested by the guardians. Seven of the public vaccinators consequently will receive the minimum fees allowed by the Local Government Board and the remaining two gentlemen will receive 3*s*. 6*d*. and 4*s*. per case respectively, owing to the larger area and more scattered population of their districts.

# Obituary.

## TIMOTHY HOLMES, M.A., M.C. CANTAB., F.R.C.S. ENG.,

FORMERLY VICE-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; FELLOW OF PEMBROKE COLLEGE, CAMBRIDGE; CONSULTING SURGEON TO, AND JOINT TREASURER OF, ST. GEORGE'S HOSPITAL.

We deeply regret to record the death at the advanced age of 82 years of Mr. Timothy Holmes, senior consulting surgeon to, and until recently joint treasurer of, St. George's Hospital. We have lost in him one of the great figures of Victorian surgery. Although he was but a name to those who have joined our ranks since 1887 or so, for a quarter of a century before that date he was ranked by universal opinion among the leaders of his science, appealing to the practical man, the educational expert, and the scientific surgeon alike by the range of his knowledge, the breadth of his views and his power to express them clearly.

Timothy Holmes was the son of a London merchant who died while his children, two sons and a daughter, were still quite young. He was educated at the Merchant Taylors' School, and later at Pembroke College, Cambridge, where he took one of the best degrees of his year, 1847, being thirteenth classic and also a wrangler. From Cambridge he proceeded to St. George's Hospital, where the leading members of the honorary staff at the time were Dr. Bence Jones, Mr. Robert Keate, and Mr. Cæsar Hawkins, the last two attaining to the post of President of the Royal College of Surgeons of England; the junior physician was Dr., now Sir Henry, Pitman who still remains among us; while Dr. Handfield Jones and Mr., afterwards Sir, Prescott Hewett were demonstrators of anatomy and physiology in the medical school. Holmes having decided to be a pure surgeon proceeded at once to the examinations for the Fellowship, passing the final in 1853 and never being a Member of the College. He was marked out from the first by his intellectual attainments for a place upon the staff, and after a brief interval, during which he served the usual offices of demonstrator of anatomy and surgical registrar, he was elected assistant surgeon to the hospital. In 1868 he became full surgeon, a post which he held until 1888, his time of office having undergone special extension. On the expiration of his surgeoncy he was elected consulting surgeon and also accepted the onerous and thankless task of treasurer, being associated in an honorary capacity in this post with the late Duke of Westminster. When at length he resigned this office he had worked for 50 years for the institution, and during the whole of that unusual period the impression which he had first created never varied—all his colleagues, his seniors and his juniors, saw in him a just man, one whose great intellectual capacities would never be used in a narrow or selfish way, the very type of a professional leader and the ideal friend for those who had their way to make.

Holmes's connexion with the Royal College of Surgeons of England was a long one. In 1872, 1873, and 1874 he was Hunterian Professor of Surgery and Pathology, and delivered at the College an extended series of lectures on the surgical treatment of aneurysm which confirmed the impression already conveyed by his literary work that he was a great expositor of his science and art. In 1829 and 1830 George James Guthrie had delivered the Hunterian Lectures on the same topic, and Holmes reviewed the whole subject in the light of the surgical development that had occurred during the intervening 40 years, bringing to the assistance of his great critical faculty the pen of a finished scholar. It was probably the success of these lectures which decided him to write his well-known "Treatise on the Principles and Practice of Surgery," though his literary capacity had been already exhibited in his work as general editor of, and contributor to, Holmes's "System of Surgery, Theoretical and Practical," a second edition of which was called for during his professorship at the College. In 1873 he was elected, together with John Marshall and Luther Holden, both of whom afterwards occupied the Presidential chair of the College, to the court of examiners; in 1877 he became a Councillor, being later elected a Vice-President of the College. It must be taken for granted that nothing but his own wish and action deprived him of the Presidency, for if ever an officer of the College had a claim upon that position by dignity of character, by force of intellect, and by quality of work it was Timothy Holmes.

Holmes's literary work made his name a familiar one to the surgeons of the world during his professional career. During 1860 and the four following years there appeared his "System of Surgery, Theoretical and Practical," an encyclopædia to which treatises were contributed by such recognised masters as Sir John Simon (inflammation), Sir James Paget (wounds, tumours), Sir William Savory (scrofula, collapse), Sir Thomas Longmore (gunshot wounds), Sir Prescott Hewett (injuries of the head), Sir William Jenner (skin diseases), Lord Lister (anæsthetics, amputations), Sir George Humphry and Sir Henry Thompson (diseases of male organs of generation)—to mention a few prominent contributors under the titular style which they later received, together with the subjects on which they wrote. It speaks much for Holmes's rising reputation as surgeon and scholar that he should have been chosen for the general editorship of such a work and should have found such a group of collaborators ready to assist him, for he was not yet assistant surgeon to St. George's Hospital when the scheme of the work was projected. His own contributions to the encyclopædia were the articles upon accidents from burns and lightning; upon dislocations, aneurysm, and diseases of the bone; upon excision of bones and joints; and upon the surgical diseases of childhood, the last being issued as an appendix. The System did not receive an enthusiastic welcome at first; the difficulties of joint-stock production had hardly been anticipated, and the authors found themselves cramped by the fear of repeating what others had said, or of anticipating what others were about to say. The various essays were not all written with identical conscientiousness and the general impression first produced in the surgical world seems to have been one of sympathetic disappointment. But undoubtedly the day had already gone by when it was possible for one author to write a complete system of surgery from his own personal knowledge; and after allowance had been made for the defects that must be inherent in production upon a scheme of collaboration the System was seen to possess a design and an execution which did honour alike to the general editor and his publishers, Messrs. Longmans and Co. It is possible that the comparative youth of the editor did not allow him in the first instance to be as resolute with his contributors as an older man would have been, but if Holmes spared his friends in the course of the issue of the System he certainly did not spare himself. The closing sentence of several long reviews in our columns upon the various volumes of the System as they appeared runs as follows: "Taken as a whole it is the most important surgical work which has ever issued from the English press. It is a great honour to a surgeon, comparatively young as is Mr. Holmes, to have been intrusted with the editing of so great a work; but now that it is completed it is only fair to say that he has executed the difficult task with ability, fidelity, and judgment. His own personal contributions are of a high order and both in choice of authors and arrangement of subjects there seems rarely any fault to find." A second edition of the System appeared ten years later. Sir John Simon's classical article upon inflammation is now supplemented, or rather replaced, by an essay from the pen of Burdon Sanderson, in which the foundations of modern pathology are revealed, while Lister gives a full account of the antiseptic treatment of wounds. Holmes may have learned his surgery too soon and may have entered the physiological laboratory too late ever to have become familiar with the details—chemical, physical, and bacteriological—a knowledge of which such essays implied; but he was far too great an observer and far too great a surgeon, both as scholar and clinician, not to see at once that the science and art of surgery were going to be revised from top to bottom and that the System of Surgery must be altered thoroughly from cover to cover, or must be expected to hold the field only until the new learning had produced a comprehensive literature of its own. The third and last edition of the System appeared in 1883, Mr. J. W. Hulke being most happily associated with Holmes in the editorship. The contributions were now differently arranged, owing to which rather than to compression the material was all included in three volumes. The interval of ten years or more necessitated the re-writing of many of the essays as well as the introduction of new authors, prominent among whom may be mentioned Mr. A. E. Barker, Mr. H. T. Butlin, Sir William Dalby, Mr. Rickman Godlee, Mr. Warrington Haward, Mr. Henry Morris, and Sir Frederick Treves. Holmes himself largely re-wrote his original contributions, and the result was an admirable exposition of the beliefs and practice of British surgery.

In 1875 he published his well-known "Treatise on the Principles and Practice of Surgery," which, although founded on the "System of Surgery," presented evidence of the personal experience of the author, of his learning as a skilled anatomist, and of his assimilation of the developing doctrines of asepsis. This was the handbook of several generations of medical students in every English-speaking medical school, and indeed has only of recent times been excluded from the list of manuals which it was our custom to recommend for the constitution of a student's library. It was admirably written and illustrated, but not quite as easy reading as it seemed. Holmes's classical culture made it impossible for him not to write clearly, but he was in many places too intellectual for the audience which he supposed himself to be addressing, so that the sequence of events or the force of arguments which appeared clear to him often required more elaboration if they were to be equally clear to the average medical student. The book, however, was a great performance and deservedly enjoyed its popularity. He produced four editions of the work but the fifth edition was left to Mr. T. Pickering Pick, his colleague at St. George's Hospital. Mr. Pick exercised a free hand, for although he preserved the original plan of the book he revised it most carefully, incorporating in it all the recent teaching in surgery and pathology, and especially giving prominence to the innovations in practice and in range of treatment due to the developments of aseptic surgery.

The "Treatise on Surgery" and the articles in the "System of Surgery" comprise most of Holmes's literary work, but the appendix on "The Surgical Treatment of the Diseases of Childhood" was extended in scope and detail until it became an important volume when it was published as a separate work and obtained great success, running through two editions and being translated into French and German. His allotment to himself of this subject when bringing out the System was due to the fact that he had been elected in 1859 assistant surgeon to the Children's Hospital, Great Ormond-street. He became full surgeon to the institution two years later and only severed his connexion in 1868 when he became full surgeon to St. George's Hospital and also dean of the medical school. Holmes was also the editor for several editions of "Gray's Anatomy"; he translated from the German Wagner's work on "The Resection of Bones," and contributed to the Reports of St. George's Hospital. All the productions of his pen possessed the same qualities of culture and thoroughness, as his not infrequent contributions to our columns show.

As a surgeon Holmes came at rather a difficult period, being about 20 years younger than Brodie, ten years younger than Paget, but a whole generation older than, for example, Macewen, Watson Cheyne, and Treves. He recognised the enormous value and significance of the work of his great contemporary, Lord Lister, but it was impossible for him to do more at once. Lister had taught himself, and was instructing the whole scientific world junior to him, but no one could have taught Lister's contemporaries who had left the lecture-room too long to become flexible pupils when the famous work at Glasgow and Edinburgh began to bear results as a complete revolution. Holmes had been brought up in an older school, and though he faced manfully the difficulties of an entirely new technique, and though he was insistent upon the Listerian doctrines in his lectures, he never became a great exponent of the practice of aseptic surgery. He was, however, a bold and fertile operator and records of his work in the two hospitals with which he was connected form a remarkable tribute to his mastery of his science, while he welcomed the teachings of aseptic surgery in the most whole-hearted manner because of the vastly extended scope of operative treatment which it promised. The last paper which he contributed to our columns[1] is a splendid testimony to his foresight as a surgeon, as well as to the long continuance of his skill as an operator and his adaptability towards modern methods. In 1875, in the first edition of the "Treatise on the Principles and Practice of Surgery," he had advocated that the right treatment for rupture of the bladder was abdominal section and the immediate suture of the rent. The teaching was in advance of the day, the leaders of surgery being still unaware of the possibilities opened up to them by aseptic technique, and though it was adopted by the late Mr. C. Heath and Mr. A. Willett, and possibly by one or two others, the results were not satisfactory. But in 1886 Sir William MacCormac recorded in our columns two successful cases of suture of the ruptured bladder after abdominal section, mentioning the fact of Holmes's early advocacy of the procedure; and in the following year Holmes had the gratification of being able to record a successful case under his own care. The details which he published show that he had foreseen in days when the operation was considered to be but a desperate remedy in a desperate plight, the difficulties that would have to be met by the surgeon, and that he recognised, when at last the opportunity came to him, the advantages of the Listerian technique.

As a teacher he possessed virtues which made him a little dreaded though enormously admired by the students at St. George's Hospital for over 30 years. He was clear, forcible, sarcastic, not unkind, but distinctly intolerant of fools. The scholar and the logician in him would forgive slowness if it was redeemed by patience, but he could not abide shallowness and glibness. The student who attending at a test examination had committed to memory from Holmes's own book a list of signs and symptoms would find his complacency rent from him by an inability to answer one or two questions on first principles. He used the same methods during the years when he was an examiner at the Royal College of Surgeons of England, and many are the men who attributed their failure to his alleged severity. As a matter of fact he was not severe, for the well-grounded candidate always had in him a friend. He could not forgive pretence, but he was always quick to mark the man whose knowledge was ahead of his powers of expression.

As a man of affairs Holmes was a great success, his clearness of vision, his personal courage and integrity, and his habit of hard work enabling him to detect the reasons of failure as well as to appreciate the factors of success. His experience of hospital affairs made him an authority upon the numerous practical and social questions which centre round what is known as hospital abuse. Jointly with the late Dr. J. S. Bristowe he was the author of a valuable report on hospitals to the Privy Council (Sixth Annual Report to the Medical Officers of the Privy Council). More than 20 years ago he pointed to the development of provident dispensaries, so that they might form a link between the general practitioner and the out-patient department of hospitals, as the right step to be taken to protect alike the charitable contributions of the well-to-do, the rights of the sick poor, and the position of the professional man. That in such development lies probably the solution of a most difficult problem is now an accepted belief. As treasurer of St. George's Hospital he exercised for more than a decade a close supervision over the work of the institution with which he had been so long connected. He was for 20 years chief surgeon to the Metropolitan police, he filled the distinguished post of President of the Royal Medical and Chirurgical Society, and he sat with advantage to his colleagues upon many committees to consider questions of hospital dispensation.

We have said enough to justify our earlier statement that Timothy Holmes, though of late fallen out of the line of observation, was one of the great figures of Victorian surgery. He was publicly accepted as such. To members of the St. George's Hospital Medical School during the long years of his active work he was always the personification of the great surgeon. His wide reading and extensive and accurate scholarship—for to his attainments as surgeon and anatomist, classic and mathematician, he added a knowledge of French and German—his devotion to his work, his caustic simplicity, his dignified appearance and the mannerisms due to the fact that he had lost the sight of one eye will always dwell in the memory of his pupils. To have been Holmes's house surgeon or Holmes's dresser meant the lifelong recollection of Holmes's characteristics. To have been his colleague was equally to feel his influence, as the following brief communication shows: "By his colleagues," writes "W. H.," "Mr. Holmes will be mourned with affectionate sorrow as one who was ever an example of the highest integrity and the most disinterested generosity. By his juniors he will be remembered with especial gratitude as always ready to help them with his advice and experience and to place at their service his unrivalled knowledge of the literature of his profession. He was, moreover, particularly careful of the

---

[1] THE LANCET, July 23rd, 1887, p. 153.

TIMOTHY HOLMES, M.A., M.C. CANTAB., F.R.C.S. ENG.,
CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL.

interests of his younger colleagues, furthering their progress, guarding their rights, giving them every opportunity for their advancement, and rejoicing in their success. As one who had the happiness of working with Mr. Holmes for many years both at the Hospital for Sick Children, at St. George's Hospital, and in many other capacities, the writer would say most emphatically that it would be impossible to imagine a more loyal, kind, or generous colleague. His presence at the formal consultations held in the hospital theatre was of the greatest value, his large experience and wonderful memory enabling him to quote with unfailing accuracy whatever was available to throw light upon an obscure or difficult case and to correct (perhaps with gentle and good-natured irony) the errors which some of us may have been in danger of exhibiting. And yet he was always ready to listen to others and to act on their advice. In the medical school, too, he guided us with mature wisdom based upon a liberal outlook; he placed before us with the utmost clearness and impartiality the essentials of a discussion; and would take unlimited pains to surmount a difficulty. At the hospital board his judicial and well-considered advice, communicated in clear and admirably chosen words, always carried great weight with the governors. And then, besides his eminence in literature and science, his extensive reading, his fine scholarship, and his familiarity with modern languages made him a most delightful companion, whose genial and brilliant conversation was a welcome addition to any social gathering." It has fallen to the lot of few surgeons to be enshrined in the hearts of so many followers with respect as well as with affection, and a practical expression of these feelings by St. George's Hospital men may be seen in the admirable portrait of Holmes from Sir William Richmond's brush which hangs in the board-room of the hospital.

Holmes's private life was the quiet and cultured one that might be expected from one who was absorbed in a scientific career and its altruistic developments. He married a lady who was able to be his companion in his intellectual pursuits, Sarah Brooksbank, and to his widow who survives him we tender our respectful sympathy. She has the consolation of knowing that her husband's death will bring a sense of personal loss to hundreds whose names she has never heard.

Our portrait is a reproduction from a photograph taken at the date of Mr. Holmes's retirement from active membership of the staff of the hospital—i.e., some time in 1888, when he was 63 years of age.

## ANDREW GRAY, M.D. EDIN.

THE death of Dr. Andrew Gray of St. Helens occurred on August 30th as the result of a cycling accident. Dr. Gray was cycling in the town on August 24th and when passing a tramcar he collided with another cyclist and was thrown with great violence against the kerbstone of the footpath. He was carried to an adjoining surgery in an unconscious state and was afterwards found to be suffering from cerebral hæmorrhage. Despite surgical treatment he succumbed to his injuries on the 30th at the age of 43 years. Dr. Gray received his medical education at the University of Edinburgh, where he graduated as M.A. in 1884 and as M.D. in 1891. He was also a D.P.H. of the Victoria University. He leaves a widow and four children to mourn his untimely end. The funeral, which was largely attended, took place on Sept. 2nd at St. Helens cemetery. Military honours were accorded to the remains, as the late Dr. Gray held the rank of captain and honorary major in the 2nd V.B. South Lancashire Regiment.

## CHARLES EDWARD KILKELLY, M.B. DUB., F.R.C.S. IREL., J.P.,

DEPUTY SURGEON-GENERAL, I.M.S.

Deputy Surgeon-General Charles Edward Kilkelly, who died on July 26th at his Dublin residence, 12, Upper Fitzwilliam-street, saw much active service in India during the Mutiny in 1857, and was one of the survivors of that conflict who were invited to attend a levée held by the King at Buckingham Palace in July of the present year. He studied medicine at Trinity College, Dublin, where he graduated as M.B. in 1854, being also admitted F.R.C.S. Irel. in 1855. He received an appointment as surgeon in the East India Company's service in 1856, and was at Delhi on the outbreak of the Mutiny in May, 1857. Narrowly escaping from the massacre of Europeans in that city, he was afterwards attached to Lord Clyde's force which relieved Lucknow. On his retirement from the Indian Medical Service he returned to Ireland, residing sometimes in Dublin but more often at Drimcong, Moycullen, in County Galway, of which county he was a magistrate. The deceased was in his seventy-seventh year. In 1859 he married a daughter of Commissary-General Sir Randolph Routh, and leaves issue. The funeral, which took place in Glasnevin cemetery, Dublin, on July 29th, was largely attended.

## ROBERT SAMUELS ARCHER, M.D. DUB.

THE news of the death of Dr. R. S. Archer of St. Domingo Grove, Liverpool, on August 8th in the fifty-eighth year of his age was received by the deceased's numerous friends with great regret. He had been in failing health for some time but the end came with remarkable suddenness. Dr. Archer received his medical education at Trinity College, Dublin, where he graduated B.A. in 1870, M.Ch. and M.B. in 1872, and M.D. in 1887. He was for many years physician to the Liverpool City Hospital at Priory-road, and for upwards of 16 years medical officer to the northern division of the Liverpool post-office. He was public vaccinator of one of the Everton districts and had a very large experience in the treatment of small-pox, of which he attended over 2000 cases in the epidemics in 1901–02. His evidence before the Royal Commission was the outcome of that experience and proved of great value. He frequently contributed papers to the medical press and one on the treatment of small-pox may be specially mentioned as being of wide import. He also contributed articles on vaccination, of which he had a very large experience. He was instrumental in organising the annual dinner of the Association of Dublin Graduates in Lancashire and Cheshire some years ago, was the honorary general secretary of the Liverpool Medical Institution in 1889, and was also a vice-president of that society. He leaves a widow and one son.

## HENRY MURNEY, M.D. EDIN., M.R.C.S. ENG., J.P.

Dr. Henry Murney, who died suddenly from heart failure, at the advanced age of 82 years, at his residence, Tudor House, Holywood, co. Down, on August 25th, was little known to the present members of the medical profession in Belfast, but at one time he occupied a very prominent position. The deceased, who was a son of the late Henry Murney, J.P., of Belfast, studied in Edinburgh, London, and Dublin, and graduated M D. of Edinburgh about 1849, and he was also M.R.C.S. Eng. Starting practice in Belfast he was demonstrator of anatomy under Dr. Hugh Carlisle, the first professor of anatomy in Queen's College, Belfast, and when the latter died Dr. Murney became a candidate for the chair, when Dr. Peter Redfern was appointed. In 1854 Dr. Murney was elected surgeon to the Belfast General Hospital (now the Royal Victoria Hospital), and for many years—up to 1886, when he resigned—he enjoyed an extensive surgical practice. He was president of the Ulster Medical Society in 1871–72. He was a well-known yachtsman and Freemason and a justice of the peace for Belfast and for county Antrim. Broad-minded and liberal in all his dealings he was held in high esteem by his professional brethren and by the public. His aged sister, with whom he lived (Dr. Murney was unmarried), died on August 25th and the news of her death so affected him that he passed away on the same afternoon.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Eduard Hitzig, who retired from the chair of psychiatry in the University of Halle about 14 years ago, since which time he has been living in retirement. His student days were passed in Berlin and Würzburg. After taking his doctor's degree in 1862 he practised in Berlin until his appointment as professor of mental diseases in Zürich in 1875. He only remained there for about four years, being then offered the chair of psychiatry in the University of Halle, together with the directorate of the lunatic asylum in Nietleben. He immediately set about establishing a university clinic for mental and nervous disease, this being the first clinic of the kind in any Prussian university. After a time a special building was erected for it in accordance with Professor Hitzig's own designs. His researches on the physiology and pathology of the brain are of world-wide reputation.—Dr. William Thomson, formerly professor of ophthalmology in the Jefferson Medical College, Philadelphia.—Dr. William Howard, formerly professor of gynæcology and children's diseases in the University of Maryland, Baltimore.

# Medical News.

Society of Apothecaries of London.—At examinations held in August the following candidates passed in the subjects indicated:—

*Surgery.*—H. W. B. Danaher (Section I.), London Hospital; C. L. Driscoll (Sections I. and II.) Charing Cross Hospital; and B. S. Matthews (Section I.), Royal Free Hospital.

*Medicine.*—T. T. Apsimon (Sections I. and II.), Liverpool; E. V. Connellan (Section II.), Bristol; M. F. Emrys-Jones (Section I.), Cambridge and Manchester; B. S. Matthews (Section I.), Royal Free Hospital; A. F. Reardon (Section II.), St. Thomas's Hospital; and E. E. Wilbe, St. Bartholomew's Hospital.

*Forensic Medicine.*—T. T. Apsimon, Liverpool; M. F. Emrys-Jones, Cambridge and Manchester; B. S. Matthews, Royal Free Hospital; H. W. Phillips, Manchester; M. Rathbone, Royal Free Hospital; E. E. Wilbe, St. Bartholomew's Hospital; and G. F. Wilson, London Hospital.

*Midwifery.*—J. A. Byrne, Manchester; C. L. Driscoll, Charing Cross Hospital; G. W. Hassall, Birmingham; and E. E. Wilbe, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—C. L. Driscoll and E. E. Wilbe.

Foreign University Intelligence.—*Alabama* (*Medical College*): Dr. William Salant of New York has been appointed Assistant Professor of Physiological Chemistry and Pharmacology.—*Bologna:* Dr. Carlo Vignolo-Lutati has been recognised as *privat-docent* of Dermatology and Dr. Ugo Biffi Gentili as *privat-docent* of Experimental Hygiene.—*Budapest:* Dr. Paul Hari has been recognised as *privat-docent* of Pathological Chemistry.—*Chicago* (*Rush Medical College*): Dr. William H. Wilder has been appointed Professor of Ophthalmology in succession to Dr. F. C. Hotz who retires.—*Greifswald:* Dr. Rudolf Haecker has been recognised as *privat docent* of Surgery.—*New Haven* (*College of Physicians and Surgeons*): Dr. F. Huber has been appointed Professor of Medicine and Dr. Peterson Professor of Psychiatry.—*New York* (*College of Physicians and Surgeons*): Dr. Andrew McCosh has been appointed Professor of Surgery.—*Ohio* (*Medical College*): Dr. E. Otis Smith has been appointed Professor of Genito-Urinary Diseases in succession to Dr. Evans who retires.—*Philadelphia* (*Medico-Surgical College*): Dr. Theodore H. Weisenburg has been appointed Professor of Neurology and Psychiatry in succession to the late Dr. W. Pickett.—*Toronto:* Dr. J. P. McMurrick of the Ann Arbor University has been appointed Professor of Anatomy in succession to Dr. Primrose who retires.—*Tübingen:* Dr. Ottfried Müller has been appointed Extraordinary Professor of Medicine in succession to the late Dr. von Jürgensen.—*Vienna:* Dr. C. F. Grosz been recognised as *privat docent* of Dermatology.—*Würzburg:* Dr. Alexander Schmincke has been recognised as *privat-docent* of General Pathology and Pathological Anatomy.

Kingswood (near Bristol) Drainage Scheme.—A Local Government Board inquiry was held at Kingswood on Sept. 4th into the application of the local council to borrow £10,000 for the purpose of the Warmley section of the Kingswood drainage scheme.

Russian Medical Practitioners and the Police.—A notice has been published at Tchernigoff by the governor requiring medical men to notify to the police any cases of wounds from firearms or other weapons that may come under their care, and likewise to furnish the police with the names and addresses of such people as may be accommodating these patients. The penalty for disobedience to these requirements is a fine of £50 or three months' imprisonment.

Manslaughter in an Asylum.—At an inquest held on Sept. 6th respecting the death of an inmate, aged 70 years, of the Wonford Asylum, near Exeter, a verdict of "manslaughter" was returned against another patient of the institution. The patients were dining and whilst the attendant's back was turned the prisoner, it is alleged, inflicted a wound on the cheek of the man with a dinner knife, causing injuries which subsequently proved fatal. It is stated that the two men had dined together for years and always appeared to be on friendly terms.

Medical Magistrate.—Mr. Jerome Eugene O'Sullivan, L.R.C.P., L.R.C.S. Edin., has been placed on the commission of the peace for the city of Liverpool.

Totnes Workhouse Infirmary.—At a meeting of the Totnes (Devon) board of guardians held on August 30th a tender for the erection of the workhouse infirmary for £7164 was accepted.

Diseased Cattle.—The Local Government Board has issued a circular to local authorities stating that it has had under consideration various representations with respect to the sale for human food of diseased cattle and especially of cows suffering from tuberculosis or other wasting disease. The Board understands that it is the practice of some dealers, though aware of the diseased condition of animals coming into their hands, so to dispose of them or of their carcasses, that there is risk that they will be used as food for the poorer classes in London and other large towns. The Board has reason to believe that the practice in question obtains to a considerable extent; and accordingly it is desirous of drawing the attention of local authorities to the matter, in order that they may as far as possible exercise supervision over the cattle in their districts with a view to anticipating, and so averting, possible or intended infringement of the law. With this object the local authority should instruct such of its officers as are engaged in administering the provisions of the Dairies, Cowsheds, and Milkshops Orders, to observe particularly the condition of the cows which come under its notice, and, where any animal is clearly diseased and presumably unfit for food, to take such steps as are practicable to insure that, in the event of the animal being slaughtered, the carcass is disposed of properly. The Board also suggests that the sanitary or other suitable officers of the local authority should be instructed to watch closely the cattle-markets, slaughter-houses, and knackers' yards in the district, with the view of satisfying themselves that no animal, the condition of which appears to render it unfit for human consumption, is disposed of in such a manner that it is likely to be used for this purpose.

## BOOKS, ETC., RECEIVED.

Appleton, Sidney, 25, Bedford-street, Covent Garden, London, W.C.

Modern Clinical Medicine. Diseases of the Digestive System. Edited by Frank Billings, M.D., Professor of Medicine, University of Chicago and Professor of Medicine and Dean of Faculty, Rush Medical College. An Authorized Translation from "Die Deutsche Klinik." under the General Editorial Supervision of Julius L. Salinger, M.D. Price 25*s.* net.

Arrowsmith, J. W., Quay-street, Bristol.

University College, Bristol. Calendar for the Session, 1907–1908. Price not stated.

Baillière, Tindall, and Cox, 8, Henrietta street, Covent Garden, London, W.C.

Nature's Hygiene and Sanitary Chemistry: containing also a Special Account of the Chemical and Hygienic Characters of Eucalyptus, Pine and Camphor Forests, and some Industries connected therewith. By C. T. Kingzett, F.I.C., F.C.S., Past Vice-President, Society of Public Analysts; Hon. Member, Société Française d'Hygiène. Fifth edition. Price 7*s.* 6*d.* net.

Sea-Sickness, its True Cause and Cure. By H. Norman Barnett, F.R.C.S., Surgeon, Cripples' Home, Belfast; late Surgeon, Peninsular and Oriental and Orient Mail Services. Price 1*s.* 6*d.*

Trypanosomes and Trypanosomiases. By A. Laveran, Membre de l'Institut. et de l'Académie de Médecine, Paris; and F. Mesnil, Chef de Laboratoire à l'Institut Pasteur. Translated and much enlarged by David Nabarro, M.D., B.Sc., D.P.H. Lond., M.R.C.P. Lond., Assistant Professor of Pathology and Bacteriology, University College, London; Scientific Assistant in Pathology at the University of London; Royal Society Commissioner for the Study of Sleeping Sickness in Uganda, 1903. Price 21*s.* net.

Brown, A., and Sons, Limited, 5, Farringdon Avenue, London, E.C., and at Hull and York.

Modern Methods for Securing Surgical Asepsis. Notes for Surgeons and Nurses. By Edward Harrison, M.A., M.D., F.R.C.S., Hon. Surgeon, Hull Royal Infirmary. Price not stated.

Griffin, Charles, and Company, Limited, Exeter-street, Strand, London, W.C.

Medical Ethics: A Guide to Professional Conduct. By Robert Saundby, M.D. Edin., Hon. LL.D., McGill; Hon. M.Sc., Birm.; Fellow of the Roy. Coll. of Phys. of Lond.; Member of the General Medical Council; Vice-Pres., late Pres., of the Council of the Brit. Med. Assoc.; Emeritus Sen. Pres., of the Roy. Med. Soc., Fellow of the Roy. Med. and Chir. Soc.; Member of the Pathol. Soc. of London, Professor of Medicine in the University of Birmingham. Second edition, enlarged and rewritten. Price 7s. 6d. net.

A Surgical Handbook: For the Use of Students, Practitioners, House-Surgeons, and Dressers. By Francis M. Caird, M.B., F.R.C.S. Ed., Surgeon, Royal Infirmary, Edinburgh, and Charles W. Cathcart, M.B., F.R.C.S. Eng. and Ed., Surgeon, Royal Infirmary, Edinburgh. Fourteenth edition. Price 8s. 6d.

Hotel and General Advertising Company, Limited, 239–241, Shaftesbury-avenue (Bloomsbury), London.

The Handy Hotel Guide (late "The Tariff Frame Hotel Guide.") Twelfth Edition. Price 2d.

John Bale, Sons, and Danielsson, Limited, London.

Proceedings of the Conference on the Teaching of Hygiene and Temperance in the Universities and Schools of the British Empire, held at the Examination Hall, Victoria Embankment, London, S.W. Chairmen: Lord Strathcona, G.C.M.G., Sir John Cockburn, K.C.M.G., and Sir John Gorst, F.R.S., K.C., M.P. Price 2s. net.

John L. Murray Publishing Co., Trenton, N.J., U.S.A.

Thirtieth Annual Report of the Board of Health of the State of New Jersey, 1906, and Annual Report of the Bureau of Vital Statistics. Price not stated.

Laurie, T. Werner, 13, Clifford's Inn, Fleet-street, London, E.C.

The Russian Peasant. By Howard P. Kennard, M.D. Price 6s. net.

Lehmann, J. F., München.

Alte und Neue Gynaekologie. Herrn Geheimrat Professor Dr. Franz Ritter von Winckel. Zur Feier seines 70. Geburtsfestes überreicht von den Aerzten der Kgl. Gynaekologischen Universitäts-Poliklinik im Reisingerianum zu München. Herausgegeben unter Mitwirkung von Dr. E. Aulhorn, Dr. R. Benndorf, Dr. H. Eltze, Dr. M. Kachel, Dr. Th. Petri, Prof. Dr. Sakurai und Dr. A. Stoecker, von Professor Dr. Gustav Klein, Vorstand der Kgl. Gynaekologischen Universitäts-Poliklinik. Price M.12; geb., M.15.

Lehmann's Medizin. Handatlanten. Band XXXVI. Grundriss und Atlas der Speziellen Chirurgie. Von Prof. Dr. Georg Sultan. I. Teil. Price M.16.

Vorlesungen über Magen- und Darmkrankheiten. Von Hofrat Dr. Friedrich Crämer. 3. Heft. Die Einwirkung der Genussmittel auf den Menschlichen Organismus, speziell auf die Verdauungs-Organe. I. Tabak, Kaffee und Tee und Verdauung. II. Alkohol und Verdauung. Von. Hofrat Dr. Friedrich Crämer. Price M.4.

Lewis, H. K., 136, Gower-street, London, W.C.

A System of Radiography with an Atlas of the Normal. By W. Ironside Bruce, M.D., Physician to the X Ray and Electrical Departments, Charing Cross Hospital, Hon. Radiographer to the Hospital for Sick Children, Great Ormond-street. Price 15s. net.

Nisbet, James and Co., Limited, 22, Berners-street, London, W.

Reminiscences. By George Saunders, C.B., M.D., Dep.-Insp.-Gen. of Hospitals. Price 1s. net.

Rebman, Limited, 129, Shaftesbury-avenue, London, W.C.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett, M.D., Boston, Associate Surgeon to the Children's Hospital, Boston; Surgeon to the Infants' Hospital; Instructor in Orthopedic Surgery, Harvard Medical School. Price not stated.

W. B. Saunders Company, Philadelphia and London.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in the North-western University Medical School (the Chicago Medical College), Chicago, and Frederick Peterson, M.D., President of the State Commission in Lunacy, New York; Clinical Professor of Neurology and Psychiatry, Columbia University; Consulting Alienist, Bellevue Hospital. Fifth edition, thoroughly revised. Price 21s. net.

Surgical Diagnosis. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. Price 28s. net.

Treatment of the Diseases of Children. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Price 21s. net.

A Text-book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia Hospital and to the Medico-Chirurgical Hospital, Philadelphia. Fifth edition, thoroughly revised. Price 15s. net.

Diseases of the Intestines and Peritoneum. By Prof. Dr. Hermann Nothnagel, late Professor of Special Pathology and Therapy, University of Vienna. Edited, with additions, by H. D. Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital, and to the Victoria Hospital for Children, London. Second edition, thoroughly revised. Authorised translation from the German, under the Editorial Supervision of Alfred Stengel, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Price 21s. net.

Practical Fever Nursing. By Edward C. Register, M.D., Professor of the Practice of Medicine in the North Carolina Medical College; Chief Physician to St. Peter's Hospital; Editor of the Charlotte Medical Journal. Price 12s. net.

A Laboratory Manual of Invertebrate Zoölogy. By Gilman A. Drew, Ph.D., Professor of Biology at the University of Maine; in Charge of Zoölogical Instruction at the Marine Biological Laboratory, Woods Holl, Massachusetts. With the Aid of Members of the Zoölogical Staff of Instructors of the Marine Biological Laboratory, Woods Holl, Mass. Price 5s. net.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, A.M., M.D., Professor of Ophthalmology in the University of Colorado; Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. Second edition, thoroughly revised. Price 10s. 6d. net.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason, M.D., LL.D., Clinical Professor of Otology in the Medico Chirurgical College; Aurist to the Medico-Chirurgical Hospital; Surgeon-in-Charge of the Nose, Throat, and Ear Department of the Northern Dispensary; Formerly one of the Laryngologists to the Philadelphia Hospital. Price 12s. net.

A Text-book of Histology, including Microscopic Technic. By A. A. Böhm, M.D., and M. von Davidoff, M.D., of the Anatomical Institute in Munich. Edited, with Extensive Additions to both Text and Illustrations, by G. Carl Huber, M.D., Professor of Histology and Embryology and Director of the Histological Laboratory, University of Michigan. Second edition, thoroughly revised and enlarged. Price 15s. net.

Surgery Publishing Company, 92, William-street, New York, U.S.A.

500 Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary; Editor-in-Chief, American Journal of Surgery, New York; and Eli Moschcowitz, A.B., M.D., Assistant Physician, Mount Sinai Hospital Dispensary; Associate Editor, American Journal of Surgery, New York. Second series. Price $1.00.

Taylor and Francis, Red Lion-court, Fleet-street, London, E.C.

Catalogue of the Specimens illustrating the Osteology and Dentition of Vertebrated Animals, Recent and Extinct, contained in the Museum of the Royal College of Surgeons of England. By William Henry Flower, Conservator of the Museum. Part I. Man: Homo sapiens, Linn. Second edition. Price not stated.

Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England. Vol. III. Second edition. Price not stated.

The Year Book Publishers, Chicago, U.S.A. (G. Gillies and Co. 28, Gibson-street, Hillhead, Glasgow.)

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D. Vol. IV. Gynecology. Edited by Emilius C. Dudley, A.M., M.D., Professor of Gynecology, North Western University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago; and C. von Bachellé, M.S., M.D., Gynecologist to the German Hospital, Chicago. Series 1907. Price 5s. net.

Vol. V. Obstetrics. Edited by Joseph B. De Lee. A.M., M.D., Professor of Obstetrics, North-western University Medical School. With the Collaboration of Henry D. Roehler, M.D., and Herbert M. Stowe, M.D. Series 1907. Price 5s. net.

Treat, E. B. and Co., 241–243, West 23rd-street, New York.

Transactions of the American Pediatric Society. Eighteenth Session. Held at Hotel Traymore, Atlantic City, N.J., May 30, 31, and June 1, 1906. Edited by Linnæus Edford La Fétra, M.D. Volume XVIII. Reprinted from Archives of Pediatrics, 1906–1907. Price not stated.

Wright, John, and Co., Limited, London. (Simpkin, Marshall, Hamilton, Kent, and Co., Limited, London.)

Consumption: Treatment at Home and Rules for Living. By H. Warren Crowe, M.D. Oxon. Price 1s. net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Berry, Joseph Foreman, M.B., Ch.B. St. And., L.R.C.P. & S. Edin., has been appointed Assistant Medical Officer of Health of the County Borough of Wigan.

Bingham, R. G., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Throat Department at St. Thomas's Hospital.

Bristow, W. R., M.R.C.S., L.R.C.P., has been appointed a House Surgeon to Out-Patients at St. Thomas's Hospital.

Burgess, A. S., M.R.C.S., L.R.C.P., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

Carleton, H. H., M.B., B.Ch. Oxon., has been appointed a House Surgeon to Out-Patients at St. Thomas's Hospital.

Cooke, A. I., B.C. Cantab., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital.

Dawes, H. E. T., M.R.C.S., L.R.C.P., has been appointed a House Surgeon to Out-Patients at St. Thomas's Hospital.

Drake, A. W. C., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Throat Department at St. Thomas's Hospital.

Hewett, F. S., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

Huggins, G. M., M.R.C.S., L.R.C.P., has been appointed a Resident House Surgeon at St. Thomas's Hospital.

Jack, W. A. Morton, M.R.C.S., L.R.C.P., has received a Resident Appointment in the Children's Surgical Department at St. Thomas's Hospital.

McWalter, J. C., M.D. Brux., M.A., F.F.P.S. Glasg., D.P.H., Barrister-at-law, has been appointed Examiner in Medical Jurisprudence to the Apothecaries' Hall of Ireland.

Neild, F. M., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed a Resident House Surgeon at St. Thomas's Hospital.

Nightingale, H. J., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed a Resident House Surgeon at St. Thomas's Hospital.

Palmer, F. W. Morton, M.B., B.C. Cantab., has been appointed Ophthalmic Surgeon to the Teignmouth Hospital.

Patey, W., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Ear Department at St. Thomas's Hospital.

Phippen, Harry G., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Medical Officer at the Western Hospital, Fulham, London, S.W.

Sparrow, E. C., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Skin Department at St. Thomas's Hospital.

Todd, R. E., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed a House Surgeon to Out-Patients at St. Thomas's Hospital.

Unwin, H. R., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed a Resident House Surgeon at St. Thomas's Hospital.

Verdon, W. H. G., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Ear Department at St. Thomas's Hospital.

Whitehouse, H. B., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

Windsor, J. F., M.R.C.S., L.R.C.P., has received a Resident Appointment in the Skin Department at St. Thomas's Hospital.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

Birkenhead Borough Hospital.—Junior Resident House Surgeon. Salary £80 and fees.

Birmingham General Hospital.—Two Receiving-room Officers. Salary £150 per annum.

Birmingham, Queen's Hospital.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Brentford Union Workhouse and Schools, Isleworth, W.—Second Assistant Medical Officer, unmarried. Salary £125 per annum, with lunch and tea.

Bridge of Weir.—Assistant Resident Medical Officer (Lady) for Consumption Sanatoria.

Brighton, Royal Alexandra Hospital for Sick Children, Dyke-road.—House Surgeon. Salary at rate of £80 a year, with board, lodging, and washing.

Bristol Royal Infirmary.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

Chelsea Infirmary, Cale-street, S.W.—Second Assistant Medical Officer. Salary £90, rising to £100 a year, with board, apartments, washing, coal, gas, &c.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Pathologist. Salary 100 guineas per annum. Also Two House Physicians for six months. Salary at rate of £50 per annum, with board, washing, and residence. Also Clinical Assistant. Also Locum Tenens House Physician.

Dorchester, Dorset County Hospital.—House Surgeon, unmarried. Salary £100, with board and lodging.

Evelina Hospital for Sick Children, Southwark Bridge-road, S.E.—Clinical Assistants.

Farringdon General Dispensary, 17, Bartlett's Buildings, Holborn Circus, E.C.—Resident Medical Officer. Salary £120 per annum, with apartments, coal, gas, and attendance. Also Honorary Dental Surgeon.

Glasgow University.—Examinerships in Natural Philosophy (salary £70), Chemistry (salary £50), Botany (salary £50), Anatomy (salary £80), Medical Jurisprudence (salary £50), Medicine (salary £80), Surgery (salary £80), and Midwifery (salary £50); with hotel and travelling expenses in each case. Also Junior Assistant in Physiological Department.

Gravesend Hospital.—House Surgeon. Salary £100 per annum, with board and residence.

Great Northern Central Hospital, Holloway.—Senior House Surgeon, Senior House Physician, Two Junior House Surgeons, and One Junior House Physician. Salary of Senior Officers at rate of £60 per annum and of Junior Officers at rate of £30 per annum, with board, lodging, and washing.

Jersey Dispensary.—Resident Medical Officer. Salary £120, with furnished quarters and attendance.

King's Lynn, West Norfolk and Lynn Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Liverpool Infirmary for Children.—Assistant House Surgeon for six months. Salary £30, with board and lodging.

London Lock Hospital and Rescue Home, Harrow-road, W.—Honorary Dental Surgeon.

London Lock Hospital, Dean-street, W.—Anæsthetist.

London Temperance Hospital, Hampstead-road, N.W.—Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing.

Manchester Chorlton Union Workhouse Hospitals, Withington.—Senior Resident Medical Officer. Salary £100 per annum, with rations, apartments, and attendance.

Manchester, Chorlton-upon-Medlock Dispensary.—Honorary Medical Officer.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board, lodging, &c.

Newcastle-upon-Tyne, City Hospital for Infectious Diseases.—Resident Medical Assistant. Salary £104 per annum, with board, lodging, &c.

Newcastle-upon-Tyne, University of Durham College of Medicine.—Demonstrator of Physiology. Salary £200 per annum.

Norwich City Asylum, Hellesdon-next-Norwich.—Resident Medical Superintendent. Salary £400 per annum, rising to £600, with furnished residence, fuel, light, rates, washing, &c.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Royal Dental Hospital, Leicester-square.—Morning House Anæsthetist. Honorarium £50 per annum.

Royal Hospital for Diseases of the Chest, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

Royal London Ophthalmic Hospital, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 a year, with board and residence.

Royal National Orthopædic Hospital.—Honorary Dental Surgeon. Also Honorary Assistant Anæsthetist.

Salford Union Infirmary, Hope, Pendleton.—Resident Medical Officer. Salary £130 per annum, with apartments and attendance.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Clinical Assistants.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Sheffield Union Hospital.—Resident Assistant Medical Officer. Salary £80 per annum, with apartments, rations, and allowances.

Stafford, Staffordshire General Infirmary.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

Throat Hospital, Golden-square, W.—Senior Clinical Assistants.

Tunbridge Wells, General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

Warrington, Lancashire County Asylum, Winwick.—Locum Tenens Medical Officer, unmarried. Salary 4 guineas per week, with apartments, board, attendance, and washing.

## Births, Marriages, and Deaths.

### BIRTHS.

Akers.—On Sept. 7th, at Hove, the wife of W. Dutton Akers, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., of a son.

Corfield.—On Sept. 4th, at Upper Tooting, the wife of Edward Carruthers Corfield, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

Hartigan.—On Sept. 4th, at Gloucester-terrace, Hyde Park, W., the wife of Dr. Thomas Hartigan, of a son.

Lett.—On Sept. 4th, at 48, Queen Anne-street, W., the wife of Hugh Lett, M.B., F.R.C.S., of a daughter.

Macevoy.—On Sept. 11th, 1907, at 41, Buckley-road, Brondesbury, N.W., the wife of H. J. Macevoy, M.D., B.Sc. Lond., of a son.

Naish.—On August 29th, at Upton-on-Severn, the wife of Dr. W. V. Naish, of a daughter.

Nunneley.—On Sept. 2nd, at Elstree, the wife of Frederick Pitcairn Nunneley, M.D., of a daughter.

Routch.—On Sept. 3rd, at Tunbridge Wells, the wife of Dr. Frederick Routch, of a daughter.

Walker.—At 19, Atholl-crescent, Edinburgh, on Sept. 9th, the wife of Dr. Sydney R. Walker, of a son.

### MARRIAGES.

Daniel—Bapty.—On Sept. 5th, at Epsom Parish Church, Alfred Wilson Daniel, M.D., son of the late Dr. W. C. Daniel, of The Silver Birches, Epsom, to Leua Gertrude Lucie Lee Bapty, daughter of Samuel Lee Bapty, of Birmingham.

Gaitskell—Wild.—On Sept. 5th, at St. Margaret's, Westminster, Charles Edward Gaitskell, M.R.C.S., L.R.C.P., to Ethel Linda, daughter of Robert Wild.

Gardner—Warren.—On Sept. 10th, at the Parish Church, Caterham, by the Rev. F. T. Gardner, M.A. (brother of the bridegroom), Rector of Goldhanger, Essex, William Gardner, of Nunney, near Frome, son of the late Thomas Gardner, of Woodcote Manor, Chaddesley Corbett, and Mary Letitia, daughter of the late James Warren, of Capel House, Waltham Cross, and granddaughter of the late John Shepard, of Sylva House, Caterham.

Smith—Hampson.—On Sept. 4th, at St. James's Church, Southport, Dr. Herbert Austen Smith to Constance Hampson, daughter of Mr. and Mrs. Hampson.

### DEATHS.

Clark.—On Sept. 4th, at Dorking, Charles MacKinnon Clark, M.D., L.R.C.P., M.R.C.S., aged 42 years.

Dyson.—On Sept. 3rd, at the Presidency Hospital, Calcutta, Lieutenant-Colonel H. J. Dyson, F.R.C.S., I.M.S., aged 47 years.

Hamilton.—On August 4th, at Melbourne, Victoria, Caroline Ring, beloved wife of Henry Talbot Hamilton, M.B., B.S., and youngest daughter of the late Francis Workman, M.R.C.S., formerly of Reading.

Hirst.—On August 31st, at Westfield-terrace, Chapel-Allerton, Leeds, aged 29, Walter C. Hirst, M.B. Lond.

Holmes.—On Sept. 8th, at Sussex-place, Hyde Park, W., Timothy Holmes, F.R.C.S., aged 82 years.

Logan.—At Ravenswood, South Drive, Harrogate, on Sept. 4th, Thomas Logan, M.D., late of Wibsey, Bradford. Friends will please accept this intimation.

Westcott.—On Sept. 6th, at Whitmead, near Farnham, Edmund William Martyn Westcott, M.R.C.S. and L.R.C.P., late Surgeon to River Nile Steamship *Amasis*.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE USE OF COCAINE IN THE MORPHIA HABIT—A WARNING.

*To the Editors of* THE LANCET.

SIRS,—During the past six months I have had several morphia habitués under my care who, on the advice of medical men, have taken cocaine with a view to curing themselves of the morphia habit. It cannot be too widely recognised that it is not only useless, but in the highest degree dangerous, to prescribe cocaine in these cases; it is true that cocaine does to a certain extent neutralise the effect of morphia, but this, in point of fact, is a disadvantage rather than a gain, as it merely tempts the patient to take larger doses of morphia and then balance the excess with a heavy dose of cocaine.

But the principal danger lies in the fact that such treatment inevitably produces the cocaine habit, by the side of which the morphia habit is comparatively insignificant: uncomplicated chronic morphinism is usually curable, but when patients begin to take cocaine also the difficulties of the situation are increased a hundredfold. Not only is their immediate condition rendered worse by the advent of delusions and hallucinations but their chance of ultimate cure is very much lessened and relapses are much more common than in cases of simple morphinism.

The sudden withdrawal of cocaine leads to no actual distress or reflex disturbances such as occur in the case of morphia, and when once patients know this they are very apt to return to the cocaine, reassuring themselves meanwhile with the idea that they can break it off at any time without acute suffering. In a fairly large experience of morphia cases I have never seen a single cure expedited by the use of cocaine and its dangers are so great as to make its recommendation quite unjustifiable. I am, Sirs, yours faithfully,

Harley-street, W., August, 1907. J. HENRY CHALDECOTT.

## RAPID TRANSPORT IN THE EIGHTEENTH CENTURY.

*To the Editors of* THE LANCET.

SIRS,—It may interest your readers, those in the profession, to feel that with the motor-car they have what was longed for 150 years ago. Let me extract from "Tristram Shandy":—"Because," continued my uncle Toby, "the celebrated sailing chariot which belonged to Prince Maurice, and was of such wonderful contrivance and velocity as to carry half a dozen people 30 German miles in I don't know how few minutes, was invented by Stevinus, the great mathematician and engineer." ...... "But pray, Dr. Slop," quoth my father, "upon what principles was this self-same chariot set a-going?" "Upon very pretty principles, to be sure," replied Dr. Slop, "and I have often wondered why none of our gentry, who live upon large plains like this of ours (especially they whose wives are not past child bearing) attempt nothing of this kind; for it would not only be infinitely expeditious upon sudden calls, to which the sex is subject—if the wind only served—but would be excellent good husbandry to make use of the winds, which cost nothing, and which eat nothing, rather than horses, which (the devil take 'em) both cost and eat a great deal." So we see that Laurence Sterne had prophetic ideas, like as where he writes that he would turn all people who from the country came with their wives and families to London back like vagrants to their legal settlements. Now we are overcrowded, and where and how will it end? I am, Sirs, yours faithfully,

Woodford, Sept. 7th, 1907. EDWIN LITCHFIELD.

## THE JAPANESE BATH.

ACCORDING to a well-written, and equally well-illustrated, paper in the *Journal of the Royal Army Medical Corps* for July by Major K. Bruce Barnett, entitled "Baths and Bathing in Japan," the Japanese, in their persons and houses, are the cleanest people in the world, and every man, woman, and child, of high or low degree, has a daily hot bath. The bathing habit is universal and dates back to the days of mythology, the baths being taken at a temperature which is perfectly astonishing to people who are only acquainted with the tepid water of Europe and America. There are many public baths in Japan, but nearly every private house has one, either in the house itself or adjacent to it. The ordinary bath consists of a large wooden tub, oval in shape, and fitted with a cover. At one end it is traversed by a copper tube in which charcoal can be made to burn, the water in this way being readily raised to the required temperature. Before he enters the tub the bather thoroughly lathers himself from head to foot and washes the suds off by means of a wooden ladle or dipper. He then sits in the tub immersed up to his chin for several minutes, enduring a degree of heat by which a European would be well-nigh parboiled. When first Japan began to study the methods of Western nations the excessive heat of the baths was strongly condemned and a law was made that the water in the public baths should be only moderately heated. This caused great discontent, so a committee composed of European and Japanese medical men was appointed to decide the question. The verdict was in favour of the national custom which was pronounced to be not only harmless but beneficial. The high temperature of the water was said to open the pores of the skin thoroughly, even without the use of soap; and a healthy action of the skin and cleanliness were secured which it was impossible to get with any amount of washing in cold or so-called hot baths. The hotter the water the less chance there was of catching cold, while a very hot bath taken when it was felt that a cold was coming on was the very best method of aborting it. The invigorating effect of a very hot bath after a tedious day's journey in hot or cold weather was wonderful, and very different from the relaxing effect of a tepid bath. It soothed the nerves, eased the tired muscles, promoted appetite, and gave sound sleep. In very cold weather a really hot bath had the effect of preventing the cold being felt for several hours afterwards, while in hot weather it had a distinctly cooling effect.

## A SUGGESTED MEDICAL BADGE.

*To the Editors of* THE LANCET.

SIRS,—The following incident has impressed upon me the desirability of the members of our profession wearing a distinctive badge or other emblem by which we could be recognised as followers of the healing art. At a political gathering at which I happened to be present the other day one of the audience was seized by a fainting fit. Some of the people on the platform signalled to me that my services were required and I was soon by the side of the sufferer. I removed him away from the crowd, unloosened his clothes, and laid him down on the ground. Just as he was beginning to come round a gentleman whom I did not know, evidently also a doctor, made his way to the spot where I was kneeling with my fingers on the pulse of the patient, and without taking the least notice of me commenced to busy himself with a hypodermic syringe case. As the patient was getting better I said to the newcomer that an injection was not necessary, whereupon he brusquely answered me, "You mind your own business." I merely retorted, "Well, it is my business, since I am a doctor and was here before you." This brought an immediate apology from my colleague, who, looking at me more closely, recognised me as a former fellow student of his. We both took the situation calmly and there was no further unpleasantness, the patient meanwhile continuing to improve. But the group of people standing round enjoyed the discomfiture of my friend who made a hasty retreat, so that altogether the scene was one that brought no credit to our profession.

Now I am far from blaming my friend. He did not know that I was also a doctor and was probably nettled at being interfered with by one whom he took to be a layman. But had I in the place of, or in addition to, my conventional silk hat and frock-coat worn a badge or mark such as I suggest the incident would not have occurred. On former occasions when happening to be near an accident and willing to render what aid I could I have had to fight my way through the crowd and to exclaim: "Let me pass, I am a doctor." Once a policeman would not believe me when I offered my services in such circumstances, probably because I wore a lounge jacket and soft hat.

I should imagine this must be a common experience of most medical men and therefore throw out the suggestion that in the absence of a special garb to which there appears to be an objection which I do not share, we should all provide ourselves with a distinctive badge or rosette to be worn regularly or exhibited when the occasion demands it. If there is already such a badge in existence anywhere it would be a great advantage to introduce it universally, on the analogy of the Esperantist badge. I can conceive numerous situations when such a means of mutual recognition would be of the greatest benefit and trust that the matter will be taken up by the medical press of this and other countries. I am, Sirs, yours faithfully,

Manchester, Sept. 9th, 1907. J. DULBERG.

## CEMENTS.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers recommend to me, for the mending of glass measures, a cement that will stand the subsequent wetting of every-day use? I have tried most of the ordinary advertised cements, but none will stand frequent wetting even with cold water. I have seen a cement which set in a few minutes like marble and would stand soaking in hot water. The user of it, a serpentine worker in Cornwall, told me that it was simply plaster of Paris with powdered rosin. I have tried every combination of these two without any success. I have also tried a prescription for plaster of Paris with a solution of rosin in caustic soda, but with equal lack of success. There are so many small breakages of glass vessels in a surgery that a cement such as I have indicated is a great desideratum.

I am, Sirs, yours faithfully,

Bromsgrove, Sept. 10th, 1907. C. KIDD.

⁂ We shall be glad to hear from any of our readers who may have had experience of a cement such as our correspondent requires. In the meantime we would recommend him to try one of the two following: 1. Freshly burned quicklime and casein. The most convenient form of casein is the soluble form known as casumen, which may be obtained from Messrs. Prideaux, of Motcombe, Dorset. Mix the casein with water into a fairly thick cream. Then gradually add the quicklime, which must be freshly burned and in fine powder. Stir all the time until the mixture, which will become hot, gets sticky.

Apply a thin coating to the broken surfaces of the vessel, which surfaces must be scrupulously clean, press them together, and, if possible, keep under pressure for 12 hours. 2. Another good cement for glass is the following: Solution of Russian isinglass. The solution should be of a thin, treacly consistence. Then add a few drops of a 5 per cent. solution of potassium bichromate. Use in the same way as the casein cement.—ED. L.

### SOME QUERIES.

*To the Editors of* THE LANCET.

SIRS,—I shall be much obliged by your inserting the following three inquiries in your columns:—

1. Can any of your readers give any information as regards the "Coppins' Green Sanatorium" near Clacton-on-Sea?

2. Have any of your readers bought a motor-car through the medium of the "Automobile Contract Co.," Conduit-street, W., and if so, what was their experience of their system of deferred payments?

3. What is the experience of any medical owner of the 8 h.p. Rover two seater, 1907 model, as regards reliability, non-stopping, &c.?

I am, Sirs, yours faithfully,

Sept. 8th, 1907. CYMRU.

### THE "MARSHALL" SUSPENDER.

THE form of suspender depicted in the illustration is distinctly a useful one for the athlete or the sufferer from varicocele. The bag does not cut, chafe, or press upon the under side of the scrotum, the whole of the genitals being slung in it in a comfortable manner. In many surgical conditions and for those who go in for hunting or polo playing, for fencing or cycling, the suspender will be found very useful. The manufacturers of the suspender are Messrs. Croyden and Co., Limited, 55, Wigmore-street, Cavendish-square, London, W.

### AGE LIMIT.

*To the Editors of* THE LANCET.

SIRS,—I wish to draw general attention to the increasing fashion of public bodies of various sorts advertising appointments and including a statement that no person over 40 years of age need apply. I think many of your readers will agree with me that this limitation is quite unreasonable and contrary to public policy. Is there to be no refuge but the workhouse for men, probably with wives and families dependent on them, who after obtaining a ripe experience in some special branch of knowledge lose an appointment after the age of 40 years has been reached from circumstances over which they have no control and without any discredit to their honour. Age limit is an intelligible restriction in any case where superannuation pay would be forthcoming in due course, but not otherwise.

Would the councillors admit that they themselves are not doing, or capable of doing, useful work in an up-to-date manner, simply because they are over 40? I think not. Indeed, there are some "youngsters" of *65 years and upwards* on my council who think that all the good work done here is due solely to their efforts.

I am, Sirs, yours faithfully,

Sept. 10th, 1907. NEC SENEX, NEC JUVENIS.

### LOATHSOME BED STUFFING.

*To the Editors of* THE LANCET.

SIRS,—May I draw your attention to the urgent necessity that exists for the establishment of some system of inspection of the places where bedding is made or re-made and cleansed? That such work is sometimes carried out at present under the most insanitary and odious conditions is an undoubted fact, one, indeed, of which I have an ocular demonstration almost daily. My windows overlook the little backyard of an upholsterer's shop in a respectable street in a fashionable quarter of London and there I see bedding "cleaned" in the following manner. The hair, flock, or wool contents of the beds or mattresses are emptied out either on an old door, an inadequate and dirty piece of canvas, or on the bare ground and beaten with rods by a lad or two, the stuff naturally flying hither and thither during the operation. The yard is unpaved, generally wet, always dirty; it is the playground of a family of children of unclean and disgusting habits, and in it are situated the water-closet, which is, I have reason to think, seldom, if ever, cleaned out, and the dust-bin. When the "cleaning" is finished the stray bedding stuff is swept up from the muddy yard and *from out of the closet*—this is the truth—and carried in ready to be packed into its new tick and returned to its blissfully ignorant owner.

The shop itself is quite tidy and clean, its tenant has every appearance of a respectable trustworthy tradesman, and no one who has not had the opportunity of getting a glimpse behind the scenes would suspect the real state of things. I fear that the case I am describing is not unique and the very idea that it is not so is disquieting.

I am, Sirs, yours faithfully,

Sept. 9th, 1907. R. B. K.

### SANATORIUM TREATMENT OF TUBERCULOSIS.

EASTBY Sanatorium for the treatment of tuberculous patients chargeable to the board of guardians of Bradford in Yorkshire was opened in November, 1903, and a summary of the results obtained from that date up to June 30th, 1907, has been prepared by Dr. B. Holroyd Slater, the medical superintendent. The statistics show that 228 patients were admitted, two died, and 198 were discharged. For estimating the results of treatment the patients were divided into three classes—namely, Class A, in which the total extent of disease was not greater than two-thirds of one lobe of one lung; Class B, in which an area not greater than one and a half lobes was involved; and Class C, in which a greater area was involved. Of the patients admitted, 92 (i.e., 40·7 per cent.) belonged to Class A and 87 (i.e., 38·5 per cent.) to Class B; 50 of the former and four of the latter were discharged "provisionally cured." Of the 198 discharges, 151 occurred from six months to over three years ago, and of these patients 51 were last June in good health and full work.

### THE REMOVAL OF POWDER STAINS.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers offer a suggestion in the following case? An officer, as a result of a gunpowder explosion, has the whole of one side of his face marked by powder which is just beneath the skin, giving a freckled appearance. Are there any means of removing these particles or lessening the disfiguring appearance?

I am, Sirs, yours faithfully,

August 16th, 1907. A. F. H.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

---

## Medical Diary for the ensuing Week.

### OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

**THURSDAY** (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's

(2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (21st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. Diseases of the Eye. 2.30 P.M.: Operations. X Rays
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. S. E. Dore: Clinique. (Skin.)

**TUESDAY** (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. E. Squire: Clinique. (Medical.)

**WEDNESDAY** (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. X Rays. Dr. Robinson: Diseases of Women.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. P. L. Daniel: Clinique. (Surgical.)

**THURSDAY** (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. Diseases of the Eye. 2.30 P.M.: Operations. X Rays.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

**FRIDAY** (20th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. W. Stuart-Low: Clinique. (Ear.)

**SATURDAY** (21st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. X Rays. Dr. Robinson: Diseases of Women.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | | | TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 | One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 16 | 3 | Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 2 | Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Sept. 12th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 6 | 30·01 | S.W. | 0·02 | 95 | 71 | 61 | 62 | 62 | Raining |
| " 7 | 30·22 | S.W. | ... | 84 | 68 | 62 | 63 | 65 | Cloudy |
| " 8 | 30·33 | E. | ... | 106 | 72 | 60 | 60 | 62 | Overcast |
| " 9 | 30·46 | E. | ... | 110 | 71 | 56 | 57 | 59 | Overcast |
| " 10 | 30·33 | E. | ... | 113 | 71 | 54 | 55 | 56 | Fine |
| " 11 | 30·24 | E. | ... | 105 | 71 | 48 | 52 | 54 | Fine |
| " 12 | 30·17 | N.E. | ... | 100 | 68 | 54 | 57 | 59 | Fine |

**During the week marked copies of the following newspapers have been received:**—*Catholic Times, Manchester Dispatch, Ross Gazette, Dumfries Courier, Oswestry and Border Counties Advertiser, Liverpool Courier, War Cry, Perthshire Advertiser, Leamington Spa Courier, Greenock Herald, Surrey Advertiser, Belfast Evening Telegraph, Tribune, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Dr. G. R. Allan, Glasgow; Mr. J. P. Atkinson, Lynton; Ardath Tobacco Co., Lond.; Ashton Court Estate, Bristol, Manager of; Argyll Press Bureau, Alexandria, by Glasgow.

**B.**—Dr. A. T. Brand, Driffield; Dr. John Brownlee, Glasgow; Mr. Armin Bücher, Hamburg; Birkenhead Borough Hospital, Hon. Secretary of; Birmingham General Hospital, House Governor of; British Oxygen Co., Lond.; Bombay Municipality, Acting Commissioner of; Mr. T. B. Browne, Lond.; Messrs. H. N. Bathgate and Co., Bristol; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. William Bubb, Cheltenham; Bristol Royal Infirmary, Secretary of; Bury Infirmary, Secretary of; Mr. H. A. Baber, Wellow; Battersea Borough Council, Clerk of; Mr. Oscar Mouat Balthasar, Lond.

**C.**—Mr. Thomas P. Codd, Dublin; Cymru; Lieutenant-Colonel A. M. Crofts, I.M.S., Peshawur; Mr. J. W. Cleveland, St. Albans; Messrs. E. Cook and Co., Lond.; Messrs. Cassell and Co., Lond.; Connaught House, Lond., Secretary of; Messrs. Thos. Cook and Son, Lond.; Messrs. A. H. Cox and Co., Brighton; Dr. Myer Coplans, Lond.; Dr. J. M Chisholm, Liverpool; Messrs. J. and A. Churchill, Lond.; Dr. J. Basil Cook, Lond.; Chelsea Guardians, Clerk of; Central Stationery and Printing Co., Liverpool; Messrs. Cadbury Bros., Bournville; Cripples' Fund Concert Committee, Lond.

**D.**—Dr. William Dow, Glasgow.

**E.**—E. S. W.

**F.**—Mr. G. Fock, Leipzig; Messrs. L. Foster and Sons, York; Mr. William R. Fox, Melbourne; Farringdon General Dispensary, Secretary of.

**G.**—The General Press Cutting Association, Lond., Manager of; Mr. H. R. Gawen Gogay, Southchurch Beach.

**H.**—Dr. C. S. Herrera, Santiago; Dr. R. H. Hodgson, Lond.; Dr. Walter K. Hunter, Glasgow; Mr. Alex. Camphell Henry, Market Lavington; H. E. T.; Messrs. Holman and Foxcroft, Lond.; Dr. R. S. Hindmarch, Newcastle-on-Tyne.

**I.**—Messrs. Ingram and Royle, Lond.; Iota.

**J.**—Dr. A. H. James, St. Buryan; Dr. R. Llewelyn Jones, Bath; Dr. W. M. M. Jackson, Driffield.

**K.**—Mr. Augustine C. Keane, Lond.; Messrs. C. Knight and Co., Lond.; Messrs. R. A. Knight and Co., Lond.

**L.**—Dr. E. Graham Little, Lond.; Dr. H. A. Lediard, Carlisle; Mr. Edwin Litchfield, Woodford; Mr. E. Lightowless, Harrogate; The Third London Medical Exhibition, Secretary of.

**M.**—Dr. James Miller, Glasgow; Dr. T. J. McHattie, Lond.; Messrs. Miller and Sons, Lond.; M. N.; Manchester Northern Hospital, Secretary of; Messrs. J. Menzies and Co., Edinburgh; Mr. T. M. Miller, Cape Town; Dr. K. Mackinnon, Guelph; Dr. J. McGregor, Bridgend; Mr. F. H. Moore, Prees; Dr. T. McCririck, Halifax; Manchester Guardians, Clerk to the; Messrs. Maple and Co., Lond.

**N.**—"Nec Senex, nec Juvenis"; Norwich Corporation, Clerk to the; Dr. M. Nierenstein, Liverpool; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.

**O.**—Mr. C. A P. Oshurne, Cork; Mrs. Oakley, Uppingham.

**P.**—Mr. Y. J. Pentland, Edinburgh; Messrs. Peek, Frean, and Co., Lond.; Captain W. S. Patton, I.M.S., Madras; Messrs. Peacock and Hadley, Lond.

**R.**—Dr. P. M. Reid, Blackpool; Mr. Henry Rundle, Southsea; Royal National Orthopædic Hospital, Lond., Secretary of; Mr. W. V. Rohinson, Chalfont St. Peter; R. B. K.; Mr. C. E. Russell Rendle, Plymouth; Royal Photographic Society of Great Britain, Lond.; Dr. George Reid, Lond., Messrs. Ryder and Bowyer, Southampton.

**S.**—Dr. Samuel Sloan, Glasgow; Dr. T. Claye Shaw, Lond.; Mr. H Sewill, Lond.; Messrs. J. Sumner and Co., Birmingham; Swift Motor Cycles, Coventry; Salford Union, Clerk to the; Mr. J. O Summerhayes, Quetta; S., Lond.; Messsr. W. H. Smith and Son, Stafford; Sheffield Royal Infirmary, Secretary of; Sheffield Union, Clerk to the; *South Wales Argus*, Newport; Messrs. Savory and Moore, Lond.; Mr. C. Shellshear, Lond.; St. George's Hospital Medical School, Lond., Dean of; Dr. R. Smyth, Ramsgate; Dr. David Sommerville, Lond.; Scholastic, Clerical, &c., Association, Lond.; Stockport Infirmary, Secretary of.

**T.**—Mr. J. B. Tindall, Preston; Tunbridge Wells General Hospital, Secretary of; Mr. F. Thomas, Lond.; "Tuberculose" (Boletim da Assistencia Nacional aos Tuberculosos), Lisbon, Director of.

**W.**—Dr. A. J. Whiting, Lond.; Messrs. J. Wright and Co., Bristol; W. B.; W. F. E.; Dr. A. Watson, Lethbridge, Canada; Mr. Ernest L. Walford, Lond.; Messrs. H. Wilson and Son, Lond.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Dr. J. H. Abram, Liverpool; Dr. J. Allen, Chislehurst; Ashwood House, Kingswinford, Medical Superintendent of; Messrs. Allen and Hanburys, Lond.; A. O.; A. W. B., Lond.; A. H. T.; A. J.; Dr. J. H. Ashworth, Halstead.

**B.**—Mr. H. S Bennett, Durban; Mr. J. S. Beveridge, Milnathort; Messrs Baker Bros., Lond.; Dr. A. M. Buchanan, Glasgow; Dr. F. Bryan, Earls Colne; Dr. E. C. Baber, Lond.; Messrs. Buchner, Schacht, and Co., Lond.; Mr. H. J. D. Birkett, Southsea.

**C.**—Mrs. Craig, Inverkeithing; Mr. D. Chand, Jammoo, India; Mr. E. Chaffers, Grange-over-Sands; Canterbury Borough Asylum, Clerk to the; Mr. A. W. S. Curties, Burwash.

**D.**—Mr. T. Dixon, Lond.; Messrs. Dickeson and Stewart, Lond.

**E.**—Dr. F. C. Eve, Hull; E. C. M. D.

**F.**—Mr. E. Fiechter, Liverpool; Mr. T. R. Freeman, Bath; F. W. E. H.; F. A.; F. A. F.; Mr. F. T. Fagge, Upholland.

**G.**—Dr. L. P. Gomes, Bombay; Dr. J. Gordon-Munn, Norwich; Dr. J. H. Griffiths, Woolwich; Grimsby, &c., Hospital, Secretary of; G. H.; G. H. T. F.

**H.**—Dr. D. Henderson, Llandebie; Mr. F. E. Heubeck, Cwmaman; Mr. S. Honeywill, Bildeston; Mr. D. Hirst, Chapel Allerton; Messrs. J. Haddon and Co., Lond.; Huddersfield Infirmary, Secretary of; H. D.

**I.**—Mr. J. Illingworth, Gourock.

**J.**—Mr. H. Jackson, Liverpool; Mr. W. Judd, Lond.; J. E. E.; J. K.; J. M. G.

**K.**—Dr. A. Kershaw, Farnworth; Mr. A. G. S. Keyworth, Wem; K. F. G.

**L.**—Dr. A. J. Laird, Crewe; London Throat Hospital, Secretary of; Mr. H. Lett, Lond.; Liverpool Hospital for Consumption, Secretary of; Mr. R. H. Lucas, Bury St. Edmunds; Dr. H. J. Macevoy, Lond.

**M.**—Mr. R. McCowen, Tralee; Mr. W. G. R. Macaulay, Lond.; Dr. D. M. Macrae, Philippolis, Orange River Colony; Medical Supply Association, Edinburgh; Major R. H. Maddox, I.M.S., Alverstoke; Mr. G. S. Menzies, Hucknall Torkard; Medicus, Harrogate; Mr. J. M. Munro, Edinburgh.

**N.**—Mr. A. W. Nuthall, Birmingham; Northampton General Hospital, Secretary of; N. M. A.; North-East London Post-Graduate College, Tottenham.

**O.**—Miss E. Oliver, St. Columb Road.

**P.**—Professor Pye, Clifden; Miss Pearse, Lond.; Paisley Parish Council, Clerk of; Dr. P. H. Power, Vancouver, British Columbia.

**R.**—Mr. W. Ramsay, Melbourne; Dr. A. Richmond, Liverpool; Mr. C. A. Ryde, Brussels; R., Finsbury Park; R. W. L.; R. N. G.

**S.**—Mr. P. Spark, Worthing; Messrs. T. G. Scott and Son, Lond.; S., Ennismore-gardens; Surgeon, Chiswick; S. D. S.; Messrs. Sykes, Josephine, and Co., Lond.; Mr. C. St. Aubyn-Farrer, Lond.; Mr. H. Lionel Smith, Slaidhurn; Mr. H. F. Stephens, St. Austell; Smith's Advertising Agency, Lond.

**T.**—Dr. G. C. Trotter, Paisley; Mr. J. A. Topham, Canterbury; Mr. W. A. F. Twemlow, Flint; Mr. W. E. Tarhet, Mevagissey.

**W.**—Dr. W. W. Westcott, Lond.; West Norfolk Hospital, King's Lynn, Secretary of; W. B. K.

---

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | |
|---|---|
| One Year ... ... ... | £1 12 6 |
| Six Months ... ... ... | 0 16 3 |
| Three Months ... ... | 0 8 2 |

| TO THE COLONIES AND ABROAD. | |
|---|---|
| One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.

# An Address

ON

# THE OPERATION OF GASTRO-JEJUNOSTOMY AND ITS PHYSIOLOGICAL EFFECTS.

*Delivered at the Annual Meeting of the American Medical Association at Atlantic City, U.S.A., on June 5th, 1907,*

BY HERBERT J. PATERSON, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON, LONDON TEMPERANCE HOSPITAL; LATE HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MR. PRESIDENT AND GENTLEMEN,—When your distinguished President of last year conveyed to me a cordial invitation to be present at this meeting of the American Medical Association I accepted at once, thinking of the opportunity which I should have of seeing for myself and profiting from the work of the many in your country whose fame has spread across the sea. When, however, I came to seek for a subject on which to address you I realised the rashness of my ready compliance. So much work has been done here on that branch of surgery in which I am especially interested that I felt that were I to dwell on any purely surgical aspect of gastric disease I should be going over ground already familiar to you and so should be trespassing too far on that indulgence and leniency which I have heard you so invariably extend to those who are your guests.

In my Hunterian lectures delivered before the Royal College of Surgeons of England last year I gave the results of some investigations into the effect of the operation of gastro-jejunostomy on the metabolism of the human body. After some consideration I determined to pursue those investigations further and to lay the results before this meeting. When, as was the case but a few years back, the operation of gastro-jejunostomy was performed only as a last resort in cases of pyloric stenosis, physiological questions were a secondary consideration, but at the present time when the operation is frequently advised for conditions such as intractable gastric ulcer, in which it is an operation of expediency rather than of necessity, a knowledge of its precise effects on the gastric and metabolic functions of the body must be one of the determining factors in the decision for or against operation. It is on this aspect of gastro-jejunostomy that I propose to offer some observations for your consideration to-day.

## I. THE EFFECT OF GASTRO-JEJUNOSTOMY ON THE FUNCTIONS OF THE STOMACH.

1. *The presence of bile in the stomach.*—All observers are agreed that a certain amount of bile finds its way into the stomach after the operation of gastro-jejunostomy. It is said that the quantity is at first fairly abundant but after a few weeks considerably less. In my own experience it is rare to find bile in the fasting stomach, and I regard its presence under such conditions as evidence of inefficiency of the efferent opening. The fluid drawn off one hour after a test breakfast often appears to contain bile, but Gmelin's test usually gives a negative result. If the gastric contents be tested two hours after a test meal Gmelin's test is frequently obtainable. I use the expression obtainable advisedly, for considerable care is often requisite to demonstrate the presence of bile, although from the appearance of the gastric contents one would judge that it is present in some quantity. Indeed, I believe that the amount of bile which regurgitates into the stomach is considerably overestimated. Gmelin's test does not give a positive reaction unless bile be present to the extent of about 5 per cent. and the green colour of the test is, as a rule, only just visible, and sometimes cannot be seen at all. It is probable, therefore, that the regurgitated bile forms not more than 5 or 6 per cent. of the stomach contents. I need hardly point out that if bile gains entrance into the stomach pancreatic secretion must do so as well. Granted, then, that there is a permanent reflux of bile into the stomach after gastro-jejunostomy the question arises, Is its presence harmful? All the evidence indicates that it is not, provided the efferent opening of the anastomosis is efficient. Dastre and Massé have shown that in dogs the presence of bile in the stomach does not interfere with the digestion and general health. The well-known case reported by Moynihan as well as the results of the operation of cholecysto-gastrostomy in man confirm these observations, while the metabolism experiments to which I will refer later afford further evidence to the same effect. Indeed, I think we may safely affirm that in part at least the beneficial effects of gastro jejunostomy on gastric ulcer are due to the entrance of the alkaline pancreatic juice and bile into the stomach.

2. *The effect of gastro jejunostomy on the gastric secretion.*—The most marked effect of gastro-jejunostomy is the diminution of the total acidity of the gastric contents which follows operation. At first sight it would appear that this diminution is but the result of partial neutralisation of the gastric contents by the bile and pancreatic juice which gain entrance into the stomach. But the problem is not such a simple one. The time at my disposal will not permit me to describe in detail the observations which I have made on this interesting subject, so I will briefly indicate what appear to me to be the chief factors at work. From an examination of a considerable number of cases I find that the average diminution of the total acidity after gastro-jejunostomy is about 35 per cent. There are several reasons which appear to me to indicate that this diminution is not due solely to partial neutralisation. First, judging by the amount of bile usually found in the stomach, the diminution is too great to be the result of a purely chemical reaction. Secondly, if the diminution were the result of a chemical reaction, we should expect all the free hydrochloric acid to be neutralised, but this is not invariably the case. In several cases I have found free hydrochloric acid present, and in those cases in which it has been present before operation it can usually be demonstrated after operation by giving a suitable test meal, such as Leube's. Thirdly, there is a diminution of the total chlorides in the gastric contents which must be the result, not of neutralisation, but of diminished secretion.

Two factors at least, therefore, appear to be at work in bringing about the diminution of total acidity which is found after gastro-jejunostomy: (1) a diminution of the total chlorides secreted; and (2) partial neutralisation of the gastric contents by bile and pancreatic juice. The brilliant researches of Pawlow and his co-workers have demonstrated the striking interdependence of the secretions of the digestive glands, and it is this interdependence which seems to me to afford us a reasonable explanation of the diminution of chlorides. We may, I think, safely assume that during the churning movements of the stomach some of the gastric juice will be, as it were, squeezed through the anastomotic opening. This escape of some of the acid will prevent the total acidity rising as high as would otherwise be the case. But it will have a further effect. The presence of an acid fluid in the jejunum causes a secretion of pancreatic juice (Wertheimer). Thus, after gastro-jejunostomy, if my hypothesis be correct, the early presence of acid in the jejunum will lead to a flow of pancreatic juice at an earlier period of digestion than in a normal individual. With this earlier stimulation of the pancreas there will be a correspondingly earlier diminution of the gastric secretion, and as a consequence of this, a diminution in the total chlorides secreted by the gastric mucous membrane. Possibly other factors are at work, such as an inhibitory effect of secretin or other constituent of the pancreatic juice, while in those cases in which there has been hyperacidity before operation the removal of the abnormal excitation of the gastric mucosa which results from spasmodic stenosis of the pylorus will lead to a considerable diminution of the total chlorides, and it is certainly significant that it is just in these cases of gastric ulcer with hyperacidity that the diminution of the total acidity of the gastric contents is most marked.

3. *The effect of gastro jejunostomy on gastric digestion.*—Some authorities maintain that gastric digestion is lost after gastro-jejunostomy. Even if this were true it is not of such importance as would at first sight appear, for we know from the experiments of Fachon and Carvalho on dogs, from the observations made on Schlatter's celebrated case of total gastrectomy, as well as from the clinical evidence afforded by those patients who have survived complete removal of the stomach, that Nature is able to dispense with this organ. There is, perhaps, nothing more wonderful in the whole range of surgery than that human beings should not only survive the operation of total gastrectomy but should remain for years in the enjoyment of perfect health and activity. I need hardly remind you that the first surgeon to

conceive and carry out this daring project was one of your own countrymen.

Notwithstanding, however, Nature's adaptability the retention of gastric digestion undoubtedly adds to the resisting power of the individual in the struggle for existence. Personally I do not believe that loss of gastric digestion is a necessary consequence of a short circuit between the stomach and jejunum. Those who have expressed an opposite view base their conclusions on the subsequent diminution of chlorides found in the gastric contents. This argument is not conclusive, as the chlorides may be greatly diminished without the loss of gastric digestion. Further, unless atrophy of the mucous membrane is advanced owing to disease existing before operation, there is in my experience usually a progressive increase in the chlorides secreted during the digestion of a test meal. A more reliable indication of the extent of gastric digestion can be gained from an examination of the fæces. Schmidt has shown that only the gastric juice can digest *raw* connective tissue. I have on many occasions fed patients after gastro-jejunostomy on raw beef, but have never found any undigested connective tissue on microscopical examination of the fæces.

4. *The effect of gastro-jejunostomy on the motility of the stomach.*—Impairment of the motility of the stomach is a much more serious matter than impairment of its secretion, for it appears that the stomach, if its peptic power be reduced, endeavours to make up for the failure of digestive power by greater energy in moving on its contents. In these circumstances the food leaves the stomach incompletely digested, but this does not seem of serious import, for von Noorden maintains that the intestine can vicariously assume the peptic functions of the stomach. I have already pointed out that after gastro-jejunostomy some diminution of the gastric secretion occurs; if then it were the case that gastro-jejunostomy in addition impairs the motility of the stomach the usefulness of the operation would be considerably curtailed. Diverse views have been expressed on this subject. Hartmann and Soupault, Rydygier, and Rosenheim found the motility of the stomach permanently impaired; Carle and Fantino, on the other hand, maintain that the emptying of the stomach is hastened rather than retarded. It is, I think, possible that in such investigations the existence of impaired motility *before* operation has not always been excluded. Although motor insufficiency be present after operation, we cannot assume that the insufficiency is due to operation, unless we have shown the stomach to have been normal in this respect before operation.

I have now investigated the motility of the stomach before and after gastro-jejunostomy in a considerable number of cases, but I will now refer only to three typical examples. The first of these was a woman upon whom I performed gastro-jejunostomy for repeated attacks of hæmorrhage from a gastric ulcer. Examination before operation showed that on an average the stomach was empty three and a half hours after a test breakfast. Two months after operation a number of observations showed that the stomach was empty four hours after a similar test meal. You will observe that although the motility was slightly impaired by operation, the delay in evacuation did not exceed the physiological limits. This case raises the question, How does gastro-jejunostomy influence those cases of gastric ulcer in which the motility of the stomach is not impaired? I will return to this point later.

The second observation was carried out on a patient upon whom I performed gastro-jejunostomy for gastric tetany, with almost complete pyloric stenosis and greatly impaired motility. Two years after operation examination showed the stomach to be empty on two occasions four hours after a test breakfast, and on another occasion four hours after a full dinner only 25 cubic centimetres of fluid containing a trace of bile were drawn off.

Observations on a third patient showed that before operation 20 cubic centimetres of fluid remained in the stomach four hours after a test breakfast. One month after operation, at which a chronic gastric ulcer with dense adhesions to the abdominal wall was found at the cardiac end of the stomach, examination showed that on one occasion 15 cubic centimetres, and on another occasion five cubic centimetres of slightly green tenacious fluid, showing a faint Gmelin's reaction, remained in the stomach three and a half hours after a test breakfast.

From these and numerous other observations I think that we may conclude that, in those cases in which the motility is markedly impaired by pyloric stenosis or by adhesions, the operation of gastro-jejunostomy usually results in a marked improvement in the evacuation of the stomach contents. In those cases, on the other hand, in which before operation the motility is unimpaired, gastro-jejunostomy may either slightly retard or slightly hasten evacuation, but inasmuch as this retardation or acceleration falls within physiological limits, we are justified in saying that in cases in which the motility is normal before operation the evacuation of the stomach is for practical purposes unchanged by gastro-jejunostomy.

*Is gastro-jejunostomy a drainage operation?*—The observations on the motility of the stomach which have already been mentioned are against the view that gastro-jejunostomy is a drainage operation, and W. B. Cannon and J. B. Blake in their most invaluable article also put forward strong arguments against such a supposition. These writers too, from observations on dogs by means of the Roentgen rays, have come to the conclusion that in cases in which the pylorus is unobstructed the food continues to pass through the pylorus rather than through the new opening. Are we justified in assuming that this holds good for a human being if the anastomotic opening is made of large size? It is at least suggestive that in the only case in Cannon and Blake's series in which the food passed out through the anastomotic opening rather than through the pylorus the opening which had been made was a large one. This observation appears to me to be a most important one. It emphasises the necessity for a large anastomotic opening, which is in my judgment the most important point in the technique of gastro-jejunostomy.

*To what are the beneficial effects of gastro-jejunostomy on gastric ulcer due?*—Most writers have assumed that gastro-jejunostomy is a drainage operation and have attributed the beneficial effects of the operation on gastric ulcer to hastened evacuation of the stomach. If this be true it follows that in those cases of gastric ulcer in which motility of the stomach is normal the operation of gastro-jejunostomy would be of little or no avail. This has not been my experience. I have already told you of a case in which the motility was slightly impaired after operation. Notwithstanding this impairment the patient rapidly improved, lost all her gastric symptoms, and has remained ever since in excellent health. Indeed, some of the most striking successes I have witnessed have been in cases in which before operation there was no evidence of delayed evacuation of the stomach. We must, therefore, I think, look for some other factor than drainage to explain the influence of gastro-jejunostomy on gastric ulcer. There is a general agreement that hyperacidity is the factor which prevents healing of a gastric ulcer. After gastro-jejunostomy there is a marked diminution of the total acidity of the gastric contents, which diminution does not depend on improved evacuation. Are we not justified in assuming that it is to this diminution of the gastric acidity that the beneficial effects of gastro-jejunostomy on gastric ulcer are due?

## II. THE EFFECT OF GASTRO-JEJUNOSTOMY ON THE METABOLISM OF THE HUMAN BODY.

In the year 1897 Jöslin published observations on the metabolism of two patients upon whom gastro-jejunostomy had been performed. He maintained that as the result of this operation there is a marked diminution of the proportion of nitrogen absorbed from the food and an even more marked diminution in the fat absorption. These conclusions have been accepted without question. In my book on Gastric Surgery published last year I gave details of observations on four patients in whom the absorption of fat and nitrogen was practically unaffected. There are still writers who dilate on the evil consequences of this operation and of the interference with the physiology of digestion which it entails. Two years ago a distinguished surgeon wrote: "It is improbable that so much interference with the anatomy and physiology of digestion as this operation involves can be tolerated without some ill effects." As recently as six months ago another writer remarked: "The interference with the physiology of digestion which such an operation entails is not well tolerated." He then pointed out the necessity for the existence of the acid medium of the stomach with its pepsin for the digestion of the fat cells and starch granules. I have already pointed out to you the evidence that connective tissue digestion continues after gastro-jejunostomy and I will now endeavour to prove to you from the further observations which I have made that these hypotheses about interference with the nutrition of the body are unsupported by chemical pathology or clinical experience. Indeed, it was the remarkable evidence I obtained in investigating the remote history of a large number of patients upon whom gastro-jejunostomy had been performed which led me to doubt the accuracy of Joslin's conclusions and to test their correctness by the touchstone of direct experiment.

My first observation was carried out on a man, aged 26 years, five months after I had performed anterior gastro-jejunostomy for gastric ulcer. During the four days which the observation lasted the patient absorbed 91 per cent. of the nitrogen taken in his food and 92·3 per cent. of the fat. Now in a series of metabolism experiments on 75 apparently healthy individuals on a mixed diet, Harley and Goodbody found that the highest nitrogen absorption amounted to 97·07 per cent. and the lowest to 90·1 per cent. of the nitrogen taken in the food, the average absorption being 93·46 per cent. of the nitrogen taken in the food. As regards fats, Harley and Goodbody found that the highest absorption amounted to 98·5 per cent. and the lowest to 90·19 per cent. of the fat taken in the food, the average absorption of 79 observations being 95·05 per cent. If you will compare the results of my observations after gastro-jejunostomy you will see that the nitrogen absorption is 2·4 only below the average and the fat absorption 2·7 below the average, and both nitrogen and fat absorption are higher than the lowest absorption found in a healthy individual. My second observation, also on a mixed diet, seven months after gastro-jejunostomy and suture of a perforated gastric ulcer, showed a nitrogen absorption of 90·5 per cent. and a fat absorption of 92·5 per cent. Comparing these figures with those which I have quoted from Harley and Goodbody you will observe that the nitrogen absorption is 2·9 and the fat absorption 2·5 below the average, but both nitrogen and fat absorption are above the lowest percentages found in healthy individuals. My third observation was likewise made on a mixed diet on a patient two years after gastro-jejunostomy for gastric tetany, and I may mention for the interest of those who regard the functions of the duodenum with reverence, that there existed complete obstruction of the pylorus, so that the food could pass only through the anastomotic opening. During four days on a liberal mixed diet (40 calories for each kilogramme body weight) the patient absorbed 92·1 per cent. of the nitrogen taken in the food and 92·7 per cent. of the fat. In other words, the nitrogen absorption was 1·3 and the fat absorption 2·3 below the average, both nitrogen and fat absorption being above the lowest absorption found in healthy individuals. My fourth observation was carried out on a milk diet on a patient two months after gastro-jejunostomy for gastric ulcer. The nitrogen absorption amounted to 92·7 per cent. of the nitrogen in the milk taken and the fat absorption 94·7 per cent. Compared with the average absorption of a healthy person on a milk diet, these figures show a diminished nitrogen absorption of 1·5, and a diminished fat absorption of 1·4, both nitrogen and fat absorption being higher than the lowest percentage absorption found in a normal individual. My fifth observation was made on a mixed diet on a patient one month after gastro-jejunostomy for pyloric stenosis. In this instance 92·4 per cent. of the nitrogen and 93·5 per cent. of the fat taken in the food was absorbed, the figures being respectively 1·0 and 1·5 below the average, but both well above the lowest normal absorption.

The preceding observations were made on patients on whom anterior gastro-jejunostomy had been performed; the remaining four observations were carried out on patients upon whom I had performed the posterior no-loop method. The sixth observation was carried out on a milk diet one month after gastro-jejunostomy for gastric ulcer. The nitrogen absorption was 91·2 per cent. and the fat absorption 92·3 per cent. of the fat taken in the food—that is, the nitrogen absorption was 3·0 and the fat absorption 3·8 below the average. The seventh observation was made, also on a milk diet, on a patient upon whom I had performed gastro-jejunostomy for duodenal ulcer with partial stenosis. The nitrogen absorption was 92·2 per cent. and the fat absorption 95·4 per cent.—that is, the nitrogen absorption was 2·0 and the fat absorption 0·7 below the average absorption on a milk diet in a healthy individual. My eighth observation was made on a patient upon whom I had performed gastro-jejunostomy for gastric ulcer. The patient was placed on a milk diet and the observation lasted seven days. During this period the man absorbed 93·5 per cent. of the nitrogen, and 94·1 per cent. of the fat taken in the food. In this case the nitrogen absorption was 0·9, and the fat absorption 0·9 below the average. My ninth observation was made on a milk diet on a patient 24 days after gastro-jejunostomy for gastric ulcer. In this patient 92·4 per cent. of the nitrogen and 96·8 per cent. of the fat taken in the food were absorbed; a diminution of 1·8 in the case of the nitrogen, and in the case of the fat an increase of 0·7 above the average.

Taking the whole series of nine observations the average diminution of nitrogen absorption is 1·7 and the average diminution of fat absorption is 1·9, while in every instance the variation is within the limits found in individuals who are in good health. It may be urged that in those cases of this series in which there was no pyloric stenosis, the food passed out through the pylorus rather than through the anastomotic opening. If this be true, although I am not prepared to admit it, it does not affect the conclusions to be drawn from the observations. We know clinically that gastro-jejunostomy has a very beneficial effect on gastric ulcer. This effect is probably due to the diminution of the acidity of the gastric contents which the operation brings about. Which route is taken by the food is a matter of academic interest, as it does not affect the therapeutic value of the operation. The important point is that the short circuit does not appreciably affect the metabolism, whether the pylorus be patent or not, for you will observe that in those patients who have marked pyloric stenosis the absorption after operation is as good as in those in whom the pylorus is patent.

It is interesting to look back and observe how incomplete knowledge leads to the formation of erroneous hypotheses and how as knowledge progresses facts apparently irreconcileable become reconcileable. Pawlow showed that the injection of acid into the duodenum causes a flow of pancreatic juice and that the acid chyme passing through the pylorus acts in the duodenum as the normal stimulus of the pancreatic gland. Since after gastro-jejunostomy the food passes directly into the jejunum, it was urged that after this operation the normal stimulus of the pancreas is absent, with the result that there is a diminished flow of pancreatic juice and consequently a serious impairment of fat absorption. Now Wertheimer has shown that the flow of pancreatic juice can be excited by the introduction of acid into the jejunum, and more recently Bayliss and Starling have demonstrated that the stimulus is not a reflex one but due to a substance which they call secretin, which is conveyed to the pancreatic gland through the blood stream. Therefore, both the hypotheses as to diminished fat absorption and as to the cause of this supposed diminution are now shown to be erroneous. The physiological and chemico-physiological facts as we know them agree, for I hope that I have been able to prove that the digestion and metabolism of the human body are practically unaffected by the operation of gastro-jejunostomy, while the researches of Wertheimer and Bayliss and Starling tell us why the alteration of the route taken by the chyme does not prevent adequate stimulation of the pancreatic gland. Is it not a striking example of the wonderful power which Nature possesses of adapting herself to the altered conditions brought about by surgical intervention?

These chemico-pathological observations are supported by the evidence of clinical experience. May I remind you of one striking fact? As I have pointed out elsewhere, there are at the present time children alive and in perfect health upon whom this operation was performed in early infancy. It is inconceivable that they would have lived for six or seven years and developed into strong healthy children had the operation the harmful effects which have been attributed to it. Lastly, let me say this. Just because gastro-jejunostomy is not in itself harmful there is a danger that we may be tempted to resort to it in doubtful cases in the hope that good may come. Great as is my respect for gastro-jejunostomy, I am no advocate of such a course. To operate for subjective symptoms in the absence of definite clinical and chemical signs is to say the least unscientific. Above all, we must guard against the failure and discredit which result from operation on neurasthenics and on those patients who, as Dr. W. J. Mayo so pithily puts it, "have had their moveable organs fixed, and their removeable ones removed." Such persons as we all know, are often only too ready to tempt fortune further at the shrine of surgery. Neither gastro-jejunostomy nor any other surgical procedure short of the removal of the higher centres of their brains will cure such of their ills.

To sum up, we are, I think, justified in drawing the following conclusions as to the physiological effects of gastro-jejunostomy :—1. A certain amount of bile and pancreatic juice enters the stomach after gastro-jejunostomy but the amount is small and has no injurious effect. 2. The acidity of the gastric contents is markedly diminished, usually about 30 or 35 per cent. This is due, partly to a diminution of the total chlorides secreted, partly to the partial or complete neutralisation of the free hydrochloric acid by the alkaline bile and pancreatic juice, and probably also to earlier stimulation of the pancreatic secretion, and compensatory earlier fall of the gastric secretion. In gastric ulcer cases the removal of spasmodic stenosis of the pylorus likewise tends to diminish the total acidity. 3. Gastric digestion is impaired but not lost after gastro-jejunostomy. 4. The motility of the stomach, if normal before operation, is for practical purposes unaffected. Gastro-jejunostomy is therefore not a drainage operation. Its beneficial effects on gastric ulcer are due to the diminution of the acidity of the gastric contents. 5. Gastro-jejunostomy has no material effect on the metabolism of the human body, the percentage of nitrogen and fat absorbed being within the limits observed in individuals who are apparently healthy. This chemico-pathological evidence is supported by the evidence of clinical experience.

The technique and statistics of gastro-jejunostomy I do not propose to discuss. They have been recently fully dealt with in addresses delivered before this association. If you will allow, I should, however, like to bring to your notice two time-saving devices which I have found of great value. The first is this set of suture reels. Each reel is of a different length so that each size of silk or thread can be wound on a different sized reel; thus the surgeon is able to see at a glance without examination of the suture material which size of ligature he requires during the course of the operation. The other device is this pattern of needle, which may be called a "grip eyed" needle. It is designed to obviate the inconvenience and delay caused by the accidental unthreading of needles during suturing, and is especially adapted for continuous suturing. By pulling the suture firmly into the extremity of the eye furthest from the point the thread is firmly gripped so that it cannot slip out.

In conclusion, it is my pleasant duty to thank you one and all most cordially for the honour you have done me in inviting me to address this meeting of your association. Conscious as I am of the fragmentary nature of my remarks, I would remind you that just as "nature exists in leasts" so the science of medicine has been built up by the accumulation of little facts. I venture to think that the dry bones of the observations which I have put before you are in reality clothed with the interest of practical importance in the surgery of the stomach. Be that as it may, this at least I hope, that such visits as mine serve as an evidence of that good fellowship which should, and I believe does, exist between members of our profession in the old world and in the new. Although separated by the sea we are united in the brotherhood of our common art. May we each glory in the share the other takes in its advancement. Let us say, as Marcus Aurelius said of old, "what matter by whom the good is done." And here may I pay a tribute to those in your country, some of whom now no longer speak to us, who have played so great a part in the progress of gastric and intestinal surgery. To mention only a few of these, the work of Halsted and Cushing on intestinal suturing, the work of Murphy on intestinal anastomosis, and the brilliant results of the Mayos, Oschner, Deaver, Finney, and others are landmarks in the history of the surgery of the stomach. And let us not forget the early work of Senn, the father of intestinal surgery, and of O'Connor, whose conception and intrepid execution of the first total gastrectomy gave a powerful stimulus to gastric surgery. All honour to these early American pioneers. Let us strive to follow in their footsteps.

> "Science moves but slowly, slowly, creeping on from point to point,
> Men my brothers, men the workers, forward, forward let us range."

The science and art of surgery are incomplete and incompletable. We are aiming for a goal which we may never reach; but, as your great writer Emerson says, "The persuasion that we must search that which we do not know, will render us beyond comparison, better, braver, and more industrious, than if we thought it impossible to discover that we do not know, and useless to search for it."

# RELATION OF POLYMASTIA TO MULTIPAROUS BIRTH.[1]

By Dr. TEIZO IWAI,
PHYSICIAN-IN-CHIEF OF THE JAPAN RED CROSS HOSPITAL; ATTACHED TO THE SUITE OF H.I.H. PRINCE FUSHIMI REPRESENTING HIS MAJESTY THE EMPEROR OF JAPAN.

It is a general truth that the number of offspring in mammalia usually corresponds to the number of nipples. Horses and sheep having a single pair of nipples commonly have but a single offspring, while pigs, having five or six pairs, bear from six to 12 offspring at one birth. Dr. Ch. Ishikawa (professor of zoology, Tokyo Imperial University) told me that Mr. Graham Bell, the inventor of the telephone, noticed once while keeping sheep that some of them had more than one offspring, and that the same ones again gave multiparous birth at the next period of parturition. So he set them aside for breeding. Later, as he found that these sheep had supernumerary nipples, he began to set aside all the sheep with the supernumerary nipples for breeding, and he was very successful in his experiment. These facts seem to support the old saying that those who have supernumerary glands bear twins or triplets. Many European scholars, however, do not agree with this. Dr. R. Bonnet said that although he had no opinion of his own in regard to the relation of polymastia to multiparous birth based upon sufficient evidence, yet according to Dr. Leichtenstern out of 70 women who were subjects of polymastia there were only three who gave birth to twins. Dr. R. Wiedersheim, upholding the opinions of various scholars that polymastia is not associated with twin-birth, cited also the example above-mentioned.

According to Wappäus, Meckel, Veit, Hildebrand, Konrad, Ruppin, and others, however, the proportion of twin births in Europe, although it varies according to different writers, is, roughly speaking, 1·37 per cent. If this is the case, what Dr. Bonnet cited, three cases of twins out of 70 women subjects of polymastia as proving that there is no relation between polymastia and twins, goes to verify exactly the opposite of what he intended. That is, three cases out of 70 is 4·28 per cent., or more than three times the ratio of twins among ordinary women. I can add to this another example given by Dr. Hansemann, that of a woman who had supernumerary mammary glands and who became pregnant 17 times, twice giving birth to twins. Dr. Hugo Goldberger states that he had observed the case of a woman, 32 years of age, having one supernumerary gland in each axilla, who gave birth five times, the last of which was a case of the abortion of twins in the sixth month.

I have not yet had an opportunity of gathering the statistics of twins in this country. I have, however, applied once to Mr. N. Hanabusa, Chief of the Bureau of Statistics, to be provided with such statistics, but have been informed by him that owing to the incomplete state of our present census satisfactory statistics relative to twin-births have not yet been completed. I am therefore obliged to mention in the following table only those facts which I have been enabled myself to gather up to the present.

| Observers | Cases of parturitions. | Cases of twins. | Percentage. | Cases of triplets. | Percentage. |
|---|---|---|---|---|---|
| Dr. S. Kinoshita and Dr. K. Morimune. | 1728 | 21 | 1·21 | 1 | 0·05 |
| Dr. E. Omori. | 523 | 3 | 0·57 | — | — |
| Dr. K. Arai. | 150 | 1 | 0·66 | — | — |
| Mrs. N. Iwasaki (a midwife). | 1092 | 4 | 0·36 | — | — |
| Miss T. Hisajima (a midwife). | 539 | 3 | 0·55 | — | — |
| Mrs. K. Yoshino (a midwife). | 787 | 6 | 0·76 | 1 | 0·12 |
| Miss I. Yabe (a midwife). | 263 | 4 | 1·52 | — | — |
| Total ... ... | 5082 | 42 | 0·82 | 2 | 0·03 |

Putting the above seven returns together we have the average of 0·82 per cent., which is 0·55 per cent. less than the ratio of twins in Europe (1·37 per cent.). Though I am not able to give from these small figures the general average of twins in this country, yet I am inclined to believe that the ratio of multiparous birth in this country is far below that in Europe.

---

[1] See The Lancet, Sept. 14th, 1907, p. 753.

While I was looking for an opportunity to make further investigation upon this subject I heard unexpectedly in June, 1901, that Mrs. M—— M——, 36 years of age, who lived in Hama-cho, Tokyo, had had twins in the year 1900 and then triplets the year following. Upon examination I found, as I expected, one supernumerary gland on the anterior wall of each axilla, and upon squeezing I obtained milk from both of them. Ever since then I have been earnestly studying multiparous birth, and up to the present time, directly or indirectly, 24 cases have come under my observation, including twins, triplets, quadruplets, quintuplets, &c. Out of these 24 cases 16 had supernumerary glands and the remaining eight not, showing the ratio of 66·66 of polymastia among 100 cases of multiparous birth. Again, out of 11 cases of the total number who had twins nine were subjects of polymastia (81·81 per cent.), and out of the remaining 13 cases who had triplets, quadruplets, and quintuplets seven were subjects of polymastia (53·84 per cent.).

By these facts, and also those which I am going to mention hereafter, I was finally enabled to prove that those who are subjects of polymastia have a tendency to become more frequently pregnant than those who have not. From my own observation, out of 85 women who are subjects of polymastia and had passed more than ten months after marriage I obtained the following results: Those who were already pregnant, 71 (i.e., 83·52 per cent.); and those who are not yet pregnant, 14 (i.e., 16·47 per cent.). Again, from my own observations in the gynæcological department of the Japan Red Cross Hospital, 1905–06, I obtained, out of 727 women who were subjects of polymastia and had passed more than ten months after the marriage, the following: Those who were already pregnant, 523 (i.e., 71·93 per cent.); and those who are not yet pregnant, 204 (i.e., 28·06 per cent.). Having these figures in view we should be able to form an estimate of how much more frequently those who have supernumerary glands become pregnant.

In an article written by Dr. M. Ogata, the director of Ogata Gynæcological Hospital, Osaka, on the Mamma of the Japanese Women,[2] we find the following item as to the relation of polymastia to pregnancy: "Out of 13 married women having polymastia we have: Those who were already pregnant, 12 (i.e., 92·30 per cent.); those who are not yet pregnant, 1 (i.e., 7·70 per cent). Out of the married women not being subjects of polymastia we have: Those who were already pregnant, 55·90 per cent.; those who are not yet pregnant, 37·90 per cent.; those who had abortion, 6·20 per cent. Judging from the above figures, it seems that those who have supernumerary mammary glands or nipples are more likely to become pregnant." Moreover, out of 101 married women who had supernumerary glands, I myself met with 18 cases of multiparous births—i.e., 17·82 per cent. This is, however, the result I obtained upon examining the subject of polymastia from the point of view of multiparous birth, and can therefore not be taken as the ratio existing between polymastia and multiparous birth in general. In this country where the cases of multiparous birth are comparatively few, the fact that they are found more frequently among those who are subjects of polymastia is a sufficient proof that there is a relation between them, and although this subject still remains one of controversy among scientific men, I do not hesitate, from my own observation, to assert that such is the case. The following is the description of the cases I have met with:—

CASE 1.—Mrs. T—— F——, 35 years of age. In November, 1901, she gave birth to quintuplets. Having had previously eight children these made in all 13. Upon examination I found one supernumerary gland on the anterior walls of both right and left axillæ. The one on the right was considerably developed. On squeezing, both were found to secrete thin milk.

CASE 2.—Mrs. K—— O——, 37 years of age. In June, 1903, she had quadruplets, and previously three children making in all seven. Upon examination no trace of polymastia could be found.

CASE 3.—Mrs. M—— M——, 36 years of age. In June, 1901, she had triplets, twins the preceding year, and five children previous to that, making in all ten children. Upon examination I found one supernumerary nipple on the anterior wall of either axilla, and by squeezing obtained the secretion of milk.

CASE 4.—Mrs. H—— K——, 32 years of age. In July, 1901, she had triplets, and previously five children, making in all eight. Upon examination I found one supernumerary gland on the anterior wall of either axilla, one upon the left mamma, one on the underside of the right mamma, and one in the right axilla, making in all five supernumerary glands. From the one upon the left mamma and the one on the anterior wall of the right axilla milk could be obtained by squeezing.

CASE 5.—Mrs. O—— Y——, 26 years of age. In August, 1903, she had triplets for the first time. Upon examination one supernumerary gland was found on the anterior wall of the left axilla, but no secretion could be obtained by squeezing.

CASE 6.—Mrs. T—— K——, 27 years of ago. In March, 1902, she had triplets, and previously four children, making in all seven. Upon examination I found under the skin of the anterior wall of the left axilla a gland of the size of a small pea (1½ centimetres above and external to the normal breast). At the corresponding place on the right a faint trace of the same thing was visible.

CASE 7.—Mrs. H—— O——, 39 years of age. In June, 1902, she had triplets, and previously six children (six times prematurely born), making nine in all. Upon examination I found four distinct glands—one on the anterior wall of the left axilla, one in the left axilla itself, and two on the anterior wall of the right axilla. The bunch of glands could be felt under the skin but no secretion could be obtained by squeezing.

CASE 8.—Mrs. S——, 33 years of age. In November, 1901, she had triplets, and previously two children, making in all five. Upon examination I found one supernumerary gland of one-half the size of a grain of rice on each side of the linea alba, three and a half centimetres from it and about two centimetres below the lower edge of the rib. (As I was unable to examine this case personally I mentioned it to Dr. M. Imai, the director of Nagano Hospital, who sent his assistant to examine the subject and obtained the above report.)

CASE 9.—Mrs. M—— O——, 30 years of age. In June, 1906, she had triplets, and previously four children, making in all seven. Upon examination I found a flat and hard bunch of the size of an egg under the skin of the left axilla. She had never felt its existence until two or three days before the parturition. Judging from its form I considered it to be a ductless mammary gland under the skin. She informed me, moreover, one month after parturition that the said bunch had entirely atrophied.

CASE 10.—Mrs. S—— M——, 29 years of age. In March, 1902, at the seventh month, triplets were born to her dead; she had previously to that six children, making in all nine. Upon examination no trace of polymastia could be found. (This, again, I was unable to examine personally, so I asked Dr. K. Mizuno the medical man in attendance, through my friend Dr. T. Hayashi who happened to be in Tokyo from that district, and obtained the above report.)

CASE 11.—Mrs. T—— A——, 27 years of age. In April, 1902, seven years after her marriage, she gave birth to triplets. Upon examination no trace of polymastia was found in her.

CASE 12.—Mrs. T—— K——, 36 years of age. In September, 1901, she had triplets, and previously five children, making in all eight. Upon examination no trace of polymastia was found.

CASE 13.—Mrs K—— K——, 31 years of age. In August, 1903, she had triplets, and previously three children, making in all six. Upon examination no trace of polymastia could be found.

CASE 14.—Mrs. Y—— A——, 30 years of age. In March, 1902, she had twins, and previously three children, making in all five. Upon examination one supernumerary gland was found in the left axilla and two each on the anterior wall of each axilla. The secretion of milk was obtained from two of those on the left and from one on the right.

CASE 15.—Mrs. I—— H——, 39 years of age. In December, 1901, she had twins, and previously eight children, making in all ten. Upon examination there was an indistinct supernumerary gland on the anterior wall of the left axilla and a prominent one at the corresponding place on the right.

CASE 16.—Mrs. N—— A——, 37 years of age. In May, 1902, she had twins, and previously four children, making in all six. Upon examination one supernumerary gland was found on the anterior wall of each axilla; they were dark in colour, and even after four months, by squeezing, I could obtain thin milk from them.

CASE 17.—Mrs. K—— K——, 22 years of age. Soon after she married J——, a younger brother of Mrs. N—— A—— (mentioned in Case 16), she had two children, and in May, 1902, she gave birth to twins, but after parturition both the mother and the twins died. I found upon examination that the father of these twins has a remarkable supernumerary gland on the anterior wall of the right axilla. Upon examination of Mrs. M—— K—— (57 years of age), the mother of Mrs. N—— A—— and J——, I found one supernumerary gland on the anterior wall of the right axilla. From this it is clear that the condition of polymastia in Mrs. N—— A—— and J—— is one inherited from their mother, while the multiparous birth in Mrs K—— K—— is probably to be sought for in the polymastia of her husband J—— and in his mother M—— who herself had the pretty large number of eight children.

CASE 18.—Mrs. S—— K——, 26 years of age. In June, 1901, she had twins. When she was a nurse in the Red Cross Hospital (November, 1894), I found that she had one supernumerary gland on the anterior wall of each axilla, and after she was married I heard that she had twins.

CASE 19.—Mrs. T—— Y——, 36 years of age. In July, 1898, she had twins, and previously four children, making in all six. Upon examination there was a trace of a supernumerary gland on the anterior wall of the left axilla, but nothing was found on the right. (This case was observed by Dr. K. Aoki of Atsugi, Kanagawa-ken, and was reported to me.)

CASE 20.—Mrs. H—— A——, 32 years of age. In 1903 she had twins, and previously three children, making in all five. Upon examination a remarkable condition was found of supernumerary glands on the anterior wall of each axilla, 13½ centimetres distant from the normal mammæ.

CASE 21.—Mrs. S——, 43 years of age. In July, 1905, at the fifth month, twins were born to her dead; she had previously to that five children, making in all seven. Upon examination I found one supernumerary gland on the anterior wall of the right axilla, nine centimetres distant from the normal mamma.

CASE 22.—Mrs. S—— N——, 43 years of age. She gave birth to twins in 1884 when she was 24 years of age; she had previously two children, making in all four. Upon examination no trace of polymastia could be found.

CASE 23.—In April, 1902, after my communication on polymastia at the first meeting of the Japanese Union Medical Society, Dr. S. Shishido, of Kariya, Mikawa, told me of the following case: "There is a woman in my vicinity who has supernumerary glands and had twins three or four years ago. She is really blessed with children, having ten in number, though she is but 35 years of age."

---

[2] Guide to Midwifery, No. 65, October, 1901.

CASE 24.—Mrs I—— Y——, 25 years of age. She gave birth to twins in 1900 when she was 22 years of age; before and after that time she had three children, making in all five. Upon examination no trace of polymastia could be found.

The weight, the height, and the circumference of head of the children mentioned in the above cases, so far as obtainable by me, are given in the following table:—

| — | Order of birth. | Weight (kilogramme). | Height (cm.). | Circumference of head (cm.). | Remarks. |
|---|---|---|---|---|---|
| Case 1. Quintuplets. | 1. Male. | 1 125 | 36·4 | 25·8 | Taken by Dr. M. Sato and Dr. K Sato; the date is unknown but having died four days after their birth this must have been taken within these four days. |
| | 2. Female. | 1·125 | 34·9 | 26·1 | |
| | 3. Male. | 1·575 | 38·2 | 27·2 | |
| | 4. Female. | 1·387 | 37·8 | 26·4 | |
| | 5. Male. | 1·347 | 36·4 | 27·2 | |
| Case 2. Triplets. | 1. Male. | 2·300 | 43 0 | 31·0 | Taken by Dr. K. Kusada four days after their birth. |
| | 2. Female. | 2·000 | 41·0 | 29·0 | |
| | 3. Male. | 1·550 | 40·0 | 28 0 | |
| Case 3. Triplets. | 1. Male. | 1·700 | 42·0 | 30·5 | Taken by Dr. T. Iwai 13 days after their birth. |
| | 2. Male. | 2·000 | 46·0 | 31·5 | |
| | 3. Male. | 2·300 | 46·0 | 33·0 | |
| Case 5. Triplets. | 1. Male. | 1·980 | 47·0 | 31·0 | Taken by Dr. T. Iwai six days after their birth. |
| | 2. Male. | 1·750 | 43·0 | 30·5 | |
| | 3. Male. | 1·640 | 44·0 | 29·5 | |
| Case 9. Triplets. | 1. Female. | 1·250 | 35 0 | 28·0 | Taken by Dr. T. Iwai five days after their birth. |
| | 2. Female. | * | * | * | |
| | 3. Female. | 1·480 | 38·0 | 28·0 | |

* Unable to examine, as the child died on the fourth day after birth.

Referring to the 17 children mentioned in the above table the lightest weight is 1125 grammes, as found in the second (female) child of Case 1, and the heaviest is 2300 grammes, as found in the third (male) child of Case 3 (taken, however, 13 days after his birth). The average weight is 1656 grammes. When we compare this figure with that of the average weight of the ordinary newly-born Japanese children —i.e., 2780 grammes—as taken by Dr. T. Miwa, the professor of the Medical College of Chiba, we find between them the difference of 1124 grammes. This will sufficiently show how incomplete is the development of the children of multiparous birth.

It is especially interesting to note the connexion between blood relation and multiparous birth, as, for example, in Cases 16 and 17, a woman and her younger brother's wife had twins in the same month of the same year; in Case 22 we find that Mr. N——'s aunt and her daughter (namely, his cousin) had twins; in Case 1 I found that the cousin and the cousin's daughter had twins alike. And in Case 3 only I found multiparous birth repeated in one and the same person. I have also noticed several cases of inheritance of polymastia, which I have already discussed in my essay, "A Statistical Study on the Polymastia of the Japanese."[3]

In the cases mentioned above we find that the youngest woman was 22 years of age and the majority of them were over 30 years and with the exception of Cases 5, 11, and 18 all had gone through labour several times. Thus, multiparous birth is found generally in women who had previously several children. This fact seems to coincide with Dr. Rump's opinion, that "the instances of the multiparous birth generally increase in women of advanced age, and in those who have gone through labour several times."

According to my observation those who have had more than triplets at a time are found among people who live very poorly, and also in their disposition, with the exception of one or two cases, seem to have certain features in common. They are generally of a mild temper and possessed of rather dull sexual passion; they are rather fleshy, and are commonly members of large families. This is in accordance with a popular saying that "poor people have a large number of children." Although I am aware that such minor points have no direct scientific bearing upon the subject under discussion I simply mention them in passing, having noticed them in my investigation of numerous cases.

CONCLUSION.

1. It is probable that there is a relation between polymastia and multiparous birth.

2. It is probable that those who have supernumerary mammary glands have a tendency to become more frequently pregnant than those who have not.

3. The fact that the instances of multiparous birth increase in women with the number of their conceptions and the development of their age coincides well with the opinions given hitherto by several eminent scholars.

4. According to my own observation the instances of multiparous birth are found more among people of the lower class, and especially among those of a low order of intelligence.

*An alphabetical list of works concerning the study of the relation between polymastia and multiparous birth.*—American Magazine: Supplement to Heart's Chicago American, Chicago, Oct. 13th. 1901. Bonnet, R.: Die Mammaorgane im Lichte der Ontogenie und Phylogenie (Markel und Bonnet's "Ergebnisse der Anatomie und Entwickelungsgeschichte," 1892, SS. 607–657. Eulenburg: Real-Encyclopädie der Gesammten Heilkunde, Band xix., S. 291. Goldberger, H.: Ein Seltener Fall von Polymastie (Archiv für Gynäkologie 1895, Band xlix., S. 272. Hansemann, D.: Polymastie (Verhandlungen der Berliner Gesellschaft für Anthropologie, 1889, S. 434). Iwai, T.: Zur Hyperthelie (Mittheilungen der Medicinischen Gesellschaft zu Tokyo Juli, 1900, Band xiv., No. 12); Beziehung zwischen Mehrfacher Geburt und überzähliger Brust (ibid., Juli, 1901, Band xv., No. 14); Noch einmal über die Beziehung zwischen Mehrfacher Geburt und überzähliger Brust (ibid., September, 1901, Band xv., No. 18). Ogata, M.: Guide to Midwifery, October, 1901, No. 65, Shishido, S.: Mentioned in the report of the first annual meeting of the Japanese Union Medical Society, October, 1902. Wiedersheim, R.: Das Bau des Menschen als Zeugnis für seine Vergangenheit, 3 Auflage, Freiburg im Bayern und Leipzig, 1902. Winckel: Handbuch der Geburtshülfe, I. Band.

---

# MUCOUS COLITIS.*

By ERNEST HENRY HARRISSON, M.D. CANTAB.,
LATE MEDICAL CLINICAL ASSISTANT TO OUT-PATIENTS AT THE LONDON HOSPITAL.

MANY papers dealing with mucous colitis have recently appeared both on the continent and in England, and a careful perusal of the literature shows that the various authors hold views of a most diverse nature with regard to this interesting disease. There is hardly a disease known which has been favoured by so many different names. Thus it has been called by the several authors of papers on the subject membranous colitis, colica mucosa, muco-membranous entero-colitis, mucous colitis, enteritis membranacea, glairy enteritis, mucous colic, tubular diarrhœa, glutinous diarrhœa, intestinal croup, &c. Perhaps of these mucous colitis is the best term. Although this disease is not characterised by any active inflammatory process in the colon, yet there seems to be an over-activity of the mucous cells in the lining of the large intestine associated with in some parts atony, and in other parts spasticity, of the muscular coats of the colon. Moreover, the chief characteristic of the disease is the passage of mucus which has peculiar properties of its own, and although the mucus casts may closely resemble membranes on a cursory examination, yet they are not really membranes, and therefore the term "membranous" is certainly misleading and should only be applied to cases in which true membrane is passed.

On perusing some of the recent dissertations on the subject one cannot help thinking that the great diversity of opinion, alike with regard to the etiology, symptoms, pathology, and treatment, arises from errors in diagnosis, and that many of the cases, described as mucous colitis, are not really true cases of the disease we are considering but are rather cases in which mucus is passed from the bowel as a result of some definite inflammatory condition of the colon or of the irritation caused by a growth in the large intestine. In my selection of cases I have been careful to exclude all those patients who have shown signs of ulceration of the colon, or of any other local condition, which may have given rise to symptoms closely resembling those which I shall describe later, and so the total number of cases is not large. Still, as mucous colitis is not a common disease, valuable conclusions may be drawn from a careful study of the 25 cases. Mucous colitis may be defined as a combined secretory and motor neurosis of the large intestine associated with abdominal pain which is of two kinds: a more or less constant aching pain felt chiefly in the lower part of the abdomen and a paroxysmal colicky pain immediately preceding, and always relieved by, defæcation.

---

[3] THE LANCET, Sept. 14th, 1907, p. 756.

* Thesis for the M.D. degree of the University of Cambridge

*The etiology* of the disease is somewhat doubtful but many important factors can be adduced to show that mucous colitis is rather due to a disease of the nervous system than to a local condition of the colon. It is certainly found more commonly in the upper and middle classes than amongst the poor. In this connexion I may add that the records of all the patients treated in the London Hospital for the past five years have been carefully looked through, and only 20 cases have been collected, and of these 20 cases many were patients of independent means. Mucous colitis occurs much more commonly in females than in males; my own cases show that 72 per cent. were females. Other writers such as Hale White[1] found 85 per cent. of his cases were females, whereas Nothnagel,[2] von Noorden,[3] and others state the percentage as 70 to 80. It is a disease which first makes its appearance in early adult life; thus to analyse the cases before us:—Between the ages of 10 and 20 years, 4 cases; between 20 and 30 years, 5 cases; between 30 and 40 years, 10 cases; between 40 and 50 years, 2 cases; between 50 and 60 years, 2 cases; and between 60 and 70 years, 2 cases. Among my cases the earliest age at which the first symptoms of mucous colitis appeared was 17 years. In the two cases over 60 years of age, the age at which the first symptoms appeared is a little doubtful, but both patients are known to have been extremely constipated as long as they can remember, and they have both been under a medical man's care for the passage of mucus for many years. Hale White[4] found in 60 cases that the symptoms very rarely appeared in patients under 20 years of age, but most frequently in patients between the ages of 20 and 30 years. Boas[5] and others say that the majority of cases occur between the ages of 20 and 40 years. Seeing therefore that all authors are agreed that mucous colitis is a disease of early adult life, great care is needed to determine if we are dealing with a true case of this disease or not when the first symptoms appear at the age of 45 or more years. According to von Noorden[6] the disease does not seem to be equally prevalent in all localities, for in his list of cases Russians appear to predominate.

Most authors agree that constipation is one of the chief etiological factors and my statistics show that in this disease constipation is extremely common; thus 84 per cent. of the cases suffered from constipation, but on careful examination it was found that 56 per cent. had constipation before the mucous colitis appeared, whereas 84 per cent. had constipation during the attacks. This would show that although in a great many cases constipation preceded the attack it was more frequent during the attack and must therefore be looked on rather as a symptom of mucous colitis than as an etiological factor. With regard to diarrhœa little need be said, as very few of the patients suffered from it to any extent. 20 per cent. had diarrhœa before the attack, 8 per cent. had diarrhœa during the attack, and 8 per cent. had diarrhœa before the attack followed by constipation during the attack. These figures show that the disease is only very slightly associated with diarrhœa, but a few of the patients who suffered from diarrhœa before the attack were constipated during the attack.

The nervous temperament of the patient seems to play an important rôle in the causation of the disease. Thus 64 per cent. of my cases showed marked instability of the nervous system in the form of neurasthenia, hysteria, attacks of nervous prostration, &c. 24 per cent. showed various reflex phenomena, such as alternate flushings and coldness of the head and face, or of the feet, with excessive sweats, catches in the voice, and attacks of palpitation, which in one of my cases are very severe and are accompanied by pain in the chest which might almost be looked on as pseudo-angina pectoris. These reflex phenomena frequently end by the patient going to stool or by a copious eructation. Langenhagen[7] lays great stress on these reflex phenomena. He says: "The reflexes go from the irritated intestine by means of the bulb and thence by that of the pneumogastric nerve or the sympathetic system and reverberate upon the most diverse organs, especially the heart, with more or less violent fits of palpitation occurring frequently after meals, irregularity of beat, and even attacks of pseudo-angina pectoris. These attacks are often terminated by a stercoraceous evacuation or a copious eructation and the patient is relieved." The terminal threads of the vagus in the lungs are also apt to be affected in this way, for he has frequently remarked attacks analogous to those of asthma, excepting that they are of an inverse clinical type. The thorax is in a way immobilised in the act of expiration and there is great difficulty in making the inspiratory movements. He goes on to say that "If the irritation caused by the muco-membranous affection of the intestine can produce such repercussion, there must be in such cases a sort of special temperament, a nervous diathesis, an exaggerated impressionability and susceptibility of the entire nervous system." Von Noorden[8] states that the great majority of cases give a history of previous digestive disturbance for a long period preceding the onset of mucous colitis. My statistics show that 76 per cent. of the cases suffered from various disorders of the stomach before the symptoms of mucous colitis made their appearance. The chief gastric troubles were pain and vomiting after meals, flatulence, and hyperacidity, while a few cases had gastric ulcer. Glénard[9] and Langenhagen[10] lay great stress on enteroptosis as an etiological factor, but in my cases 12 per cent. only showed this abnormality, and therefore it would appear that enteroptosis does not play such an important part in the causation of mucous colitis as has been ascribed to it.

In a large number of cases mucous colitis is preceded by affections of the uterus and appendages, and these are of the most diverse nature. In my list of cases no fewer than 36 per cent. had some trouble with the organs of generation, dysmenorrhœa being the most common, while 16 per cent. attribute their illness to a miscarriage. It is difficult to see in what way these affections of the uterus and its appendages can produce mucous colitis, still there is little doubt that the nervous system can be very much affected by even a trifling ailment in these organs. Moreover, as the anatomical relations of the generative organs and rectum are very close, disease of the former may easily affect the latter and particularly in restricting the natural movements of this portion of the bowel in consequence of the formation of adhesions. A few of the cases in my series had suffered for years with appendicitis and had had appendicectomy performed. In one case the mucous colitis came on two years after the operation, and in the others the patients ceased to pass mucus and have remained free from signs of mucous colitis since. These facts show that the symptom-complex of mucous colitis may follow and possibly result from some focus of irritation in the abdomen. In this connexion it will be seen that mucous colitis bears a striking resemblance to asthma. It is well known that in persons who show a predisposition towards asthma some form of irritation to the nasal mucous membrane, however slight in intensity, will precipitate an attack. I have frequently noticed this close relationship between nasal irritation and the development of asthma, for in this neighbourhood affections of the nose are common, such as rhinitis sicca, hypertrophic rhinitis, &c., and there are also not a few cases of asthma. Moreover, in the early summer, when there is an abundance of small particles in the air, either dust or pollen, nasal catarrh is very prevalent and in the more severe cases asthma follows.

The cases of mucous colitis associated with appendicitis appear to fall into two groups—namely, (1) those in which the appendicitis is only part of the mucous affection of the rest of the intestine; and (2) those in which true appendicitis precedes the onset of mucous colitis. It may be stated here that where appendicitis appears only as a part of the mucous colitis, operation will not cure the disease of the colon, whereas appendicectomy in the other type of case may possibly exert a very beneficial influence and ultimately be followed by a complete cessation of the symptoms of mucous colitis. In only one of the cases can a history of previous gall-stones be obtained. Four of my patients had suffered from dysentery some years before the first appearance of the symptoms of mucous colitis.

*Pathology.*—As mucous colitis is never of itself fatal the number of post-mortem examinations is limited. There are on record a certain number of cases which have at some period or other of their lives shown signs of having had the disease, and Rothmann,[11] Ruge,[12] Edwards,[13] Osler,[14] Jagic,[15] and Weigert[16] have performed necropsies on such cases. In every instance the examination was negative with regard to the bowel. Franke's case, on which a colotomy was performed, also confirms the view that the disease is in no way associated with morbid conditions of the colon. Abercrombie describes a case where there were cysts of the mucous membrane of the bowel. Von Noorden[17] states that there are a number of valuable post-mortem examinations on record that demonstrate positively that a disease picture corresponding to colica mucosa may actually be observed in cases of genuine enteritis. Boas[18] holds the view that these positive findings are of greater importance than any negative findings. This cannot in reality be so, for it is much more important that mucous colitis can be present without any anatomical lesion in the bowel, but occasionally is met with where there is definite evidence of inflammation. Nothnagel[19] recognises this and divides mucous colitis into two varieties—namely, enteritis membranacea and colica mucosa. This is certain, that an examination of the mucus passed fails to reveal any macroscopic or microscopic evidence of inflammation, and therefore the majority of the cases of this disease belong to the disease described by Nothnagel as colica mucosa. A few cases may certainly show the disease-picture of mucous colitis and suffer from a definite enteritis in addition. H. Westphalen[20] opposes Nothnagel in his classification of mucous colitis and his conclusions are: 1. The division of the so-called enteritis membranacea into two groups of different etiology, as Nothnagel does, into membranous enteritis, the result of intestinal catarrh, and into colica mucosa, an intestinal neurosis, can scarcely be maintained. All cases of the disease show a single etiological factor. 2. The membranous casts are formed in the intestine from a nervous supersecretion of mucus. 3. If there is an uncomplicated secretion neurosis large quantities of amorphous mucus are passed. 4. If in addition there is spastic constipation the over-abundant quantity of mucus is compressed and long tubular casts are passed. 5. If the masses are passed with severe pain he assumes, with Rosenheim, that a neurosis of intestinal sensibility exists at the same time. The mucus which is passed is hyalin, and embedded in it may be seen fæces, leucocytes in small numbers, and remains of undigested food particles, but no fibrin. The mucus differs from that of other intestinal diseases in that it contains fewer cellular elements, and also must possess certain peculiar properties, for it is more tough and tenacious and clings to the bowel wall more than ordinary mucus, so that it is with difficulty removed by means of the ordinary post-mortem hydrant.

---

[1] Hale White: THE LANCET, Oct. 28th, 1905, p. 1229.

[2] Nothnagel: Sleim Kolik und Membranoser Darmkatarrh, Specielle Pathologie und Therapie, Band xvii., p. 139. Wien, 1898.

[3] Von Noorden: Membranous Catarrh of the Intestines 1906.

[4] Hale White: THE LANCET, Oct. 28th, 1905, p. 1229.

[5] Boas: Diagnostik und Therapie der Darmkrankheiten, p. 236, 1899.

[6] Von Noorden: Op. cit.

[7] Langenhagen: Muco-Membranous Entero-Colitis, 1903.

[8] Von Noorden: Op. cit.

[9] Glénard: De l'Enteroptose, Paris, Masson, 1885.

[10] Langenhagen: Op. cit.

To explain this peculiar property of the mucus von Noorden[21] has put forward two hypotheses. He says: "It is possible the secretion of mucus occurs under the stimulus of nervous irritation and that it is, from the beginning, constituted differently than normal mucus—i.e., it is more sticky"—and he illustrates this hypothesis by the comparison with the physiological experiment on the dog—namely, "stimulation of the chorda tympani produces an abundant secretion of thin watery saliva, whereas stimulation of the sympathetic produces a very thick tough gelatinous and stringy mucous secretion." His second hypothesis is that, "owing to the constipation produced by the spastic condition of the bowel, the fæces and mucus move very slowly along the large intestine, and absorption of water takes place from the mucus, and so it loses its motility and becomes less elastic, whilst its plasticity and stickiness increase, and when these properties of the mucus reach a certain degree the adherent masses can only be removed by violent contractions that are usually accompanied by pain, and so an attack may be brought about. The attack is determined either by the mass of the mucus or possibly by some chemical changes taking place in the mucus leading to irritating products (these chemical changes being little understood), or by certain nervous influences."

By careful consideration of all the facts before us it is fair to assume that mucous colitis is due to a disease of the nervous system consisting of a secretory and motor neurosis. Where the pain is excessive a sensory neurosis exists at the same time. To summarise the evidence that mucous colitis is a neurosis: 1. (*a*) The sex, age, and social position of the sufferers have to be considered. Thus the majority of the patients are females between the ages of 20 and 40 years, all more or less belonging to the middle and upper classes, and the majority manifesting various nervous phenomena. (*b*) The attacks of mucous colitis are frequently induced by excitement or emotion of any kind. (*c*) The almost total absence of any inflammatory condition in the colon. This also serves to disprove one of von Noorden's theories as to the causation of the pain—namely, that chemical changes may occur in the mucus leading to irritant products. If this were so these irritating products would most certainly cause some signs of inflammation in the mucosa of the colon. This is certainly not commonly the case. 2. Constipation and enteroptosis cannot be considered causative factors but only associated conditions. 3. The frequent association of other abdominal disorders, such as affections of the uterus and its appendages, true appendicitis, gall-stones, and abdominal aneurysm. Tuttle[22] quotes six cases where he discovered this condition present. 4. The disease can hardly be said to be caused by adhesions between the colon and surrounding structures, for this would not produce the nervous phenomena, which are protean in type. 5. The close analogy to asthma. In that in a predisposed person a small focus of nasal irritation will produce asthma, so also in a patient with a nervous diathesis a focus of abdominal disturbance, manifold in type, and often slight in character, will produce the symptom-complex of mucous colitis, this peculiar instability of the nervous system resulting in a combined secretory, sensory, and motor neurosis in the colon.

*The symptomatology of mucous colitis* is best studied by considering first the symptoms of the patient during an attack; and secondly, the symptoms between the attacks. The cardinal symptoms during an attack of mucous colitis are the passage of mucus and abdominal pains. The characters of the mucus passed vary according to the length of time it has remained in the bowel since its formation. Thus if it is soon passed, after being secreted by the mucous cells in the colon, it resembles the uncooked white of egg or frog's spawn and so is clear, colourless, and homogeneous. If it has remained some hours in the bowel the mucus becomes more intimately mixed with the other intestinal contents and also may appear in shreds of varying thickness and length. If it remains still longer in the large intestine before being passed it may be rolled up into round masses which, on careful examination in water, can be seen to be long pieces varying in length and thickness. In one of my cases I have seen such a piece unrolled which measured from 14 to 15 inches in length and one half to three-quarters of an inch in thickness. When the mucus is passed in these long strands it is nearly always discoloured by the fæces and frequently small round scybalous masses are found firmly adherent to the mucus, and occasionally small streaks or even clots of blood can be seen clinging to it. The microscopic examination of the mucus shows fæces and portions of undigested food particles together with, occasionally, red blood corpuscles and a few leucocytes embedded in a clear hyaline medium. Besides the mucus which is passed, hard fæces in scybalous masses form the greater part of the stools. For these patients are nearly always constipated (84 per cent.). In a great many instances undigested particles of food can be seen, especially when the patients have eaten vegetables or fruit which contains a large percentage of cellulose. Melæna is occasionally met with; thus, 36 per cent. of my cases have at some time or other during their illness passed blood with their stools. The amount varies considerably in quantity in different patients and at different times. In a few instances it can be seen that the bleeding proceeds from hæmorrhoids, since these are extremely common in patients who suffer from mucous colitis and are most probably caused by the constipation. Fæcal material is not always present in the stools of these patients, for I have frequently seen stools which have been accompanied by violent pains consisting of mucus only or mucus mixed with a little blood. Intestinal sand is occasionally passed in the motions, and in one of my cases recently there was quite a tablespoonful passed, consisting of reddish-brown grains varying in size. This particular sign has been observed in two of my cases. Langenhagen[23] and Hale White[24] have observed intestinal gravel in the stools of their patients and, according to Langenhagen, the chemical composition of the sand is nearly always constant and consists of a fundamental organic matter mixed with salts of lime in variable proportion. They are usually the phosphates and carbonates of lime and sometimes crystals of ammoniaco-magnesian phosphate are to be met with. Hale White's analysis shows the principal inorganic constituent to be calcium oxalate. Langenhagen and Hale White also point out that the fæces may be very pale and I have noticed this condition on three occasions in one of my patients, the stools consisting of greyish material, and in this particular case, after taking one or two doses of castor oil or other aperient, there has been a copious discharge of dark brown bile which is extremely irritating to the skin round the anus.

---

[11] Rothmann: Deutsche Medicinische Wochenschrift, 1887, vol. xiii., p. 602.

[12] Ruge: Ibid.

[13] Edwards: Transactions of the College of Physicians of Philadelphia, 1888, series 3, vol. x., p. 82.

[14] Osler's case: Ibid.

[15] Jagic: Zur Histologie der Enteritis Membranacea und des Dickdarmcatarrh, Wiener Klinische Rundschau, 1901, p. 757.

[16] Weigert: Ibid.

[17] Von Noorden: Op. cit.

[18] Boas: Op. cit.

[19] Nothnagel: Op. cit.

[20] H. Westphalen: Ueber die sog Enteritis Membranacea, Berliner Klinische Wochenschrift, 1901. pp. 367, 403, 432.

[21] Von Noorden: Op. cit.

[22] Tuttle: Diseases of the Anus, Rectum, and Pelvic Colon. 1903, p. 171.

Having considered at some length the character of the stools we will next pass on to study the other cardinal symptom—namely, the abdominal pain. This varies very much, on the one hand, according to the severity of the attack, and, on the other hand, with the individual sensibility. The abdominal pain is of two kinds: firstly, there is in some cases a dull constant aching pain felt chiefly in the lower part of the abdomen, which is occasionally relieved by pressure but for the most part unaltered. And, secondly, paroxysms of severe colicky pain which may be so intense as to make the patient vomit, or sweat, or writhe in agony; and this is usually associated with a desire to go to stool, and is nearly always relieved by the passage of fæces, even if the motion only consists of slime or blood and slime. This paroxysmal sharp pain is more characteristic of mucous colitis than the constant dull ache, and is probably caused by the violent peristaltic movements of the bowel to expel or to separate the tough gelatinous mucus from the wall of the intestine. Occasionally there is tenesmus, but very rarely. An examination of the abdomen during an attack of mucous colitis reveals certain very important facts. In the first place, the abdominal parietes are nearly always flabby. It is unusual to find the abdomen either much distended or much retracted. There is nearly always a certain amount of deep tenderness over the colon either throughout its whole length or over a certain portion of it. In the majority of my patients deep tenderness was most marked over the sigmoid flexure. In a large number of cases the colon can be felt and the condition varies between spasm and atony, so that in any one case the two conditions may be met with—namely, spasm in one part and a flatulent distension in another. Hard fæces can often be felt in the sigmoid flexure. Another sign which is occasionally met with is the splashing sound on dipping suddenly with the fingers, and this is most often elicited in the transverse colon, which in some cases is dragged down very much below the umbilicus. Gurgling can frequently be felt along the whole course of the colon. The stomach is occasionally found to be dilated, but not commonly, as this was only found to be present in two of the cases of this series. Glénard[25] states that in 50 per cent. of the cases of mucous colitis there is a marked diminution in the size of the liver and that in only from 2 per cent. to 3 per cent. is it enlarged. My cases do not bear out this statement, for in none of them was there any diminution in the liver dulness, and in two cases the liver was definitely enlarged. An examination of the rectum with the finger usually reveals nothing except hard fæces and sometimes the presence of hæmorrhoids. A sigmoidoscopic examination is also negative.

The signs and symptoms of patients between the attacks of mucous colitis vary very much, but, as a rule, constipation and flatulence predominate. The tongue is usually coated with a whitish or light brown fur. The breath is usually offensive. There is, as a rule, dyspepsia of one kind or another, with loss of appetite; and these two factors usually lead the patient to deprive himself of first one article of food and then another until his diet is so restricted that it is not sufficient to meet the ordinary demands, and so the patients are often thin and wasted. As has been stated before, the patients are usually sufferers from neurasthenia or other nervous troubles. A large number of them, especially when they have suffered from mucous colitis for some length of time, become hopelessly neurotic and take a daily and increasing interest in their stools, and may almost be said to love their complaint. This is the class of patient one hardly expects will recover from the disease. In one of my cases the passage of large quantities of mucus in the urine was noted. In none of my cases was the temperature raised above 99° F., but in the majority the temperature was slightly subnormal and the charts do not show any marked rise or fall. Therefore the clinical symptoms can hardly be said to point to an inflammatory origin.

*Diagnosis.*—As mucous colitis is not a common disease, and, moreover, occurs in neurotic and dyspeptic individuals who greatly exaggerate their symptoms, it is quite possible that some cases occur which are not correctly diagnosed; therefore every care should be exercised to make a thorough examination of the abdomen and stools in a doubtful case. The patient should be kept in bed and carefully watched for some time, repeated examinations being made of the abdomen, character of the stools, &c., and the bowels well emptied by enemata. In all cases digital and bimanual examinations of the rectum should be made. Mummery[26] strongly advocates the use of the electric sigmoidoscope to exclude the possibility of malignant disease, and also to investigate the condition of the mucosa. The diseases which might be mistaken for mucous colitis are not many in number; amongst the more common may be mentioned:—(*a*) Local conditions in the rectum, such as rectal polypi, carcinoma, tuberculous ulceration, actinomycosis, or simple fibrous stricture. In all these cases a careful examination should reveal the true condition. (*b*) Affections of the colon, such as simple catarrhal colitis, ulcerative colitis, and dysentery. There should not be much difficulty in arriving at a correct diagnosis, for in all these diseases diarrhœa is a prominent symptom, and, moreover, they are all associated with pyrexia of greater or less degree, whereas in mucous colitis it is exceptional to find the temperature above normal, at any rate, for any length of time, and constipation is one of the most prominent symptoms. The character of the stools should be a valuable guide, and the absence of marked tenesmus, and in the case of dysentery the absence of the amœba or of Shiga's bacillus in the stools, should be of much assistance.

*With regard to the prognosis*, one may say that by itself mucous colitis practically never ends fatally. Hale White[27] states that of his 60 cases 50 per cent. got well, from 10 to 12 per cent. were much improved, and 37 per cent. did not improve; the list of cases which did not improve is entirely made up of females and therefore there is no doubt that the disease is more severe in women than in men. It is important to note that nearly all these cases had had the disease for some considerable time before treatment was commenced, which forms a strong argument in favour of early recognition and treatment. These observations are fully confirmed by my own list of cases, but now that the disease is becoming more recognised, both with regard to its etiology and pathology, one cannot help thinking that the percentage of patients who ultimately completely recover will be even greater than 50 per cent.

*The treatment* of mucous colitis resolves itself into that for the relief of the attack itself, and that calculated to remove the cause of the disease. We will first consider the treatment of a patient suffering from a definite attack, and here the chief symptoms which require relief are the pain and constipation. Now, as we have decided that the pain is entirely due to efforts on the part of the bowel to remove the mucus which has been secreted into the intestine, our treatment must be directed to the bowel to help it completely to evacuate its contents. This may be attained in two ways—namely, by the use of aperients and by enemata. The aperient which has been of most service in the cases which have come under my own observation is certainly castor oil, and it should be given in fairly large doses and repeated frequently; thus it has been my practice to order doses of half an ounce to be given three times a day until the passage of mucus ceases, and then to be diminished to half an ounce daily. In a few cases there seems to be a great objection to the use of castor oil on account of its nauseating propensities, and in these cases I have substituted calomel in doses of two grains three times a day. Enemata of ordinary soap and water, or containing four or five ounces of olive oil, have certainly been beneficial and have materially assisted the aperient in its action, and in cases where there is much flatulent distension of the colon the addition of half an ounce of oleum terebinthinæ to the enema is useful. Irrigation of the colon certainly helps in the more rapid separation of the mucus from the walls of the intestine; and for this purpose ordinary warm water may be used at the temperature of the body, the injection being carried out by means of a funnel and a large sized indiarubber catheter passed through the anus and gently carried higher as the water is poured in, as by this means the rectum is distended and so the point of the catheter is not so likely to get caught in the folds of the mucous membrane of the intestine. At least two quarts of warm water should be employed at each injection. Various substances have been recommended to be used in solution for these high injections, such as sodium bicarbonate, sodium chloride, protargol 1 per cent., and silver nitrate ½ per cent., gradually increased in strength; but during the height of the attack it has been my experience that plain warm water affords the greatest relief, and afterwards one of the above solutions may be used once a day to prevent, if possible, the further hypersecretion of mucus. The patient should be kept in bed so long as the pain and passage of mucus continue and hot applications to the abdomen should be used freely. For this purpose flannels wrung out in hot water, and a few drops of turpentine or liquid extract of opium or the tincture of belladonna sprinkled on. These hot applications certainly afford a sense of comfort and give a feeling of relief on account of their antispasmodic tendencies, and so relieve the irregular peristalsis to a certain degree.

---

[23] Langenhagen: Op. cit.
[24] Hale White: Op. cit.
[25] Glénard: Op. cit.
[26] Mummery: The Practitioner, 1906, vol. lxxvii., p. 195.
[27] Hale White: Op. cit.

With regard to diet during the height of the attack nothing should be given for the first few hours until the more urgent symptoms have been relieved and then small quantities of milk, previously peptonised, may be given, the quantity being gradually increased as the patient improves. Many authors have recommended the use of opium or morphine during the height of the attack but I think that these drugs should not be employed for the relief of pain in this disease because their use will certainly check the peristaltic contractions and will increase the already existing constipation; and, moreover, as the persons who suffer from mucous colitis are nearly always of a neurotic temperament they are also persons who would speedily develop a habit and so would always seek relief from pains of a most trivial character in drugs of this description. Of late years in obstinate cases operations have been much recommended with a view to giving rest to the colon in the hope that by so doing a complete cure might be the result.

The operations which have recently been tried are two in number. The first consists of making a lateral anastomosis between the ileum and sigmoid. A valve-like opening is then made in the cæcum, into which a rubber catheter is placed, and the wound is sewn up, leaving the catheter in the cæcum, as in the case of a gastrostomy; by this means the colon is given complete rest and thorough irrigation of the large bowel may be performed. The result of this operation has not been satisfactory except temporarily; and on fully considering the nature of the disease a complete cure could hardly be expected; for the mucous secretion takes place as a result of a secretory neurosis and not from any local affection of the colon, and therefore any treatment which is directed towards giving the large bowel complete rest will not only not cure the disease but will be more likely to predispose the patient to a similar attack; moreover, the mental effect on the patient cannot be very beneficial, and the nutrition of the patient must also suffer very materially from cutting out so large an absorbing surface from the alimentary tract.

The second operation, which is being tried, is more simple in nature and consists in opening the abdomen and bringing the appendix to the surface and suturing it in position. Having secured it the distal end is removed, and so the appendix is made to take the place of the indiarubber catheter of the first operation. In this operation the colon is not given complete rest as no anastomosis is made with the sigmoid. The results from this operation ought to be more satisfactory than in the former case, because the functions of the colon are not interfered with and irrigation of the large intestine can be carried out very fully. Unfortunately the results of this operation are not known yet as it has only recently been undertaken; but even if is secures a more rapid disappearance of the symptoms during an attack the result will not be permanent unless the further treatment of the patient is correctly carried out; and this treatment must be directed towards securing a daily action of the bowels, combating the peculiar nervous condition present, and to removing any obvious organic disease which might have a deleterious effect by reflexly inducing the neurosis.

In the first place a suitable diet must be recommended and about this the opinions of the various authors of papers on the subject are diametrically opposed; for example, von Noorden[28] recommends a diet consisting of indigestible materials which leave a large residue, and he says "that the change from the patient's ordinary diet should be made suddenly, for then the unpleasant consequences are not nearly so lasting; but the nausea, sense of fulness, rolling noises, occasional pain and dyspepsia pass off in from two to four days: whereas, if the change from a light diet to a very indigestible one is made gradually the unpleasant symptoms remain for a much longer period." Langenhagen,[29] on the other hand, says: "The diet is to be carefully regulated, so as to avoid all indigestible material or such as could possibly produce fermentation." This latter form of diet certainly appears to be more in accordance with the views already expressed in this thesis; for giving a carefully selected diet of highly nourishing substances must be the best means of improving the patient's nutrition and so of improving the neurasthenia or other disease of the nervous system. A daily evacuation of the bowels is indispensable; and to attain this object full use of aperients must be made; and the particular one which has produced the best results in my hands is certainly castor oil, given in half-ounce doses daily, in the early morning and continued for weeks, or months, or even after apparent recovery has taken place. If castor oil cannot be tolerated one of the other aperients must be tried, such as cascara sagrada, calomel, or the saline aperients, &c. Occasional use of the enema is also of great assistance. Abdominal massage is certainly beneficial and should be performed for half an hour daily until the action of the bowels becomes regular. High-frequency currents have been recommended and a few of Hale White's patients derived some benefit, but in the majority no satisfactory result has been obtained from their application. Intestinal antiseptics are worse than useless.

With regard to the treatment of the nervous symptoms hydrotherapy and general massage are most useful, and patients are best treated away from home where they can secure greater freedom from business or social worries. If it is found impossible to treat both the nervous condition and at the same time to give proper attention to securing a daily action of the bowels every effort must be made to empty the large intestine, and doing this will so improve the general condition of the patient that in the majority of cases there will be an improvement in the nervous condition as well. If the disease is associated with any organic trouble, such as appendicitis, moveable kidney, &c., these conditions should receive the appropriate treatment, operative if necessary, and if general enteroptosis exists an abdominal belt should be worn.

## CASES.

CASE 1.—The patient was a married woman, aged 54 years. At the age of 21½ years she had acute rheumatism. 21 years ago she miscarried at ten weeks. The cervix was much torn in removing the placenta after five days and the uterus prolapsed with much bleeding from a tear in the cervix. 20 years ago she had a right femoral hernia. 15 years ago she suffered from dull throbbing pains all over the abdomen constantly, with paroxysms of colicky pain preceding the passage of mucus which was first passed at this date. The mucus was passed in casts regularly for years at Easter, August, and Christmas—i e., during her children's holidays Intestinal sand was first passed 12 years ago. It was red in colour and variable in quantity; she had only passed sand three times. 12 years ago she alleged that she had peritonitis. She had had a moveable right kidney for eight years. She had passed two large gall-stones, the first eight years ago and the second one and a half years ago; it measured one inch long and three-quarters of an inch in thickness, and was accompanied by blood. She had been subject to fainting attacks for years, with feelings of cold and numbness all over, which passed off, and she sweated afterwards. She never lost consciousness. Occasionally before defæcation she had violent attacks of palpitation of the heart accompanied by great pain in the chest. There had been much improvement since oleum ricini had been administered freely and irrigation of the bowel had been performed. She still had attacks of colicky pain accompanied by the passage of mucus at intervals

CASE 2—The patient was a married woman, aged 62 years. She had always been neurotic and constipated. 12 years ago she had much abdominal pain, colicky in nature followed by the passage of scybala and mucus. The mucus was in long casts and shreds intermingled with fæcal material and a little blood. There was much tenderness along the course of the colon, especially over the sigmoid flexure, in which hard fæces could be felt. General enteroptosis was present and she suffered with hæmorrhoids With regard to her present condition she is very much improved and has not passed any mucus in the stools for 20 months. She is always constipated and hard scybalous masses are frequently present, the bowels only acting after the administration of an aperient. Abdominal massage has been performed for half an hour daily for two months and an abdominal belt is worn.

---

[28] Von Noorden: Op. cit.
[29] Langenhagen: Op. cit.

CASE 3. The patient was a married woman, aged 68 years. She had always suffered with dyspepsia and constipation. Some years ago she had a fissure ani followed by hypertrophy of the sphincter ani. During an attack of influenza two and a half years ago she became more constipated and had much abdominal pain, which was colicky in nature, and was followed by the passage of much glairy and gelatinous mucus. This attack passed off in a few days after the administration of castor oil, and enemata of soap and water. Nearly two years ago she had a fæcal accumulation, almost amounting to intestinal obstruction. This passed off in a week with enemata of soap and water to which half an ounce of turpentine was added, and oleum ricini was given by the mouth. Later the pains in the abdomen increased and more mucus was passed in the stools. The mucus was in shreds and also in masses resembling frog's spawn. The administration of castor oil and enemata was continued for some months. She is now much improved, is still taking castor oil every other day, and she has not passed mucus for more than one year.

CASE 4.—The patient was a married man, aged 60 years. He always had been constipated and markedly neurotic. Nearly two years ago, while straining at a stool, he fainted, and it was then noticed that there was paresis of the muscles of the left side of the face, the left arm, and the left leg. The muscular power returned in a few days. One year ago he had a similar attack and the muscular power again returned in a few days. Hæmorrhoids developed ten months ago which at times bled profusely. One and a half years ago he had pains, dull and aching in character, all over the abdomen, and once or twice during the 24 hours attacks of sharp colicky pain. The stools at this time consisted of hard fæces, much mucus (in shreds and occasionally in hyaline jelly-like masses), and blood, which apparently came from the hæmorrhoidal veins. The passage of mucus continued for one week. The patient has much improved under the administration of castor oil, which he still continues to take each morning, and he has not passed mucus for more than one year.

CASE 5.—The patient was a single man, aged 34 years. He had had enteric fever six years ago and rheumatic fever four years ago. The bowels acted regularly as a rule but occasionally he had attacks of diarrhœa. He had attacks of pain at intervals of two months, which was dull and aching in character, over the whole of the abdomen, and occasionally sharp pains. These attacks of pain usually lasted two weeks. The pain made him sweat and when the attacks came on be suffered from vomiting after meals and constipation. He had never had hæmatemesis or melæna. There was tenderness over the epigastric region and the colon could easily be felt throughout its whole length. He passed much mucus in the urine and also some by the bowel during the attacks. The patient was discharged from the hospital much improved, the treatment being dietetic and aperient, combined with copious enemata of sodium bicarbonate in water every night and later of protargol half a drachm to two pints of water.

CASE 6.—The patient was a woman, aged 39 years. She had suffered for the last two years with indigestion, flatulence, and constipation, and she could not walk far. She had had violent pains in the region of the stomach, which had no relation to food, but were worse when she was run down. There were also aching pains and tenderness all over the abdomen. An examination revealed gurgling and splashing sounds along the whole course of the colon. There was no definite tenderness over the sigmoid. Glairy and sticky mucus was passed in the stools. The patient was discharged much better after treatment, which consisted of aperient medicines, irrigation of the bowel with saline solution every morning, and soap-and-water enemata every night, which later were changed to enemata of olive oil. Swedish massage was applied to the abdomen every day.

CASE 7.—The patient was a woman, aged 35 years. Two years ago she had an operation for appendicitis and a growth of the inside. One year and three months ago nephrorrhaphy was performed on the right kidney. Ever since the second operation she had had pains in the abdomen, which were not particularly worse after food but were worse on exertion. She had a poor appetite and the bowels acted regularly. There was tenderness over the region of the right ovary but no uterine or pelvic trouble. There was general enteroptosis and much mucus in the stools. The pain still continued. With regard to her present condition, there was not much improvement with regard to the pain on discharge from the hospital, but the mucus in the stools became very much less. The treatment consisted of aperient medicines and hot fomentations to the abdomen.

CASE 8.—The patient was a female, aged 38 years. She had always been subject to fits and had suffered from nervous debility all her life. The bowels were very irregular, generally constipated. She had occasionally passed bright blood in her stools. She had been ill, on and off, for years. For eight years she had had burning pains in the right side of her abdomen with frequent intervals of freedom from pain. The pains had been worse during the last three months. She had pains also at the bottom of the back half an hour after food. She suffered a great deal from sick headaches, which lasted 24 hours, about once a fortnight, but she never vomited at other times. The tongue was coated and the teeth were carious. She passed much mucus in the stools like membranes On examination tenderness was marked on pressure over the stomach and the transverse and descending colon. The sigmoid felt woolly under the fingers. She was much improved under treatment with oleum ricini, saline enemata twice a day, hot fomentations to the abdomen, and general massage for half an hour daily.

CASE 9.—The patient was a female, aged 27 years. She had been quite well till ten years ago. The attacks then began. She had one interval of freedom from pain of four years' duration. She was in the London Hospital for the same complaint two years ago. She had been ill for seven weeks with pains in the stomach, which were sometimes of a colicky nature, and she also felt a constant aching pain in the abdomen. The bowels were rather constipated. The pain came on when she was run down and there might be intervals of freedom from pain for several weeks. She passed much mucus in her stools like membranes and there was also a large quantity of mucus passed in the urine On examination there was much tenderness over the whole of the colon, and especially over the cæcum. She was now greatly improved. There was no mucus in her stools on her discharge from the London Hospital. The treatment consisted of oleum ricini, hot fomentations to the abdomen, saline enemata daily, which were later changed to half-pint rectal injections of protargol ½ per cent., and general massage for half an hour night and morning.

CASE 10.—The patient was a female, aged 35 years. She had never had a similar attack before but had suffered from measles, tonsillitis twice, and anæmia eight years ago. The bowels were always very constipated and she had been in the habit of taking aperient medicines freely. There had been slight wasting (three pounds in eight months). She had been ill on and off for 15 months with pain in the epigastrium, radiating to the back, about half an hour after meals, and especially after dinner. The pains were relieved by pressure. The appetite was poor and she vomited after a heavy meal, on an average about once a month. On examination the abdomen was rigid and splashing sounds were elicited in the umbilical region. The teeth were carious and the tongue was clean. Much mucus was passed in the stools in membranous casts and calcareous deposits were noticed occasionally. She improved greatly under treatment with aperient medicines, soap-and-water enemata every morning, and olive oil enemata every night.

CASE 11.—The patient was a married woman, aged 28 years. She had one child, eight years old. She had had two miscarriages, the last being five years ago. She had had pain in the rectum since the last miscarriage. The pains were like labour pains and were increased by walking or sitting down. She passed mucus in the stools in shreds 12 months ago. On examination tenderness was found over the ascending colon and the sigmoid felt like a cord. On sigmoidoscopic examination the mucous membrane was red, polypoid, and apparently thickened. She had been curetted twice for foul vaginal discharge. She was operated on on June 24th, 905 (ileocolostomy). (A lateral anastomosis was made between the ileum and the middle portion of the sigmoid.) The passage of mucous and the pains ceased for a time. She was readmitted on August 23rd, 1905, passing much mucus in the stools which resembled membranes. She also suffered with severe abdominal pains. The bowels never acted without aperients. She was discharged much relieved after treatment with aperients and saline injections every morning which later were changed to injections of protargol ½ per cent.

CASE 12.—The patient was a female, aged 23 years. She had had two similar attacks before, the first three years ago and the second 12 months ago. The bowels acted regularly as a rule but when the attacks came on she was constipated. She was admitted to the London Hospital with pains in the stomach and vomiting. The vomiting always began directly after meals. Two months ago she vomited about an egg-cupful of blood and since then occasional streaks. The pain was felt in the stomach and often in the lower part of the abdomen, and through to the back. She also had an aching pain in the abdomen. The pains were not relieved by vomiting and they bore no relation to her meals. The stools contained much mucus and residue of cellulose. An examination revealed gurgling in the transverse and descending colon. There were no enteroptosis and no anæmia. The teeth were good. The tongue was large, flabby, and coated. She improved under treatment with aperient medicines, and saline injections every morning, and soap-and-water enemata every night.

CASE 13.—The patient was a married man, aged 40 years. He had been ill on and off for eight years. He had had several slight attacks, passing a little blood and much mucus in his stools, accompanied by colicky pains in the abdomen. He had always suffered from indigestion, flatulence, and constipation. He had been having attacks about every two months of severe colicky pains in the abdomen, and the stools contained much gelatinous mucus. On examination the abdomen was somewhat distended with flatulence. The stomach was dilated. The liver and spleen were not enlarged perceptibly. There was definite tenderness over the sigmoid, which could easily be felt. The tongue was slightly coated with a light brown fur. The patient was very much improved after taking castor oil three times a day.

CASE 14.—The patient was a man, aged 40 years, an ex-soldier. In Egypt in 1885 he had a very slight attack of dysentery and no relapse. His bowels were constipated as a rule. He was seized with pain in the abdomen and diarrhœa, with nausea. The pain was constant in the lower part of the abdomen and was of such severity that he sweated very much. The stools contained much mucus and a little blood. On examination the descending colon and sigmoid were found to contain hard fæces and hard fæces could be felt per rectum. The temperature was normal. He improved very much under treatment, and on his discharge there was no mucus in the stools and he had a good appetite. He was treated with aperient medicines.

CASE 15.—The patient was a married woman, aged 23 years. At the age of 13 years she suffered from chorea, which was followed by mitral regurgitation. Five years ago she had an ulcerated throat, a miscarriage, and dysentery, and she had never been quite well since. A fortnight before admission she had diarrhœa (from 10 to 13 stools in 24 hours). She had pains in her stomach and in the left side and lower part of the abdomen. She occasionally vomited with relief of the pain for a time. The stools contained a little blood and much mucus in shreds, with little fæcal material. An examination of the abdomen revealed no abnormality and nothing abnormal was discovered on rectal examination. The uterus was small and retroverted and the left ovary was tender. On her discharge from the London Hospital she was much relieved. The treatment consisted of oleum ricini daily, followed by bismuth subnitrate, saline injections every morning, followed by olive oil, four ounces, and water to ten ounces.

CASE 16.—The patient was a single woman, aged 19 years. She had always suffered with bad indigestion, which became worse four months ago. She had always been a nervous girl, suffering with headaches and peculiar sensations in the feet. At the age of eight years she had round worms At the age of ten years she had diarrhœa for four months in the summer and passed blood in her stools. From the age of 10 to 15 years she had bilious attacks with vomiting. At the age of 15 years she had enteric fever and she had been unwell ever since with constipation. One year ago she had gastric ulcer. The catamenia only occurred once in three or four months; she had severe pain for one or two days before, and for three or four days after, the period had commenced. The pain was not relieved by lying down nor was it increased by walking. She was ill for four months before admission to the London Hospital suffering with a poor appetite, constipation, and pains in the abdomen of a colicky nature preceding defæcation. The stools consisted of hard fæces and much mucus which resembled pieces of skin. On examination the tongue was dry and coated. There was superficial tenderness over the whole of the left side of the abdomen and over both ovaries. The pulsations of the aorta could easily be felt. The spleen was a little enlarged. She did very well under treatment with oleum ricini and occasional enemata of soap and water, and on her discharge from the hospital the constipation was relieved, there was no pain, and the stools did not contain any mucus.

CASE 17.—The patient was a single woman, aged 38 years. At the age of six years she had measles, which was followed by deafness and a discharge from her left nostril which still continued. When she was a child she had a great many abscesses on her neck. arm, and leg. At the age of 18 years the abscesses ceased to make their appearance and at this time she had attacks of bleeding from the rectum which sometimes continued for four or five weeks. She was not anæmic; she suffered from nose bleeding until she was 21 years of age. The catamenia were not regular but were often profuse She had an operation performed for this condition At the age of 23 years she had attacks of nervous prostration and lost the use of her limbs and voice for a time. At the age of 25 years she had slight intestinal obstruction. She had always bled very much after having teeth extracted. She had two sisters and one brother who suffered with bleeding from the rectum. She had always been very neurotic, suffering very much with flushing of the face followed by coldness. She had always had indigestion and said that the stomach felt like a stone and her face was very red She had constipation and pain before the hæmorrhage started and diarrhœa afterwards. Her illness began after the attack of intestinal obstruction, at the age of 25 years, with cough, and pain in the left lumbar region which felt like sharp needles. The pains were also felt in the left iliac region and down the left leg, and they always preceded the hæmorrhage from the bowel. She suffered greatly with thirst. The stools on her admission to the London Hospital contained membranous shreds of yellowish colour which were of mucoid consistence and were four inches in length. There was no blood in the stools. An examination of the abdomen revealed nothing except tenderness all over the left side on palpation. On her discharge from the hospital she was much relieved. The treatment consisted of aperient medicines, and later salol was tried but this was changed and a pill was given containing cupri sulph., gr. $\frac{1}{2}$, and opii, gr. $\frac{1}{4}$. Later oleum ricini was given daily, and saline injections, one drachm to the pint, twice a day.

CASE 18.—The patient was a man, aged 42 years. He had always suffered with indigestion. Six years ago he had inflammation of the bowels. He was quite well until a week before admission to the hospital; he then felt sick and had abdominal pains, chiefly in the hypogastric region. The bowels acted regularly until the attack began and then he suffered with diarrhœa. The stools contained a considerable quantity of mucus and a little blood. An examination revealed tenderness over the whole abdomen but especially marked in the hypogastric area. The tongue was pale and furred. He got well with treatment, which consisted of oleum ricini followed by bismuth carbonate and later by saline aperients.

CASE 19.—The patient was a man, aged 62 years. He had been all over the world and had dysentery 20 years ago. He had not had any other illnesses. The illness began four or five years ago. He suffered alternately with diarrhœa and constipation and had lost three stones in weight during the last five years. He had nausea when the diarrhœa commenced, and when he was constipated the stomach got very large and he suffered from flatulence. He had sharp pains in the stomach preceding the act of defæcation, and the pains were relieved afterwards. The stools contained a little blood and much mucus. On examination there was tenderness in the left iliac fossa. The liver was palpable and the dulness extended to near the umbilicus. There was a certain amount of gurgling in the lower abdominal region. He improved under treatment which consisted of aperient and antispasmodic medicines.

CASE 20.—The patient was a female, aged 30 years. She had not been well for the past ten years. She had had dysentery in South Africa four years ago. She had been ill for 16 weeks with pains in the abdomen which came on in very severe attacks. The bowels were always constipated and the stools contained much mucus which was of the consistence of jelly. She also suffered from neurasthenia. She was greatly relieved on her discharge from the hospital. The treatment consisted of oleum ricini, warm fomentations every four hours to the abdomen, enemata of olive oil, six ounces every night, enemata of soda one drachm to the pint every morning, and general massage for half an hour daily, followed by pilula Blaud with cascara.

CASE 21.—The patient was a single woman, aged 34 years. The first attack occurred six years ago and she had not been well since except during the intervals between the attacks. The intervals were about three months in duration. The bowels were always constipated. As soon as she began work again or took any solid food the attacks came on. She was taken ill in the night with intense pain in the stomach which caused her to faint. There was much retching and she vomited. The pain was of two kinds—a constant pain, felt chiefly in the upper and left part of the abdomen, which had lately increased in severity; and an acute smarting and stabbing pain, which came on ten minutes after food, which was felt chiefly in the epigastrium, and in about two hours time in the lower part of the abdomen. She had piles which bled and she had suffered with frontal and temporal headaches. When she took aperients a dragging pain was felt in the region of the sigmoid. The stools on admission to the London Hospital contained large constipated masses and much mucus. On examination, at one time nothing abnormal was felt in the abdomen, and subsequently there were a gurgling distension in the ascending colon and spasm in the sigmoid. The tongue was moist and the teeth were false. She did well under treatment which consisted of aperient medicines, hot fomentations to the abdomen, and soap and water enemata daily.

CASE 22.—The patient was a single woman, aged 32 years. She had been ill as long as she could remember, suffering with dyspepsia and a poor appetite. The bowels acted regularly as a rule. Two months before her admission to the London Hospital she suffered with pains in the stomach, which were sometimes dull and aching in character, and at times they were very sharp, "doubling her up," and when the acute pain was over she sweated and felt as if she had been beaten. The pains were sometimes brought on by even a very little food. She did not vomit but suffered from nausea. The stools contained very much thick, tough, gelatinous mucus but no membranes. On examination there was some deep tenderness in the epigastric region; the stomach was not dilated. There was a sensation of gurgling in the right iliac fossa with spastic distension of the colon. This was also noticed to a less extent over the sigmoid. She did well under treatment with aperient medicines and hot fomentations to the abdomen.

CASE 23.—The patient was a single man, aged 30 years. He was a strongly built athletic man accustomed to the usual games. He was decidedly of a nervous temperament, and frequently had flushings of the face and a slight catch in the voice. He had had constant attacks of diarrhœa accompanied by the passage of slime in the stools. Eleven years ago he was seen by Sir Frederick Treves who said that he had appendicitis and he was advised to have appendicectomy performed when the attack had subsided. The attack lasted ten days and as he felt quite well afterwards he refused operation, but very soon the attacks of pain, diarrhœa, and passage of slime came on at intervals of some months at first but lately every week. The attacks of diarrhœa came on more frequently (as many as 15 stools being passed in a day). The attacks were accompanied by pain and slight tenesmus. The pain was chiefly felt in the right iliac fossa but also in the left when the attacks were on. The attacks always came on when he was at work in London but not on a holiday. The stools contained a large quantity of mucus but no definite casts were passed while he was under observation. The bowels were constipated between the attacks. On examination the abdomen moved normally. There was distinct tenderness in the right iliac fossa. The right rectus was more rigid than the left at the lower part. To the outer side of the right rectus muscle an indefinite mass could be felt which was distinctly tender on palpation. He was operated on on Oct. 18th, 1906. The appendix was found in a mass of adhesions, the distal end being represented by a fibrous mass. The appendix was removed. Convalescence was uninterrupted and he has remained free from the attacks ever since.

CASE 24.—The patient was a married woman, aged 31 years. She had been ill ever since her first child was born seven and a half years ago. She got worse with each successive pregnancy. She had had anæmia, gastric ulcer with hæmatemesis, pains in the stomach, &c., and had always been constipated. She was in bed for four months last year with a miscarriage and an offensive vaginal discharge. She was markedly neurotic and constipated and suffered from abdominal pains which preceded defæcation. The stools on admission to the London Hospital contained much granular débris and mucous casts. On examination the tongue was tremulous and furred. There was slight oral sepsis, and tenderness on palpation was noticed over the lower descending colon. The stomach was not dilated. The kidneys and liver were not palpable. Later there was tenderness over the ascending colon and sigmoid. A sigmoidoscopic examination showed nothing abnormal except slight superficial erosions. She was treated with aperients, enemata of soap and water, and olive oil, and turpentine stupes were applied to the abdomen. As her condition on her discharge from the hospital was not satisfactory she was advised to have an operation performed (appendicostomy).

CASE 25.—The patient was a single woman, aged 30 years. She had suffered for years with pains in the stomach after food and with dysmenorrhœa. She was markedly neurotic. She had been ill for two years. She had suffered much from constipation and abdominal pains, which were felt chiefly in the sides of the abdomen and were "bearing down" in character and were felt both before and after defæcation. The stools contained scybala, mucus, and a little blood. On examination the tongue was moist and coated. The stomach was not dilated. The sigmoid was loaded with hard fæces and there was gurgling in both iliac fossæ. She improved greatly under treatment with aperient medicines and enemata of soap and water every morning.

St. Neots.

---

# NOTES ON, AND REMARKS SUGGESTED BY, A CASE OF MALIGNANT ENDOCARDITIS (DIPHTHERITIC) WITH TERMINAL CEREBRO-SPINAL SYMPTOMS.

BY J. T. C. NASH, M.D. EDIN., D.P.H. CANTAB,
MEDICAL OFFICER OF HEALTH OF SOUTHEND-ON-SEA; MEDICAL SUPERINTENDENT OF THE BOROUGH HOSPITAL FOR INFECTIOUS DISEASES, ETC.

THE following experience which I believe to be very rare justifies a few remarks on this subject.

On March 14th, 1907, I was informed that a male child, aged between three and four years, had died suddenly during the night, having the previous day exhibited marked retraction of the head, strabismus, and other signs of cerebro-spinal meningitis, including a copious petechial rash all over the body. I suggested a post-mortem examination and this was arranged for and carried out on the 16th, the attending medical man and myself being present. The boy had been medically attended for about a week on account of headache, loss of appetite, furred tongue, constipation, and a fugitive erythematous rash, the provisional diagnosis being "gastric disturbance." The later symptoms of occasional delirium, restlessness, and tenderness along the back, with a continuance of drowsiness, headache, and fever, had suggested the possibility of malignant endocarditis, but the stethoscope failed to find any clinical evidence of valvular defects though carefully searched for on the day before the child's death. Slight jaundice was observed two days before death; retraction of the head and strabismus about 36 hours before death; and the petechial rash and slight opisthotonos only on the last day of existence.

At the post-mortem examination we observed a copious petechial eruption of the skin of wide distribution. There was no obvious discharge from the nose or ears, and the medical man who had been in attendance said that he was unaware of any. There was no obvious enlargement of the glands to be felt anywhere. On opening the skull and examining the brain a few petechiæ and some slight hyperæmia were observed in connexion with the cerebral meninges and a few of the posterior convolutions were slightly adherent. Prior to opening the skull I had removed under aseptic conditions by lumbar puncture about two cubic centimetres of cerebro-spinal fluid which was observed to be blood-stained and slightly turbid. I inoculated with this fluid two sterile blood-agar tubes and two ordinary broth tubes, which I subsequently conveyed to the laboratory for further investigation. On opening the abdomen the omentum was observed to have a dirty, degenerated appearance. The intestines were empty and their walls were dotted with numerous petechiæ; otherwise they appeared normal. The spleen was slightly enlarged, very dark, and congested and firm. The liver was not removed from the body but it appeared to be healthy. A similar remark applies to the lungs. The pericardial sac contained a slight excess of fluid. The heart was removed and found to exhibit some signs of fatty degeneration. Its walls showed also a few petechiæ. On slitting open the aorta some well-marked vegetations were found on the free edges of the aortic cusps. The mitral valves were found to be thickly coated with similar deposits. With the aid of a sterile swab I inoculated another blood-agar tube from the site of these vegetations. Each kidney was found to be extremely hæmorrhagic on the surface, under the capsule, which stripped fairly easily. The suprarenal bodies were looked for but were not recognised. The post-mortem appearances plainly indicated a septicæmic or embolic condition, the cardiac lesions being characteristic of malignant endocarditis.

The question naturally arose, where was the primary infecting focus? and what was its nature? There being nothing obvious I felt certain that there must have been some sore-throat or aural antecedence which had not been deemed of any consequence, and on cross-examining the parents I ascertained that the child had had earache and discharge from the ear about three weeks previously. The ear had apparently ceased discharging before the medical attendant was called in and had been so little thought of that the matter had not been even mentioned to him. The parents were certain that the child had never complained of sore-throat, though in order for a middle-ear to become infected it almost necessarily follows that in the absence of an external lesion infection must have been conveyed in the first place from the naso-pharynx. After incubation at 37° C. for 16 hours I obtained a copious growth of a pure culture of Klebs-Löffler diphtheria bacillus from the cerebro-spinal fluid and almost a pure culture of the same organism from the heart swab. On account of the naked-eye appearances at the post-mortem examination the attending practitioner had naturally certified the cause of death as malignant endocarditis, but the subsequent bacteriological analysis revealed the interesting fact that the infecting organism was the diphtheria bacillus.

One of the chief points of interest is that the case was reported to me after death because of the suspicious resemblance of the later symptoms to cerebro-spinal fever, as shown by the retracted head, the strabismus, headache, photophobia, raised temperature, and petechial rash. Bacteriological investigation clearly showed that the diphtheria bacillus had certainly invaded the central nervous system and embolic plugs laden with diphtheria bacilli would be sufficient to account for these symptoms. As the necropsy was conducted in a small room in a cottage the vertebral column was not opened up. Perhaps this was not altogether a disadvantage, for it lessened the possibilities of contamination of the cerebro-spinal fluid. No evidence of any diphtheritic membrane was seen elsewhere. The attending practitioner had examined the throat with no result during life.

The case here reported might easily have been certified without post-mortem examination as a death due to cerebro-spinal meningitis. Even after post-mortem examination it was certified as death from malignant endocarditis but subsequent bacteriological investigation seems to indicate that death was due to a diphtheritic septicæmia. The case recorded once again suggests that isolated cases of death preceded by symptoms of cerebro-spinal meningitis should not be attributed to epidemic cerebro-spinal fever without adequate bacteriological proof. To justify the diagnosis of epidemic cerebro-spinal fever it would appear to be quite necessary that the presence of the diplococcus intracellularis of Weichselbaum should be demonstrated.

It is greatly to be regretted that the circumstances of the necropsy in the case I have recorded rendered it impossible to make a full examination of the middle and internal ear and of the naso-pharynx. These important structures, the porchway or entrance for probably the majority of infective bacteria, are, as a rule, neglected in ordinary post-mortem examinations. Their importance should, I venture to submit, form a pretext for invariable examination in all cases of an infective or doubtful nature.

The finding of the diphtheria bacillus in the cerebro-spinal fluid of a case dying with symptoms of cerebro-spinal meningitis naturally suggests a possible explanation why diphtheria antitoxin has been found of service in some cases of cerebro-spinal meningitis, though I am quite prepared to believe that such treatment might have beneficial results quite irrespective of the diphtheria bacillus and in the actual presence of the diplococcus intracellularis.

Another interesting observation to call to mind is the diphtheroid bacillary infection hypothesis of W. Ford Robertson, G. D. McRae, and J. Jeffrey in connexion with general paralysis and tabes. The existence of a true diphtheria bacillus in pure culture in the cerebro-spinal fluid is in itself an interesting and important fact. Its presence as the predominant organism in endocardial vegetations is also both interesting and suggestive. Its low virulence for the guinea-pig, as tested by experiment on two guinea-pigs by Dr. W. Bulloch, is equally interesting and affords pabulum for reflection. I have to thank Dr. Bulloch for kindly conducting the animal experiments in connexion with this organism and I am very greatly indebted to him for the weight of his authority in corroborating its identity as a true diphtheria bacillus.

It seems worth while to set down in detail the results of bacteriological investigation.

1. The organism was isolated in pure culture on blood agar direct from the blood-stained cerebro-spinal fluid of a child who had died with marked cerebro-spinal symptoms after a previously ill-defined illness.

2. After 16 hours' incubation at 37° C. very characteristic colonies of the bacillus diphtheriæ were found on the blood agar. The appearance of the colonies at once suggested bacillus diphtheriæ. This was forthwith confirmed by:—

3. *Microscopic appearances.*—The bacillus was Gram-positive. Films stained by Löffler's blue, by Neisser's and by Gram's methods exhibited large long diphtheria bacilli conforming to Westbrook's types A and C, Neisser's and Babes-Ernst bodies being particularly well marked.

4. *Cultural characters.*—(1) The organism was aerobic and facultative anaerobic; (2) it grew on gelatin at room temperature without liquefaction; (3) it produced marked acid in glucose broth and in milk; (4) it produced slight acid in saccharose broth; and (5) it did not clot milk.

5. *Animal experiment.*—For details of its comparative pathogenicity I am entirely indebted to the kindness of Dr. Bulloch who reports as follows: "I have carefully examined the culture you sent and have no doubt that it is a genuine diphtheria bacillus of slight virulence. Morphologically it is the long variety of Klebs-Löffler with marked Neisser's granules, Gram +. Marked acid production in glucose broth. A culture (in broth) 24 hours old was injected into two guinea-pigs in doses of 1 c.c. and 5 c.c. respectively. In both cases marked infiltration occurred with loss of weight. The 1 c.c. guinea-pig was killed in 24 hours and the infiltration at the point of inoculation was a sanguinolent œdema. No bacilli, however, were seen in smears and a culture was recovered with some difficulty. The suprarenal bodies (usually much congested) were not affected. The other guinea-pig four days after inoculation showed slight infiltration only."

I might add that this bacillus even in the original culture when only 16 hours old exhibited unusually large and grotesque forms which appeared to me to favour the idea that in the life-history of the bacillus it may under certain conditions assume a hyphomycetic form.

There can, I think, be but little doubt that the history of the case I have recorded may be written as follows. The child in the first instance suffered from a mild form of diphtheria which was untreated, and the bacilli found their way *viâ* the Eustachian tube to the middle ear, giving rise to otitis media. Thence by way of the blood or lymph bacilli were carried to the heart, there setting up endocarditis and finding lodgment on the valves. Here they produced vegetations some of which by embolism were carried to the various organs affected, including the brain and spinal cord. Such distribution of the diphtheria bacillus is thought to be extremely rare. Indeed, *malignant* endocarditis is an extremely rare complication of any of the usual infective fevers. Cerebro-spinal symptoms in association with malignant endocarditis have been observed, of course, but I am not aware that the diphtheria bacillus has been demonstrated as the infecting organism in any recorded case previous to the present communication. If any such cases have been recorded previously the rarity of the condition appears to me to justify the present record.

Southend.

# A CASE OF DOUBLE OPTIC NEURITIS; SYMPTOMS OF CEREBELLAR TUMOUR; COMPLETE RECOVERY.

By CHARLES HIGGENS, F.R.C.S. ENG.

A BOY, aged six years, was brought to see me on May 22nd, 1894. I was told that it had been accidentally discovered that he could not see properly and that six weeks before his sight appeared to be perfect. He could distinguish none of the test types. In his right eye the optic disc was swollen and its outline was blurred. The left disc was red but its outline was well defined and it was not swollen. He had some nervous symptoms resembling chorea; there was no albumin in the urine. I advised that he should consult a physician and did not see him again at that time. Two years later, on June 9th, 1896, I saw the patient's mother, who told me that he became quite blind but began to recover slowly and eventually got quite well. On Sept. 19th, 1904, I saw him again. He was myopic and I thought that his discs were rather pale. His vision was :—

$$\text{Right eye } \frac{6}{36} \text{ c} - \frac{75 \text{ cyl.}}{2 \text{ spn.}} \; \frac{6}{6}; \text{ left eye } \frac{6}{36} \text{ c} - \frac{75 \text{ cyl.}}{1 \cdot 50 \text{ spn.}} \; \frac{6}{6}.$$

I saw him again on May 8th, 1907. He was a tall well-set-up fellow of 19 years and appeared to be perfectly healthy. His discs were rather pale; his myopia had increased by 1 D. but his vision was $\frac{6}{5}$ with correcting glasses and both fields were normal. He told me that after I saw him in 1894 he was taken to Dr. Ferrier. I wrote to Dr. Ferrier and asked him if he would look up his notes of the case and let me know what he made of it, and he very kindly wrote to me as follows: "I first saw the boy in May, 1894; he then had double optic neuritis, more marked in the right eye, and some symptoms of cerebellar disease. In July of that year the cerebellar symptoms were marked, but the neuritis had disappeared and the discs were somewhat pale. He could only read J. 20. In March, 1895, his vision was $\frac{6}{12}$. He appeared otherwise well. My diagnosis was cerebellar tumour? Might it be a tubercular nodule which has become cretified?"

*Remarks.*—The duration of the boy's illness appears to have been under 12 months; as far as was known he was quite well six weeks before he saw me in May, 1894, and from Dr. Ferrier's report he had quite recovered by March, 1895; his vision being only $\frac{6}{12}$ was probably accounted for by a low degree of myopia.

The case is interesting chiefly on account of the complete recovery which took place; my experience of similar ones is that they almost invariably go blind and that some of them die, though often years after the appearance of the first symptoms. The patients wander about from hospital to hospital, or from one medical man to another, blind and staggering, and it is rare for the surgeon or physician who first sees them to see the end of them. I have been in the habit of pointing out blind staggering children and calling them cerebellar children, and in one or two cases in which I have seen a necropsy tumour in the cerebellum was found. In the case reported Dr. Ferrier's suggestion that it might be a tuberculous nodule which has become cretified is probably correct, but there is the possibility of congenital syphilis, though the patient shows no signs of it and I have not gone into the history.

Treatment, so far as I know, does no good, but one has to do something and if a case recovers under any kind of treatment so much the better. I have trusted mainly to mercury and iodide and in two cases have trephined with very marked relief, which was, however, only temporary, and the last time I saw the patients they appeared to be neither better nor worse for the operation.

Brook-street, W.

# A CASE OF LAND SCURVY

## OCCURRING IN A PATIENT AFTER A PROLONGED PERIOD AS AN IN-PATIENT IN A HOSPITAL AND AS A COMPLICATION OF A FISTULA IN ANO.

By J. BERNARD DAWSON, M.B., B.S. LOND.,
M.R.C.S. ENG., L.R.C.P. LOND.,
HOUSE SURGEON TO ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM, CITY-ROAD, LONDON, E.C.

WHAT is the determining factor in the etiology of scurvy as yet remains a problem of medical science. Whether the theory of chronic ptomaine poisoning or whether that of dietetic error be the truth is undecided by those who have studied the subject especially, evidence seeming to be equally strong for both. Experimental information resolves itself into two classes, that resulting from laboratory work proper and that gleaned from the logbooks of Arctic and other expeditions. The experiments of Harley and Jackson consisted in the feeding of apes with scorbutic and anti-scorbutic diets. Their results seem to be mitigated by the following facts: (1) that monkeys are not naturally carnivorous; (2) that the tinned meats used were allowed to become tainted after preservation and not before, as is the case of the doubtful canned food found in the cheapest shops or in marine stores; and (3) that the digestive economy of the lower primates seems to be capable of dealing with putrescent food.

Briefly, the evidence derived from the reports of travellers during the past six years is as follows. 1. Dr. Koettlitz, who accompanied both the Nansen and the British National Antarctic Expeditions, reports in reference to the latter that there was very considerable trouble from disablement of the crew from scurvy, notwithstanding the fact that limejuice occupied a prominent position in the rations served out daily. It was found out on investigation that the preserved meat supplied for the expedition was not beyond reproach. 2. The Jackson-Harmsworth Arctic Expedition yielded some interesting facts. When the relief ship reached them it was with the intention of getting back before the ice closed. In this they were unsuccessful and the vessel with her crew remained 12 months. The men who were encamped on the ice lived during this year, as they had for many months before, upon fresh bears' meat, taking no limejuice; they escaped any attacks of scurvy. Those who remained on the ship, refusing bears' flesh, chose to consume canned goods, often in an unwholesome condition, and notwithstanding the fact that a limejuice ration was served out daily, in the course of the year, all suffered and two died. 3. When Nansen and his companion Johansen left the *Fram* in their attempt to reach the Pole by sledge they were away 15 months, during which they existed entirely upon the flesh which fell to their skill as hunters and endured terrible hardship and toil, despite which they returned hale and whole.

In deducing from such statements as these it must be borne in mind that limejuice varies in quality and that the good intentions of the medical man in charge may have been rendered abortive by a sailor who disliked limejuice.

Such is the evidence of the ptomaine theory; evidence equally strong can be rallied upon the side of the dietetic supposition. 1. In 1795 Sir Gilbert Blane introduced a limejuice ration into the navy's diet-sheet, with the result that scurvy, which had been very prevalent, became comparatively rare. It was, however, pointed out by Aitken in 1872 that Blane at the same time greatly improved the food generally. 2. Lieutenant-Colonel Hamilton reports the following.[1] In 1885 he was in charge of the 23rd Pioneers, a Sepoy regiment, during an expedition among the hills of the northern frontier of India. Owing to the roguery of the native contractors the supply of vegetables arranged for failed. After a few weeks, in spite of the fact that fresh meat was abundant, scurvy showed itself among the troops. A small green cruciferous plant, found growing upon the hills, was then used as a spinach, with the result that rapidly the scurvy disappeared. 3. Dr. F. C. Sinclair in medical charge of a guano expedition to Walfisch Bay, S.W. Africa, states that his 400 Damara natives remained free from scurvy whilst the supply of freshly killed meat was good. His cattle, however, were carried off by rinderpest. The diet then consisted of peas, wheat-meal, porridge, rice, bread, biscuits, tea, and coffee, all sound food. In two months scurvy was prevailing among the negroes, with the exception of the native foremen who, sharing food with the whites, obtained a portion of the meat that was left. He, attributing the cause to the absence of meat, fresh or otherwise, pointed out that the Damaras are in the habit of eating to engorgement of the putrid carcasses of hunted animals without apparent harm and certainly without scurvy. Dr. Sinclair suggests that the transference of inland natives to the more rigorous climate of the coast, the conditions of the huts, and the heavy work in which they were engaged may have been accessory causes to the outbreak.

---

[1] Brit. Med. Jour., October, 1902.

It will be seen from the above that there is weighty evidence upon both sides and in support of both theories.

Roberts in his text-book gives the following three possible causes of scurvy: (1) the absence of vegetables or their ingredients, probably the malates and lactates; (2) the presence of toxic material in the food; and (3) the presence of a specific organism in the food or introduced in some other way. In support of the first two theories evidence has been given above; in support of the last there seems little to be said except the parallel between scurvy and other diseases known to be produced by a specific organism.

In the case reported below there is nothing in the history of the patient or in the treatment which she received to lend support to either the first or the third augument; but the presence of a septic focus around the rectum whence absorption takes place readily and freely suggests the possibility of the introduction of toxic material into the circulation. Whether such poisonous matter produced scorbutic symptoms or not it is difficult to determine, but since the other factors usually associated with an outbreak of scurvy were absent it is not unreasonable to suppose that its presence may have been the determining element. The reaction of the patient to treatment also is instructive, for she responded quickly to ordinary antiscorbutic measures. Apart from local treatment for the hæmorrhage, the patient was given the following: four half-drachm doses of calcium chloride in the course of 48 hours and a subcutaneous injection of a hundredth of a grain of ergotinine citrate, whilst two lemons and quantities of green vegetables were added to her diet. Under this treatment she speedily recovered in the manner detailed below. With the constitutional improvement the condition of her wound, which previously had been unsatisfactory and sluggish, underwent a corresponding change for the better. The use of calcium chloride was on account of the bleeding, and although unfortunately the alkaloid ergotinine was used as well, it is reasonable to accredit the rapid cessation of hæmorrhage partly at least to the use of the calcium salt. This is of interest because of the doctrine put forward by Sir A. E. Wright that the prominent feature in the pathology of scurvy is a reduced alkalinity of the blood, together with a reduced coagulability which allows of the spontaneous outpourings of that fluid. This view of the pathology of scurvy dovetails with the theory that its cause is absence of vegetable salts from the food; for the citrates, tartrates, and malates of herbaceous food become changed into carbonates in the blood. As, however, the food which the patient had been in the habit of taking does not seem to have been in any way scorbutic, the suggestion that absorption from a septic focus was the initiating cause receives support. The history and progress of the case are as follows.

The patient was admitted to St. Mark's Hospital on April 6th, 1907, with an unhealed wound after two operations for fistula in ano which had left her without sphincteric control. There was also some prolapse of mucous membrane. She was a spare woman of pallid aspect, showing evidence of loss of weight and prolonged suffering, but exhibiting no signs of disease other than the rectal mischief. She gave a history of typhoid fever ten years previously and some chronic bronchitis. Her present trouble began in September, 1904, with a fistula of moderate size. She was—during 1905 and 1906—treated at St. Bartholomew's Hospital, being admitted into the in-patient department during the October of each year. During the whole of this time there was a copious purulent discharge which progressively increased. In February, 1907, she came as an out-patient to St. Mark's Hospital and in April she was admitted as an in-patient. Her wound then was an extensive gap situated dorsally and to the left of the anus, involving the mucous membrane of about from half an inch to an inch of the rectum. Owing to the separation of the cut surfaces of the sphincter ani and to the extensive fibrosis around, there was no power of that muscle and therefore no control. The surface of the wound was unhealthy in appearance, having that peculiar aspect known as "callous." There was an abundant discharge of thin, offensive pus which had produced an irritable condition of the surrounding skin. On April 9th, 1907, a branch tract of the fistula was opened up, preparatory to an attempt to diminish the gap and restore the continuity of the sphincter. 19 days later such an effort was made, the wound being freshened and brought together with sutures. Some suppuration occurred necessitating the removal of three stitches, the wound then being a little smaller than before. For a fortnight following the operation the temperature ranged between normal and 101° F., then for a week it remained within a degree of 98·4; during the whole of which three weeks the wound continued to discharge freely, its surface retaining the sluggish appearance. The temperature now became irregular, ranging through two degrees; at the same time the patient assumed that inert listless condition commonly seen in typhoid fever. Soreness of the mouth was complained of, and on examination the gums were found to be tender and swollen, the tongue clean, and the pulse 80. The patient was given an alum mouthwash, whilst careful attention was enjoined as regards the cleanliness of the teeth. The temperature now became intermittent, the excursion being 3°. After this condition had lasted for seven days hæmorrhage began from the gums, which soon became profuse. On the following day blood began to flow from the rectal wound, soaking the dressings which were constantly changed. Simultaneously a purpuric rash appeared upon the face, shortly followed by petechiæ of wider distribution. The arms, especially the shoulders, and the legs, especially the buttocks and thighs, were mostly affected, the trunk being almost free from spots. With the onset of the bleeding the temperature became steady; the pulse was weak and irregular and it varied between 90 and 100, whilst the respirations were 28 per minute. In the course of 24 hours four half-drachm doses of calcium chloride were given, a hazeline mouthwash was used frequently, and at the onset of bleeding a hypodermic injection of ergotinine citrate was administered. At the point of entrance of the needle a hæmatoma of the size of half a walnut was produced. After the hæmorrhage had continued for three days it gradually ceased. The patient was then given an alum mouthwash and a mixture containing iron and quinine, whilst two lemons and extra vegetables were added to her daily diet. There was no return of hæmorrhage, the temperature and pulse became satisfactory, the mouth resumed its normal condition, and the patient's general condition greatly improved; her weight increasing, the mental outlook becoming bright and active, and her pallor less marked. Associated with this improvement there was a corresponding change in the wound, the reparative power of the tissues increasing, and healing being accelerated. Three weeks later the patient was able to go to the seaside, if not cured very considerably improved.

Three points of interest seem to arise out of this case. 1. The occurrence of scurvy in a patient whose food had been the same as customary among people of her class, for on special inquiry she stated that she was in the habit of taking plenty of good and fresh food. Moreover, she had been in hospital a month, where her diet was a plentiful one of milk, beef-tea, custard, jelly, and so on, before the onset of the scorbutic symptoms. 2. The possibility of the retardation of healing seen in certain forms of long-standing "callous" wounds being due to a scorbutic diathesis. 3. The possibility of the long-continued suppuration and mental distress being the cause of this diathesis, a vicious circle thus being produced.

I am indebted to Mr. F. Swinford Edwards, senior surgeon to St. Mark's Hospital, for permission to report this case.

# PRELIMINARY NOTE ON A LEUCOCYTOZOON FOUND IN THE BLOOD OF THE RED GROUSE (LAGOPUS SCOTICUS).

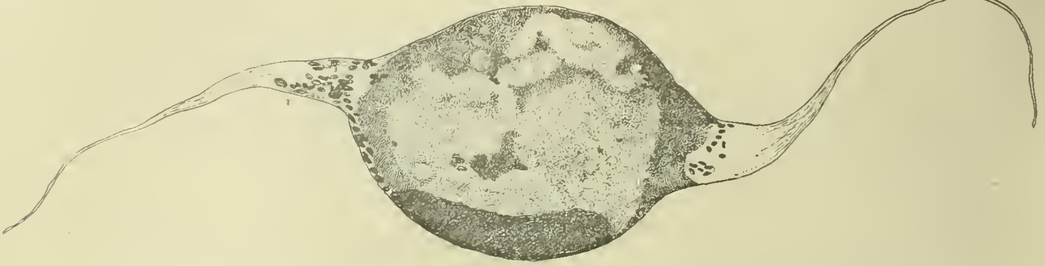
BY C. G. SELIGMANN, M.D., M.R.C.P. LOND.,
BACTERIOLOGIST TO THE COMMISSION ON GROUSE DISEASE,
AND
LOUIS W. SAMBON, M.D. NAPLES, F.Z.S.,
LECTURER TO THE LONDON SCHOOL OF TROPICAL MEDICINE.

WHILE examining blood films of a number of grouse sent to Dr. E. A. Wilson, field observer to the Grouse Commission, as birds suffering from grouse disease, a protozoal blood parasite of a genus hitherto unknown in the *Tetraonidæ* was discovered. The bird in which it was seen had been dead at least 48 hours, and post-mortem changes had taken place, but was not considered to have suffered from "grouse disease"—i.e., the form of epidemic disease described by Professor Klein in the grouse. No fresh blood films were examined but only dry films stained either with Leishman's or Giemsa's stain.

The protozoal organisms found were fully grown and sexually differentiated sporonts of a leucocytozoon. They were fairly abundant but in a state of degeneration and stained badly. The following is a brief provisional description: Macrogametes of an oval shape, more or less elongate, 19 μ to 25 μ in length by 12 μ to 16 μ in width. The cytoplasm has a coarse alveolar structure, stains intensely blue, and usually presents one or more clear spaces or vacuoles. Nucleus either rounded or oval and placed as a rule about the middle of the parasite. It stains very faintly and contains as a rule near the periphery a compact, deeply staining chromatin mass. Microgamatocytes slightly smaller than the female sporonts, with hyaline cytoplasm which stains very faintly or not at all and rarely contains vacuoles. The nucleus is considerably larger than in the macrogamete.

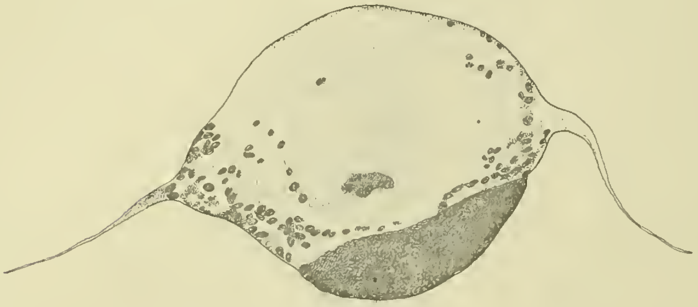
The parasites are contained in oval or spindle-shaped elements with the extremities usually drawn out into fine long threads not unlike flagella. The nature of these elements is not quite clear; they appear to be blood cells greatly altered by the parasites they inclose. They present a deeply stained nucleus pushed to one side and flattened by the parasite which entirely occupies the short diameter of its host-cell; at either extremity are numerous chromatoid granules. This leucocytozoon of the red grouse appears to differ from the leucocytozoa parasitic on the turkey and guinea-fowl described by Laveran and Lucet and by Neave respectively, and since we consider it to be a hitherto undescribed species we propose to call it *Leucocytozoon lovati* after Lord Lovat, chairman of the Commission upon Grouse Disease.

FIG. 1.



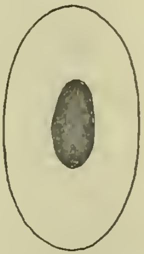
Leucocytozoon lovati; figures from drawings by A. J. E. Terzi. Macrogamete. (× about 2000.)

FIG. 2.



Leucocytozoon lovati, microgametocyte. (× about 2000.)

FIG. 3.



Normal red corpuscle of grouse. (× about 2000.)

# THE CLINICAL SIGNIFICANCE OF ALLOCHIRIA.[1]

BY ERNEST JONES, M.D. LOND., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE LONDON SCHOOL OF CLINICAL MEDICINE, DREADNOUGHT SEAMEN'S HOSPITAL.

DURING the past two years I have had the opportunity of making a detailed investigation of some cases of allochiria, a complete study of which will shortly be published, together with a full discussion of the pathogenesis of the condition. The fact that this paper is therefore merely a preliminary communication containing a summary of the results of the above study is advanced as an explanation of any appearance of dogmatism in the remarks that follow. Only the clinical significance of the condition will be considered, as the subject of pathogenesis would need a lengthy exposition.

In spite of Professor Janet's remarkable essay, which has not yet received the attention it deserves, it may be said that the views held on the subject by most neurologists can be summarised in the following statement, which is taken from the most complete modern text-book we have—namely, Nothnagel's "Specielle Pathologie und Therapie": "Allochiria is a defect in localisation, whereby a patient refers a cutaneous stimulus to the corresponding contralateral point; it occurs in a large number of diseases, notably tabes and hysteria, and is of no value in diagnosis." How inexact is this account of the condition will be seen presently.

The symptom first described by Obersteiner under the name of Allochiria refers to two entirely different conditions, which hitherto have not been differentiated from each other by any writer. The one, which may be called "false allochiria," is an instance of the localisation defect known as alloæsthesia. The other, for which I have proposed the designation "Dyschiria" or "Dyschirognosis," is an instance of psychological disaggregation and comprises three distinct varieties, of which true allochiria is one. In addition to these the terms "electromotor allochiria" and "reflex allochiria" have been applied by Weiss to conditions in which a unilateral stimulus evokes either a bilateral or contralateral motor response. There is no reason whatever why the term "allochiria" should be used in this connexion and I shall not mention the conditions further. One might just as soon call the consensual reaction of the pupil to light allochiria, particularly if the direct response is abolished, as happens in lesions of one third nerve.

I shall first give a brief description of false and true allochiria with their distinguishing characteristics and shall then consider their clinical significance. In alloæsthesia there is erroneous localisation of cutaneous stimuli, which are referred by the patient to points more or less distant.

---

[1] A paper read at the International Congress of Neurology and Psychiatry, Amsterdam, on Sept. 5th, 1907.

These stimuli are referred usually to points on the same side of the body but, for a reason that we cannot consider here, a certain number are referred to the corresponding point on the opposite side. The symptom of false allochiria does not need any special designation other than the general one of alloæsthesia, for its significance and pathogenesis are identical with those of the latter condition. It differs clinically from true allochiria in respect to seven precise features. 1. In alloæsthesia only a certain number of the stimuli are referred to the contralateral side, usually less than 50 per cent. of them; in allochiria the stimuli are invariably referred to the contralateral side. 2. In alloæsthesia the symptom in question is merely an instance of the erroneous localisation that takes place in every direction, so that the error in transverse localisation bears an exact relation to the error in vertical localisation; in allochiria there is no error in localisation apart from the mistake in the side. In alloæsthesia a touch on the inner side of the ankle might be referred to the outer side of the ankle, to any point on the foot or leg, or to the opposite ankle; in allochiria such a touch would invariably be referred to the inner side of the opposite ankle and nowhere else. 3. In alloæsthesia there are disturbances of common sensibility — particularly hypoæsthesia—which are important factors in bringing about the erroneous localisation; allochiria bears no relation to any defect of cutaneous sensibility, though such defect may sometimes be present independently. 4. In alloæsthesia there may be hypoæsthesia or paræsthesia but there are never present the peculiar attributes that we shall consider in connexion with allochiria under the name of Phrictopathic Sensation. 5. In alloæsthesia hallucinatory sensations and polyæsthesia frequently occur; in allochiria this is not so. 6. In alloæsthesia there are no corresponding motor manifestations, except perhaps ataxy; in allochiria motor manifestations are at least as prominent and characteristic as sensory ones. 7. In alloæsthesia there are no corresponding mental symptoms and the patient's error is due solely to the fact that, on account of the peripheral defect, the mind receives imperfect information about the stimulus; allochiria, on the other hand, is essentially a mental manifestation in which there is a deficiency of the power of apprehending the feeling of "sidedness."

I shall add nothing to this brief account of the false or alloæsthesic allochiria beyond a few remarks later on the subject of diagnosis. Dyschiria however demands a fuller description. As was first pointed out by Janet, there are three distinct varieties of this condition, and these must be separately considered. There are, further, three manifestations of each variety—sensory, motor, and mental.

For the *first* variety, called "simple allochiria" by Janet, I have proposed the designation "Achiria." This term indicates that its essential feature is a defect in respect to the feeling of "sidedness" or "handness," which may be called the chirognostic sense. The three manifestations of this variety are as follows. First, sensory stimuli are perfectly appreciated and correctly localised with the exception of their side. They give rise to no feeling of "sidedness" whatever. It is not accurate to say that the patient is in doubt as to the side of the stimulus; he is quite sure that he has no idea on the subject and refuses to make any guess. The sensation experienced has certain peculiar qualities that will presently be mentioned. Secondly, if the patient is asked to carry out any movement with the limb in question he is unable to do so unless the limb is indicated in some other way than by the use of the words right or left; the reason for this is that he has lost the knowledge of the meaning of these words, either altogether or at all events when they are applied to the limb concerned. Thirdly, he is unable spontaneously to conceive the feeling of this limb and declares that he has no such part of his body.

For the *second* variety, called "complete allochiria" by Janet, I shall simply use the term "Allochiria," for it resembles the condition commonly defined under this term. The three manifestations of this variety are as follows. First, sensory stimuli applied to the affected side are invariably referred to the corresponding point on the opposite side of the body. This is done with an air of absolute conviction, so that, for instance, a patient affected with allochiria on only the right side feels no more certain that a touch is on the left side when it is applied on this side than he does when it really is applied on the right side. Secondly, if the patient is asked to carry out a movement on the affected side he invariably does so with the corresponding part of the opposite side, fully under the impression that he has carried out the movement correctly. This phenomenon has been given the name of "allokinesia," rather unfortunately, as I think, for so doing serves only to create an artificial separation between two aspects of what is essentially the same condition. Allochiria is neither a motor nor a sensory phenomenon, but a psychical phenomenon that has both motor and sensory manifestations. Thirdly, the chirognostic sense is altered as follows: In a bilateral case the patient can conceive of a given feeling of "sidedness" only when the opposite side is moved or stimulated. In a unilateral case he can conceive of the feeling of "sidedness" of an affected part only when he moves the corresponding part on the opposite side under the impression that he is moving the part in question; if he really moves the affected part, or if this is stimulated, he invariably gets the feeling of "sidedness" of the opposite part.

The *third* variety has been given the appropriate name of "Synchiria" by Janet. The three manifestations of it are as follows. First, a sensory stimulus evokes two simultaneous sensations, which are referred to the corresponding points on both sides of the body. Secondly, when the patient is asked to carry out a movement on the affected side he does so on both sides, though in so doing he gets only the feeling of "sidedness" of the affected part. Thirdly, the patient is unable, either spontaneously or when cutaneous stimulation is applied, to conceive the affected feeling of "sidedness" alone apart from the feeling of the corresponding opposite side, though he can conceive it when he moves both limbs under the impression that he is moving only the affected one.

On the introspective side there are many interesting matters in connexion with dyschiria, but the above-mentioned clinical features are sufficient to enable the condition to be recognised. As regards the distribution of dyschiria it may be general and bilateral, it may be unilateral, or it may concern only certain regions of the body. In a given part it may relate to all the functions of the part or to only some. Thus in the allochiric stage only painful sensations may be referred to the opposite side and not other sensations. These three varieties of dyschiria are three grades of the same pathological process, achiria being the most severe and synchiria the least. Probably any one may occur without the others, though it is true that achiria and synchiria have not hitherto been observed except in cases that at another period presented allochiria.

The last point that must be mentioned in this connexion is the peculiar nature of the sensation that a stimulus applied to a dyschiric part evokes. There are six characteristic features about such a sensation. First, it is abnormally persistent; a momentary touch evokes a sensation that lasts half a minute or longer. Secondly, its reaction time is delayed, being usually more than a second longer than that of a normal sensation arising under the same conditions. Thirdly, it is prevented by a simultaneous stimulus applied to any normal part of the body and is at once abolished by the subsequent application of any such stimulus; thus, if two touches are simultaneously applied, one on a dyschiric part and the other on a normal part, only the touch on the latter part is felt; and, again, if a normal part is touched while the patient is still feeling the persisting sensation that follows a touch on a dyschiric part he at once ceases to feel the abnormal sensation. Fourthly, it has a strong tendency to evoke an immediate motor response. Fifthly, it has a peculiar quality that the patient describes as a diffuse shuddering or tingling; this is always unpleasant, usually very disagreeable, and sometimes constitutes a horrible shudder. On account of this quality I have described it under the name of Phrictopathic Sensation. Sixthly, the feeling of personal ownership of the part stimulated is more or less gravely compromised. All these features are most marked in the achiric stage and least in the synchiric, as may be illustrated by considering the last one. In the achiric stage the patient can describe all the features of the stimulus as correctly as a normal person, but he is convinced that the point touched is not on any part of his own body and cannot understand how all the information about the stimulus reaches him. For instance, he might say "You are touching the back of a thumb with a blunt pin; it isn't my thumb and I have no idea where the thumb is." In the allochiric stage the part touched feels dead and as if belonging to the patient in only the vaguest way. In the synchiric stage two points seem to the patient to have been touched; the homolateral one feels strange, foreign and as if it were asleep, and the sensation has the other peculiar attributes mentioned above; the contralateral one feels obviously a natural part of his own body and the corresponding sensation has no abnormal attributes.

Coming now to the question as to the value of these symptoms in diagnosis, let us first consider the false or alloæsthesic allochiria. This can be distinguished with certainty from true allochiria by means of the data given above. The only other matter I wish to refer to in this connexion is the fact that allochiria may be simulated by a peculiar irritable condition of the lowest afferent neuron system. In this hyper-excitable state, which is not very rare in tabes and in certain affections of the peripheral nerves, the patient experiences an indefinite number of hallucinatory sensations which he refers to various precise points on the surface of either limb. The condition is easily recognised by the fact that sensations are experienced independently of objective stimulation and are increased in vividness when the element of expectant attention is added, but, if the possibility of its presence is not borne in mind, it is equally easy for the condition to be mistaken for allochiria or at least for alloæsthesia. The clinical significance of this form of alloæsthesia is that of erroneous localisation in general so that I need not discuss it here. There is no doubt that the symptom is most marked in affections in which the articular excitations are impaired, and this is probably the reason why it is so often and so well seen in tabes.

The relation of dyschiria to diagnosis must be discussed from two points of view: first, the diagnosis of dyschiria; and secondly, the significance of dyschiria as regards diagnosis of the affection present. It is convenient to discuss separately the sensory and motor aspects of the former problem.

When it is observed that a cutaneous stimulus is referred to the opposite side it can readily be determined, as stated above, whether allochiria or alloæsthesia is present by a knowledge of the distinctive features of those conditions. The observation of the transference of sensation may not be made however and in this case the condition will be overlooked. Even when a patient's localising capacity is being tested it may not occur to the observer expressly to inquire as to the side on which the sensation is felt; this is especially likely in true allochiria when the patient localises every stimulus with exactitude and certainty. Further the allochiria may be present only in connexion with certain kinds of stimuli. The other two varieties of dyschiria are overlooked still more easily, especially as they are less known. In the achiric variety there is no transference of sensation and even if the patient is questioned as to its side he replies simply, "I don't know," so that the state of affairs will not be correctly interpreted unless the observer is aware of the existence of this variety of dyschiria. In the synchiric variety three sub-varieties occur, all with their special fallacies of observation. In the first and most advanced of these three the contralateral sensation is appreciated most distinctly, and if the patient mentions only this one the condition may be mistaken for allochiria, a serious prognostic error. In the second subvariety the sensations on both sides are appreciated with equal distinctness; the patient usually says that he was touched on both sides, but if he thinks only one touch has been applied he sometimes says he does not know which side was touched, and in this case the condition may be mistaken for achiria. In the third subvariety the homolateral sensation is the more distinct and if the patient mentions only this one the state of affairs may be thought to be normal.

On the motor side the possible errors in observation are much more important. The motor manifestations, unless analysed carefully, are easily interpreted as clumsiness and weakness. In a unilateral case, when the face, arm, and leg are affected, the resemblance to incomplete hemiplegia is very considerable. All the signs of supranuclear facial paralysis may be present, the gait is typically hemiplegic, and in direct tests of strength, such as with the dynamometer, the conscious effort produces such disproportionately slight results that the presence of paresis may readily be concluded. Again, in the synchiric variety the movements bear a decided resemblance to the synkinesic phenomena of hemiplegia.

It is hardly necessary to remark that all these fallacies can be avoided if the various conditions with their characteristic features are borne in mind.

The significance of dyschiria is totally different from that of alloæsthesia. Although the majority of writers have held that dyschiria, like alloæsthesia, is due to a defect in the excitations that reach the mind from the periphery, the evidence is overwhelming in favour of the view that it is due rather to an incapacity on the part of the mind to appreciate these excitations, which are themselves unimpaired. The following three arguments may be advanced in support of this view.

In the first place, no case of dyschiria has ever been recorded in which the presence of hysteria was excluded. 19 cases have been published of true allochiria; in 16 of these hysteria was the only nervous affection present; in the remaining three there was every reason to suppose, from the other symptoms shown, that hysteria was present in addition to the organic nervous affection. As hysteria is purely a mental affection and certainly is not associated with any defect in the peripheral afferent system, we therefore have strong grounds for supposing that dyschiria is likewise a mental phenomenon. In two cases of hysteria allochiria has been artificially produced during hypnosis, so that here we have positive evidence of its mental origin.

In the second place the remarkable specificity of the phenomenon is most suggestive of its psychical nature. The complete failure of the patient to apprehend the appropriate feeling of "sidedness" in connexion with a cutaneous stimulus contrasts sharply with his power of correctly appreciating all its other attributes, its quality, exact locality, &c. This failure on the one question of "sidedness" stands out absolutely in contrast with the retention of all the other capacities in the same connexion. Never in the hypoæsthesia of organic disease do we find a patient able to differentiate two pieces of cotton-wool of different degrees of coarseness, and localising a touch exactly except for the one fact that he feels it invariably on the opposite side of the body (allochiria), on both (synchiria), or on neither (achiria). The whole picture reminds one irresistibly of the other specific and highly specialised losses that are so characteristic of hysteria.

In the third place, the phenomenon exists only so far as conscious mental processes are concerned. Though the correct feeling of "sidedness" cannot be apprehended in consciousness in the normal manner, so that the various conscious defects occur as described above, nevertheless its presence in the mind is proved by its influence on habitual and automatic processes. The more conscious and volitional is the mental process concerned the greater is the dyschiric defect, while the more subconscious and automatic is the process the less is the defect.

We may therefore conclude that the phenomenon is always of psychical origin and that its presence is almost certain evidence of hysteria. Finally, the recognition of the dyschiric process may aid greatly in the analysis of the defects present and serve as a valuable guide to the discovery of the ultimate basis of the affection, thus proving an important step in that exact psychological diagnosis that underlies all scientific treatment of hysteria.

Harley-street, W.

# A PRELIMINARY NOTE ON BOMBAY SPIRILLAR FEVER.

BY F. PERCIVAL MACKIE, F.R.C.S. ENG.,
CAPTAIN, I.M.S.; ASSISTANT TO THE DIRECTOR, BOMBAY BACTERIOLOGICAL LABORATORY; CORRESPONDING MEMBER OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE.

*Morphology.*—The length of the spirillum varies within wide limits; forms from 7·0 $\mu$ to 80 or 90 $\mu$ are met with. The length of the ordinary individual cell is from 10 to 16 $\mu$, the next most common length is from 26 to 32 $\mu$, and the increase in size goes roughly in multiples of from 10 to 16. Very rarely smaller individuals, as short as 6 or 7 $\mu$, are seen, but whereas this is the rule in the American spirillum (q.v.) it is exceptional in the Bombay form. The width is not greater than 0·5 $\mu$ and is generally less. The individual from 10 to 16 $\mu$ long may possess as many as six or seven curves, but there is no regularity in the number or excursion of the curves.

In fresh blood the organism is always of corkscrew shape but in films it appears in open curves and is often not more curved than a strand of cotton which has fallen to the ground. The aster or rosette arrangement generally depicted is never seen in natural blood or in vitro. Agglomeration readily takes place but is in the form of wisps or masses of tangled threads. Division takes place transversely, and in deeply stained specimens the dividing line between two daughter spirilla is clearly seen as a gap or faintly stained area in the endoplasm reminding one of a node of Ranvier in a nerve fibril. In citrated blood some forms strongly suggestive of longitudinal division have been seen; the appearances are not due to interlocking of spirals (which is a common phenomenon), but the spirillum becomes thickened and heavily beaded and for a part of its extent is split up into two lashes. In fresh specimens two spirilla are sometimes seen tugging in opposite directions at the thicker fused portion which is common to both of them. Attempts to demonstrate an undulating membrane of flagella have invariably failed. Spirilla by their last dying movements will clear a space around themselves in a granular background accurately corresponding to their curves but there is no evidence of an undulating membrane.

The question of flagella is not so easily settled. When stained by van Ermengen's or Löffler's process, a terminal filament is seen to be present. This is described as a flagellum by some observers. The filament gradually decreases in size from the full diameter of the organism to the farthest extremity, but this is unlike a true bacterial flagellum which is of equal diameter throughout its whole length and is always much narrower than the body from which it proceeds. Again, the filament continues the original direction of the spirillum itself and generally accurately continues its curves also, but the true flagellum does neither.

I am strongly of opinion that the filament in question is not a flagellum but an empty and collapsed sheath. A similar process is seen when two spirilla begin to separate before division. The cytoplasm shrinks and the ectoplasm or limiting membrane becomes stretched and a clear space appears. The sheath end may remain collapsed after division and remain so when stained, or it may appear only as an artefact due to the application of the powerful astringents used in the staining process.[1] In sections the spirilla are seen massed in the blood-vessels or sparingly in the tissues in the neighbourhood of hæmorrhages. They have not been actually seen in the parenchyma of organs or phagocytosed by cells but this may be due to inherent difficulties in demonstrating so fine an organism in such positions. At the height of the fever the spirillum is abundant in all the organs but is present in very small numbers or more generally absent altogether in spleen smears.

The spirillum is capable of three different kinds of movement: (*a*) Rapid translation from one field to another which is an evidence of high physiological activity and disappears quickly in citrated blood and in the circulating blood just before the crisis. (*b*) Vibratory or thrilling motion. The organism maintains its corkscrew-like form but a thrill or shiver passes down from one extremity to the other. This movement is maintained for days and has been observed for nearly three weeks in vitro, becoming slower and slower as time went on. (*c*) An undulating or swaying motion which is the last sign of vitality.

When citrated spirillar blood is kept in vitro under varying conditions of temperature, light, &c., the process of decay is similar in all. The majority break up and disappear without undergoing any involution in form but in some cases solution is preceded by marked fragmentation and beading of the cytoplasm. In specimens stained by Romanowsky's method the beads stain a deep red like chromatin. Wisps of spirilla lie together in various stages of fragmentation and entangled in the mesh are deeply staining globular bodies (about 1 to 2 $\mu$ in diameter) the nature of which is unknown.

*Cultivation.*—This has not been successful. Spirilla have been recovered in the living state from the surface of dry agar as late as the tenth day. In citrated blood the spirilla live for varying periods (not later than the twentieth day in the author's hands). They appear to increase at first and then gradually to die out. Contamination with other organisms does not appear to affect the spirilla very markedly. Under the following conditions true multiplication results. The blood is citrated and centrifuged, the spirilla collect above the red cells; they are pipetted off, washed in normal saline and re-spun; the process is repeated a third or fourth time. The tubes are all set aside at room temperature in the ice box and after 24 hours a grey semi-opaque layer, like a "buffy coat," above the red corpuscles can be seen. If this is touched with a platinum needle it strings out like mucus and if examined will be found to consist of an enormous felted mass of spirilla. Under these conditions motility was lost after 48 hours and after that time they were incapable of producing the disease in a monkey.

Attempts have been made to keep the organisms alive by subculturing every day with fresh human serum, but though it appeared that some increase took place after the first transference there was certainly no increase in the subsequent subcultures. Other media have been tried without success.

*To ascertain the fate of spirilla in the body of the bed bug* (*Cimex lectularius*).—Monkeys and bugs were kept together in specially devised cages during the whole time that the former had spirilla in their blood. In these circumstances the bugs would feed readily and retired during the day to the "bug-traps," from which they could be removed. These bugs were kept and examined at varying intervals after their feed. The examination consisted of a careful dissection and separate smearing of all the principal viscera and salivary glands and the minute searching of stained specimens. In the first series several fed bugs were dissected daily up to the fourteenth day. Spirilla were found regularly up to the *fourth* day and not afterwards. In the second series the bugs were dissected in larger numbers (five or six a day) for 17 days. Spirilla were found as late as the *seventh* day. The following organs were scrutinised in almost every case: the upper alimentary tract, the lower tract with the rectum and cloaca, the anal glands, the Malpighian tubes, the salivary glands, the testicles, the vesiculæ seminales or the ovaries, and the ova in their several stages of maturation. It is important to note that in every case where spirilla were found they were always *in the upper alimentary tract and in the presence of fresh blood.* Bodies of unknown nature were found in the salivary glands and ducts of fed and unfed bugs. A short mycelial organism is often found in the internal organs. Flagellates were never seen.

*To ascertain the occurrence of natural infection in bugs.*—A series of 53 bugs were sent to me from the Arthur-road Hospital for Relapsing Fever at intervals extending over several weeks. These were generally caught at night and in many cases from the beds of patients during the pyrexial period—that is, at a time when the spirilla must have been present in the blood. The insects were carefully dissected and subjected to prolonged examination as above. In the stomach of *one bug only* were spirilla found and they were very few in number.

*Transmission by bugs.*—Bugs were fed on infected monkeys and then transferred to specially constructed cages in contact with a susceptible monkey. This experiment has been carried out six times and of these *the first monkey contracted the disease 11 days after first exposure to the bites of 30 fed bugs.* The monkey passed through an ordinary attack of the disease. None of the other five monkeys became infected though relays of fed bug were introduced at intervals. (They subsequently contracted the disease after ordinary subcutaneous inoculation, so that the failure was not due to their being immune.) Although all the experimental monkeys are kept in one room, though in separate cages, no case of accidental or "natural" infection has ever occurred during the whole series of observations (extending over ten months). No monkey has ever proved to be naturally immune. It should be stated that three or four of the later experiments under the above conditions have been carried out in the inter-epidemic season in Bombay. Seasonal prevalence is a marked feature of relapsing fever in this city and very few cases occur during the hotter months of the year.

*Animals experiments.*—The following animals have been found susceptible to infection with the Bombay spirillum: monkeys, white mice, white rats, white rabbits, black rats (mus rattus), and brown rats (mus decumanus), and guinea-pigs in order of susceptibility. A goat has proved refractory on several occasions, though pyrexia was induced by each injection of spirillar blood. Pigeons are insusceptible. In wild rats a double infection of spirillum Obermeieri and trypanosoma Lewisi was often seen. In monkeys (when the blood is taken from a human source) the spirilla generally appear on the third day after inoculation, but there is some evidence to show that repeated passages through monkeys may reduce the inoculation period to 24 hours and even under (18 hours). Out of seven monkeys carefully examined daily for relapse three showed reappearance of spirilla (on the seventh or eighth day after the crisis) in small numbers. The remaining four showed none up to the twelfth day. In white rats and mice and in some young black rats the infection has been well marked, as many as up to one spirillum to a field ($\frac{1}{12}$th oil immersion Zeiss, No. 4 Oc ) but the other animals show very light infection, generally about one to 20 fields. In relatively insusceptible animals "watch-spring" forms are common; in these the organism is coiled tightly round a centre and is very inconspicuous. They are never seen in man or monkeys. The infection lasts in the smaller mammals for three, two, or one days according to the susceptibility of the animal. In the cases where relapses have been watched for they have not occurred in any animal except the monkey. Continued passages through wild rats have been tried but both series failed, although as much as one cubic centimetre of defibrinated blood was injected into the peritoneum.[2] In monkeys no special post-mortem feature was noted and on microscopic examination no changes beyond cloudy swelling, hyperplasia of lymphoid tissue, and punctate hæmorrhages were observed. None of the 42 monkeys experimented upon died nor did any appear seriously ill.

---

[1] Dr. S. Rowland kindly made a careful examination of the spirilla in a fresh state for evidence of flagella with an oil immersion paraboloid. This instrument, by cutting off all focal light and giving powerful circumferential illumination, is specially adapted for revealing such minutiæ of structure. He saw no evidence of flagella.

*Experiment with serum.*—By the repeated injection of spirillar blood into a monkey it was hoped that a serum of antitoxic or of spirillicidal potency would be obtained. The method of estimating the degree of this potency was by means of known dilutions of the serum made in Wright's pipettes and by the observations of the effect of the diluted serum on actively motile spirilla in freshly drawn blood. The monkey serum so prepared was found to have the following potency. It produced slowing and agglutination of the spirilla in a dilution of 1 in 20 in 15 minutes, with complete cessation and commencing lysis in one hour. A dilution of 160 produced partial paralysis of spirillar movement without lysis in one hour.

*Action on man.*—30 cubic centimetres of this serum were obtained from the immunised monkey and were used to inject a patient in the Arthur-road Hospital who had relapsing fever. The man began his first relapse at 6 P.M. on August 13th and on the third day (August 15th) after some preliminary observations to verify the presence of spirilla in the blood, &c., 20 cubic centimetres of the serum were injected intravenously. Hourly observations of blood count, pulse and temperature, and leucocyte counts were made, but until the evening the temperature remained high; the spirilla did not decrease or diminish, though the leucocyte rate rose. 22 hours after the injection and 64 hours after the beginning of the relapse the temperature fell from 104° to 97° F., and the leucocyte count fell from 40,000 per cubic millimetre to 8000, and thereafter the patient remained normal. There were no ill-effects and the second relapse failed to appear.[3] The brother of the patient, one year younger, admitted on the same day with relapsing fever and in the same stage, suffered fever for one day longer and subsequently went through a typical second relapse. It is impossible to draw any deduction from a single case but the result is encouraging.

By the kindness of Dr. Novy of Ann Arbor, Michigan, some specimens of the spirillum Obermeieri which he is investigating[4] were sent and also a small quantity of some highly immunised rat-serum was sent for trial with the Bombay spirillum. On examination of the American spirilla the writer and those in the laboratory who are familiar with the Bombay spirillum were all of opinion that there is an undoubted morphological difference between the two organisms. The American as compared with the Bombay spirillum is shorter in its actual elements and does not form such long aggregations. The shortest individuals are 8 μ and the next most frequent size is about twice that; very long forms from 40 to 60 μ are rare. It is also thinner and more delicate than the Asian form and does not stain so intensely. It does not tend so much to lie in open curves and figures but in typical spirals. The infection is numerically grosser than is met with in the Bombay animals. The American individuals do not tend to lie in wisps of from six to 20 as the others often do. Transverse division is much more plainly marked than in the Bombay organism and the individuals do not tend to remain in continuity so long. Novy's spirillum was stained carefully for flagella and appearances like those depicted by him were well marked. I look upon the terminal filament, in this as in the Asian spirillum, not as a true flagellum but rather as a collapsed sheath left empty by the shrinkage of the cytoplasm. (*Vide supra.*)

The examination of the blood serum sent was additional evidence of the dissimilarity of the two organisms. The serum was stated by Dr. Novy to be of the value of "probably but 100, or at the most 200, units per c.c.[5]" Under his directions, to 4·95 cubic centimetres of defibrinated normal rat blood was added 0·50 c.c. of the serum and the mixture was placed for two hours in an incubator at 37° C. to insure the addition of a normal complement. From this various dilutions of the serum were made with sterile normal saline from 1 in 10 to 1 in 2000, and these were allowed to act (in every case in the same volume) on fresh active spirillar blood. The continuous observation of these under the microscope with controls was conducted for over two hours, and until that time there were no slowing of activity, no rosette formation, no agglutination, and no lysis in any dilution. After 24 hours there was cessation of movement without agglutination or lysis in all the dilutions and controls. In other words, the American antiserum had no effect whatever on the Bombay spirillum. This may be due to one of three causes: (1) the serum may have lost its properties since it left Novy's laboratory; (2) a more specific complement may have been necessary than that supplied by the Bombay rat; or (3) the spirilla may be different varieties.

*Investigation into an epidemic of relapsing fever at the Motlibai Hospital.*—Under the direction of the Bombay Government a committee was formed (with Lieutenant-Colonel T. E. Dyson, I.M.S., sanitary commissioner with the Government of Bombay, as president and Major T. Jackson, I.M.S., and myself as members) to inquire into the prevalence of relapsing fever amongst the superior staff at the Motlibai Hospital. This hospital is affiliated to the J. J. Hospital and receives lying-in and gynæcological cases. The committee unanimously came to the opinion that the disease was spread in these cases by contact with the fresh blood of women who were admitted for abortion, miscarriage, &c. Many of these cases were in a high state of fever, their blood containing spirilla, and the abortion was a direct result of the disease. During the performance of the necessary treatment the medical officers and nurses contracted the disease possibly through abrasions or cracks which were thus infected with spirillar blood. In other hospitals to which many cases are admitted, but where fresh blood is not encountered at the infective periods of the disease, the menial staff (sweepers) are very rarely affected and the superior staff never.

In reference to the question of identity of the European (Obermeieri), American, Asian, and African spirilla (which has been called into question before and is emphasised by the present paper), it is interesting to note the difference of case-mortality. Rabagliati[6] states, under the head of "Prognosis": "In relapsing fever we know that the mortality is not more than 5 per cent." Dr. Choksy of the Arthur Road Hospital, Bombay, whose experience of the Bombay disease is perhaps unrivalled, has kindly supplied me with the figures of the case-mortality in that hospital for the last seven years. During that period in 3196 cases the average case-mortality was 38 per cent., and taking the annual figures showed a variation from 32 per cent. in 1903 to 43 per cent. of deaths in 1901.

Further investigation into the above and other aspects of the disease is being carried on, particularly with reference to the natural mode of its transmission and to the production of a curative serum.

My best thanks are due to Lieutenant-Colonel W. B. Bannerman, I.M.S., director of the laboratory, for frequent advice and assistance; also to Dr. Sydney Rowlands of the Plague Research Commission; and particularly to Khan

---

[2] White rats and mice are difficult to procure and still more to keep alive in Bombay, so although they undoubtedly are the most susceptible to the spirillum they have not been used.

[3] Novy has noticed in animals treated with antisera that even if the attack itself is not shortened the effect of the sera is to prevent the relapse appearing.

[4] Studies on Spirillum Obermeieri and Related Organisms, F. G. Novy and R. E. Knapp, Journal of Infectious Diseases, vol. iii., Nos. May, 1906.

[5] Novy and Knapp: Ibid., p. 348. "The unit which we employ may be defined as that amount of immune blood or serum which on simultaneous intraperitoneal injection with 0·1 c.c. of rich spirillar blood will just protect a rat 100 gram against infection."

[6] Professor T. Clifford Allbutt's System of Medicine, 1905 edition, article, Relapsing Fever.

Bahadur Choksy, M.D., of the Arthur Road Hospital, by whose courtesy constant access to patients was allowed.

Should it in the future be found advisable to specify the Bombay spirillum as a subvariety I suggest that it should be called "S. Carteri," as a tribute to the memory of Vandyke Carter of the Bombay Medical Service, whose monograph, "Spirillum Fever," remains to this day a monument of industry and scientific accuracy.

The following are the more important results obtained after a further six months' work on the above subject :—

1. It was found possible to transmit the disease from an infected monkey to an uninfected by means of repeated puncture from the former to the latter with a grooved needle. A similar result was obtained with freshly drawn infected defibrinated or citrated blood. The "artificial proboscis" experiment proves that spirillar fever can be conveyed without any developmental stage and suggests that if the infection is carried by insect agency the method is more likely to be by a soiled proboscis (as is probably the case in some trypanosome infections) than through the medium of a developmental stage.

2. It was found possible to transmit the disease to monkeys by feeding with infected blood. The dose required was rather larger than by subcutaneous injection and the incubation stage was prolonged by two or three days. Spirilla (whether specific or otherwise) have been seen several times in the urine of infected patients, but attempts to transmit the disease by injection of, or feeding with, this secretion have failed. These facts suggest the possibility of an alternative route in human epidemics and certainly opportunities are not wanting for such transmission amongst the native population.

3. A monkey was injected with blood from a patient who was in the apyrexial period and whose blood was proved to be free from spirilla. The monkey failed to develop the disease at the usual time but five days after the injection of the monkey the man had the relapse and the monkey a primary attack together; spirilla appeared in the blood of each and the disease ran its usual course.

This suggests that (*a*) the spirillum remains in the circulating blood in an unrecognised or ultra-microscopic form; (*b*) that the blood is infective during the apyrexial as well as the pyrexial period; and (*c*) that there is a definite cycle of development which comes to a crisis with the appearance of visible spirilla at definite intervals.

Bombay.

# Reviews and Notices of Books.

*Practical Physiological Chemistry (designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science).* By PHILIP B. HAWK, M.S., Ph.D., Demonstrator of Physiological Chemistry in the University of Pennsylvania. With two plates of absorption spectra, four coloured plates, and 126 figures in the text. London: J. and A. Churchill. 1907. Pp. 416. Price 16*s.* net.

THE author states that the main point in which his plan of setting forth his subject differs from those previously proposed is in its treatment of the foodstuffs and their digestion. The subject of decomposition products of proteids, although it is impracticable to include its study in an ordinary course of physiological chemistry, is given in Chapter IV. (pp. 65–82), and a short chapter (pp. 139–47) is devoted to the examination of "feces" for the purpose of diagnosis. The author's plan, however, will be best understood by enumerating the order of the subjects: carbohydrates, salivary digestion, proteids and their decomposition products, gastric digestion, fats, pancreatic digestion, bile, putrefactive products, "feces," blood, and milk; epithelial, connective, muscular, and nervous tissues; urine (normal and abnormal), and quantitative analysis of urine, milk, gastric juice, and blood. We do not find much that differs from the subject as treated in English text-books of the same standard. The tests for carbohydrates and other groups are fully given under the head of carbohydrates and proteids. A useful blank chart is given in order to facilitate the student's review of the properties of the substances comprehended in these groups. There are also useful schemes for the detection of unknown substances in solution—e.g., carbohydrates, proteids; but we do not find one dealing with complex mixtures—e.g., of carbohydrates, proteids, and bodies of physiological importance.

The old classification of proteids is adhered to and in giving the technique of the colour reactions the author explains the cause to which they are due. There are some good drawings of crystals of edestin, excelsin, and the products of decomposition of proteids and of the fats. Fibrinogen is stated to be "perhaps the most important of the proteid constituents of the plasma"; serum-globulin and serum-albumin are regarded as probably not individual substances. The differences between blood plasma and blood serum are not properly stated at p. 150. The coloured figures of crystallised hæmoglobin are good and true to nature; we cannot say quite the same for the two plates of absorption spectra which preface the volume. Some of the methods in use in this country for counting the blood corpuscles and estimating the hæmoglobin are omitted. In the chapter on Muscle we think that the author is right in dividing his experiments into those (1) on living muscle and (2) on dead muscle. The long chapters on Urine (pp. 226–379) are much the same as in similar text-books. An appendix of about ten pages sets forth the chemical composition of the various reagents used. There is a good index.

On the whole, we think that the English student will not find any great advantage in the use of this work in preference to English text-books.

*American Practice of Surgery: a Complete System of the Science and Art of Surgery.* By Representative Surgeons of the United States and Canada. Editors, JOSEPH D. BRYANT, M.D., and ALBERT H. BUCK, M.D., of New York City. Complete in eight volumes Profusely illustrated. Vol. I., 1906, pp. 818. Price $7, 8, or 9, according to binding. Vol. II., 1907, pp. 778. Price as Vol. I. New York: William Wood and Co.

THE vast extent of modern surgery is shown by the size of this treatise, of which two volumes are before us. This "Practice" claims to be purely American, yet only North America is represented; the publishers in their announcement say that "no foreign writers have been invited to take part in the work," but several of the articles have been written by Canadians. We fail to see any benefit in this limitation to one or two countries beyond the practical convenience which an editor would find in having his contributors within a reasonable distance. Probably the intention is an appeal to national sentiment.

The first volume begins with an account of the evolution of American surgery by Dr. Stephen Smith of New York. He divides it into three periods, during the first of which no medical schools existed, the second extended from the formation of medical schools to the introduction of anæsthesia and antiseptics, and the third period is still in progress. A readable account is given of the chief members of the profession from the early times to the present day. The more important surgical works also are mentioned and a brief summary is given of the main contributions to surgery made by American surgeons. Dr. Aldred Scott Warthin of Ann Arbor writes on Inflammation. We quite agree with him that it is unwise to attempt to limit the name inflammation to processes caused by micro-organisms. The process is essentially the same whatever the cause. Dr. Albert G. Nicholls of Montreal has contributed the section on Disturbances of Nutrition. His article is well written and fully illustrated with examples of hypertrophy and atrophy and other nutritional changes. The only criticism that we have to make is that pressure atrophy of bones is not merely passive; the removal of the bone on which the pressure is exerted is effected by the setting up of a subacute inflammation in the bone so that a rarefaction results.

Dr. Nicholls has also contributed a valuable article on Tumours and Tumour Formation, though we must demur to one distinction made between granulomata and true tumours, for we are told that the granulomata can be traced to a definite cause, while a tumour is "due to no demonstrable cause." A "differentia" which depends on our ignorance cannot be of much importance. Dr. T. A. McGraw of Detroit has written an interesting article on Theories of Tumour Formation, and Dr. H. R. Gaylord has contributed a valuable account of the parasitic relations of cancer. Especially valuable is that part of it entitled "Characteristics of the Unknown Stimulus in Cancer."

Dr. J. C. Bloodgood's description of surgical shock is excellent. But on one point we are not fully in accord with him, and that is as to the temperature at which saline solution should be injected. It is most important that the body should not suffer any reduction of temperature by the injection, whether it be subcutaneous or intravenous. The temperature of the abdominal viscera is 100° F., and therefore it is not correct to say that the saline solution should be raised to a temperature between 100° and 105°, and then poured into a glass infusion apparatus with a long piece of rubber tubing. A fall of two or three degrees is sure to occur and the temperature of the infused liquid may really be below that of the body, a condition which must produce depression. Dr. J. D. Bryant's article on General Surgical Diagnosis is excellent, as might have been anticipated. The Radiographic articles are written by Dr. Preston M. Hichey of Detroit, Mr. W. J. Dodd, and Dr. R. B. Osgood of Boston, and especially would we commend the section on the interpretation of radiographs and that on the radiographic interpretation of the epiphyses. Dr. J. E. Moore's description of the general principles of surgical treatment contains a good account of the practice of aseptic surgery.

In the second volume Dr. V. P. Gibney writes on Tuberculosis from a Surgical Standpoint, and Dr. E. L. Keyes, jun., on Syphilis from a Surgical Standpoint. In the latter article the author attempts to distinguish syphilitic ulcers of the leg from varicose ulcers by the situation—a very untrustworthy guide. We cannot agree with him that "mercury by hypodermic injections is the surest, swiftest, safest treatment of the symptoms of syphilis." This statement is much too absolute. Why, too, does he speak of "the symptoms of syphilis" and not of the disease itself? Curiously, a little later the author speaks of "the inconvenience and danger" of hypodermic treatment. In Dr. D. W. Mongomery's account of the Surgery of the Diseases of the Skin we find a very good description of this portion of surgery and it is well illustrated. There are several other articles of interest in this volume and we may mention specially Surgical Diseases of the Lymphatics by Dr. C. N. Dowd of New York.

We may say that we have formed a high opinion of this work. The articles naturally vary somewhat in merit but we have not found one unworthy of its position in this treatise. We hope the succeeding volumes will equal those which we have already seen.

---

*The World's Desires, or the Results of Monism. An Elementary Treatise on a Realistic Religion and Philosophy of Human Life.* By EDGAR A. ASHCROFT. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1905. Pp. 440. Price 10*s.* 6*d.* net.

THE volume before us is dedicated to Ernst Haeckel and represents an endeavour to apply the Haeckelian form of monistic philosophy to the problems and conditions of everyday life and thus to afford at once a philosophy and a religion to those who having regretfully lost their hold on the dualistic philosophies and revealed religions are yet altruistic at heart and desire an optimistic spur to endeavour. The fundamental basis of this philosophy is realism, its central and essential mechanism "the conscientious observation by the human senses of the complicated facts of the universe as interpreted by the nerve organisms." Such a religion, Mr. Ashcroft maintains, would be a progressive one, for by means of observation, empirical experiment, and objective reasoning it would incorporate and assimilate the advancing knowledge of mankind. It would at once discard all revelation and banish emotion and sentiment from the general religion. Perhaps the main principles may best be given in Mr. Ashcroft's own words: "The aim and object of philosophy and of its twin sister religion therefore in our realistic system, is the cultivation of a true understanding of the veritable conditions of human existence, so that this knowledge may be safely applied to the practical direction and guidance of the life of the individual and of the community; and with such ends in view to the determination from time to time of reasonable and tenable ideas and standards of ethics and practice for general and individual application; the whole being for the purpose of securing the happiness of mankind and promoting systematic development of the race to higher and higher things in due accord with its potential characteristics." Mr. Ashcroft recognises the limitations imposed on our knowledge of the universe by the limited capacities of the observing mechanism—the senses and by the finite limits of our reasoning powers, but he foresees the time when the application of the scientific method more thoroughly to the ordinary affairs of mankind will result in advances more rapid and utilitarian than even at the present time. When he allows his constructive imagination full scope and sketches forth a scheme of Utopian happiness to which mankind may at last attain on realistic lines, he writes with real enthusiasm; he confesses, however, that faith is a psychological attribute as necessary to the man of science as to the devotee. Like all monistic thinkers, Mr. Ashcroft is from the very nature of his philosophy an iconoclast, and though, like his master Haeckel, he is uncompromising, direct, and relentless in his opposition to any suggestion of dualism or of revelation, he is resolute to retain the ethical, the beneficial, and the altruistic features of existing creeds.

The book is divided into four parts. Part I. deals with the problems of human life and thought and here Mr. Ashcroft outlines the general principles of his realistic philosophy and its application to form a religion of realism. He points out that the realistic position is practically a development of that of Aristotle, the dualistic or theistic being analogous to that of Plato. He shows how in recent times Comte in France and Herbert Spencer in England have endeavoured to apply human knowledge to the instincts and desires of humanity, while the most complete application of monistic philosophy to this purpose is that of Haeckel, and thus he claims no novelty for his work which is to present in simple form the application of human knowledge in its present state to the physical and spiritual needs of man. Part II. is devoted to our knowledge of the material universe and deals with the nature, origin, and destiny of human knowledge. It contains an interesting presentation of our present knowledge of the cosmos, of the material sciences such as chemistry, physics, and astronomy, and of their relation to mankind and his organisation. It deals with the application of science to the needs of man, with the advances already made by applied science and those confidently to be expected. Part III. is devoted to the human organism and organic life and deals with some of the fundamental problems of biology, including the nature of life. The remainder of this part is devoted to a brief presentation of the anatomy and physiology of the human organism. This section is the one disappointing one, for in his desire to be simple and elementary Mr. Ashcroft sometimes falls into error, making inexact and erroneous statements. Part IV. is entitled "The Human Soul," a term which he retains, defining it as "indicating all that vast world of thought and consciousness, emotion and will, which constitutes the real life of man and the higher development of which lifts him in so special a sense above the other denizens of the world." To its analysis, after considering the scope of the older schools of psychology, he brings the methods of the new experimental psychology and then applies them to the moral regulation of conduct. He discusses various systems of practical ethics, notably the Hindu, Buddhistic, Confucian, and Christian systems. He refers to Kant and his "categorical imperative," and then examines the principle of pure altruism, which affords the basis of his progressive system of ethics. In the concluding chapter of this section, entitled "The Human Outlook," Mr. Ashcroft considers the application of this "gospel of science and humanity" and its promise for the future.

Mr. Ashcroft's philosophy is noteworthy if for no other reason because it is constructive in its aims and not purely iconoclastic or negative like that of the agnostic and the blind fatalism of the pure materialist.

---

*Green's Encyclopædia and Dictionary of Medicine and Surgery.* Vol. III., Earth Burial to Gummi Indicum. London and Edinburgh: William Green and Sons. 1907. Pp. 535. Price 12*s.* 6*d.* to subscribers.

THE third volume of this important work contains 60 articles of more than 1000 words in length, over 100 articles of from 80 to 900 words, and 935 short articles and headings, varying in length from ten lines to a few words. Amongst the subjects considered we may draw attention to those of eclampsia, human embryology, epilepsy, the clinical examination of the eye, filariasis, the examination (physical, chemical, and bacteriological) of pathological fluid, furunculus orientalis, the gastro-intestinal diseases of children, general paralysis, and glycosuria, all of which are thoroughly up to date. The article on eclampsia, for instance, is excellent, the etiology of the affection being very thoroughly described. The symptoms and treatment are fully gone into. The article concludes with a description of the theories of thyroid inadequacy and of the placental or chorionic origin, so that the reader has here the whole subject brought up to date by Dr. H. Jellett. Sir John Halliday Croom, as was to be expected, writes lucidly on ectopic gestation, the treatment of this serious affection being most explicitly laid down accordingly as it has to be carried out before rupture, at the time of rupture, after rupture, or after suppuration, and so on, of the fœtus. To Dr. J. W. Ballantyne has been intrusted the article on embryology and he has handled the difficult subject in an admirable manner and illustrated it by some excellent plates. Very useful remarks and methods will be found under the heading of enemata. The late Dr. A. L. Gillespie writes on enteroptosis. The subject of epidemiology has been considered by Dr. A. Davidson who details the methods of studying the subject and considers the whole matter under the heads of (*a*) epidemic movements, embracing here the secular mutations, the multiannual fluctuations, the epidemic or short period waves, the seasonal fluctuations, and oscillations; (*b*) the law of anticipation; (*c*) the association and antagonism of epidemic diseases; and (*d*) the evolution and involution of epidemics. We find, also, a very concise but complete section on expectoration. One of the best articles in the volume is that by Mr. W. Adams Frost on the clinical examination of the eye, which embraces the examination of all the different structures of this organ in a very comprehensive manner. The attention of the reader may also be directed with advantage to the article on the examination of the fæces. Mr. Alban Doran, as was to be expected, contributes an excellent account of the affections of the Fallopian tubes in his usual lucid style. The article on filariasis by Dr. G. H. F. Nuttall is the most thorough exposition of this subject that we have read; it is illustrated by some excellent drawings of these parasites; the pathological effects produced are succinctly described and the various species of filariæ are enumerated and described. The student will also find in the section on the examination of pathological fluids by Dr. T. H. Milroy and Dr. D. A. Welsh all the important facts of this subject. Dr. R. W. Felkin writes on oriental sore; the relationship of the Leishman-Donovan body is alluded to, thus bringing the subject up to date. The author, however, has not mentioned the treatment that has been found very successful on the North-West frontier of India—namely, that of covering the sore with a thin sheet of lead just embracing the lesion. This is by far the best method of treating these obstinate sores. Such are a few of the subjects treated of in this volume, space alone forbidding us to allude to more of the articles. When completed the work will form a valuable addition to the library of the physician or surgeon.

---

*The Dispensatory of the United States of America.* By Dr. GEO. B. WOOD and Dr. FRANKLIN BACHE. Nineteenth edition. Thoroughly revised, largely re-written, and based upon the Eighth Decennial Revision of the United States Pharmacopeia. Philadelphia and London: J. B. Lippincott Company. 1907. Pp. lxii.-1947. Price £1 11*s.* 6*d.* net.

THE first dispensatory was published in 1833; since that date the work has received full legal recognition. The present edition comes opportunely, in view of the great interest that is being taken in the question of the purity of foods and drugs in the United States at the present time. The compilation represents the expenditure of much labour, skill, and care that must necessarily be bestowed upon a standard work. The editorial staff includes the recognised authorities in the United States on the various subjects treated. To Professor H. C. Wood, professor of materia medica and therapeutics in the University of Pennsylvania, has been intrusted the task of revising the sections on botany and materia medica with the uses of the drugs and preparations; to Professor Joseph P. Remington, professor of theory and practice of pharmacy in the Philadelphia College of Pharmacy, the section on pharmacy and pharmaceutical preparations; and to Professor Samuel P. Sadtler, professor of chemistry in the Philadelphia College of Pharmacy, the sections on theoretical chemistry and toxicology. The preparation of the index of diseases was undertaken by Dr. H. C. Wood, jun., and the article on Serum Antidiphthericum was contributed by Dr. M. S. Rosenau, director of the Hygienic Laboratory of the United States Public Health and Marine Hospital Service. To these should be added the name of Dr. Albert B. Lyons of Detroit, who assisted directly in that part of the revision concerned in bringing the chemistry of the alkaloids into line with modern research.

The work is divided into three parts, Part I. containing the discussion of all the remedies recognised by either the United States or British Pharmacopœias, Part II. dealing with non-official drugs and preparations, while in Part III. are considered the tests and test solutions of the two Pharmacopœias, weights and measures, the art of prescribing, and other matters relating to pharmaceutical work. This part includes also the National Formulary in abstract. The arrangement throughout is alphabetical, although there is a very complete index.

Altogether this dispensatory is a monumental piece of work which reflects great credit on all those who shared the enormous task of its compilation and revision.

The subject-matter is thoroughly up to date and the pages are singularly free from printer's errors. The present edition thoroughly maintains the standard of its predecessors and forms an excellent and a comprehensive work of reference on all that pertains to pharmacy and the collateral arts.

## LIBRARY TABLE.

*Das Dysenterietoxin.* (*The Toxin of Dysentery.*) By Dr. ROBERT DOERR. With two Graphic Curves in the text and a Plate. Jena: Gustav Fischer. 1907. Pp. 75. Price 2.50 marks.—This work gives us a very complete *résumé* concerning the bacillary toxin of dysentery. The author has come to the following conclusions. The bacilli of the disease of the Kruse-Shiga type secrete a true soluble toxin, whilst those of the Flexner type do not. By extraction in a solution of common salt from fresh agar cultures and subsequent filtration a highly toxic solution is formed, and in this the intensity of action of the toxins is dependent on the one hand on the nature of the source from which it is obtained, and on the other on the degree of alkalinity of the culture medium, whilst the amount of toxin present shows a certain parallelism with the reaction of the latter—that is to say, that the greater the alkalinity of the culture fluid the greater the amount of toxin. Another point determined was that the formation of the pellicle is at the same time an indication of a rapid formation of toxin. The latter likewise is seen not to be affected by heat to the extent of withstanding for an hour's duration a temperature of 70° C., but is quickly destroyed when the latter reaches 80° C. It suffers no harm from trypsin, bile, or the succus entericus. Mineral acids remove the toxicity from filtered bouillon cultures, but if these be neutralised by alkalies the toxicity again becomes evident. This toxin of dysentery was found to affect strongly rabbits, cats, dogs, and monkeys, whilst guinea-pigs, white mice, fowls, and doves were refractory to it. Again, with susceptible animals the author often found that after intravenous, subcutaneous, or intraperitoneal injection a hæmorrhagic and necrosing inflammation of the mucous membrane of the intestine followed the secretion of the poison by the latter, whilst there were certain constant lesions of the nerve centres to which after receiving the corresponding dose the animals succumbed. The most suitable animal for experimental research is the rabbit, which reacted in one-third of the cases experimented upon, showing a hæmorrhagic-diphtheritic typhlitis, the small intestine, however, not showing any lesion, similar to cases in men. The secretion of the poison takes place through the gut and in a less degree through the kidneys but no evidence of the poison being secreted by the liver could be ascertained. The bite of animals showing marked symptoms of poisoning by the toxin was always atoxic. Lastly, the occurrence of experimental typhlitis was found to be quite independent of the entrance of the bile into the intestine. The results shown above are the outcome of a laborious amount of honest work. The author has given us a valuable addition to the literature of the subject on which he has written.

*Medical Diagnosis: a Manual for Students and Practitioners.* By CHARLES LYMAN GREENE, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota, &c. With seven coloured plates and 230 illustrations. London: Rebman, Limited. 1907. Pp. 683. Price 13*s.* 6*d.* net.—It is rather difficult to criticise this book, as its contents do not entirely correspond with its title and it is therefore open to blame for failure to carry out its implied promise, while at the same time it deserves praise for its actual merits. Frankly, it is not quite what we expect in a book which professes to be concerned only with diagnosis; it deals with diseases *seriatim* as do most text-books of medicine, rather than grouping the phenomena of diseases under symptoms as they present themselves to the physician and analysing the varied conditions which may underlie these outward signs. Etiology, morbid anatomy, and symptoms are all considered, though rather more space is given to diagnosis than is often the case. As a manual of medicine for students, and indeed for practitioners, the book has merits of its own. It is packed with information, generally conveniently arranged, and reference is facilitated by headings in dark type and by the use of italics for important statements. There are in addition marginal notes of the contents of paragraphs, which are often useful, though we doubt whether much is gained by such a sign-post as "a ghastly clinical picture," which we find as the only marginal note on one page. The style is generally clear. Here and there, however, we meet with solecisms such as "emphysemae" and "a phenomena," and compression is sometimes carried to such a point as to make a sentence almost unintelligible so that we feel that we are reading a précis rather than a treatise. Still, the total result is a book which may be distinctly useful to those about to undergo an examination in medicine.

*Sea-Sickness, its True Cause and Cure.* By H. NORMAN BARNETT, F.R.C.S. Edin. London: Baillière, Tindall, and Cox. 1907. Pp. 39. Price 1*s.* 6*d.*—This is an interesting and valuable little book, although its conclusions are not so new as the author apparently supposes. That sea-sickness is due to the loss of the sense of position which is in some way connected with the semicircular canals was taught in at least one medical school some 25 years ago and the bromides were recommended for the prevention of sea-sickness in a letter from Mr. H. Saunders which was published in THE LANCET of June 14th, 1879, p. 867. But although, as we have said, the theory of sea-sickness put forward by Mr. Barnett is not new it is still none the less true and, as even now it does not seem commonly to be recognised, we think he has done the profession service by bringing out the book before us.

*Lehrbuch der Anorganischen Chemie.* (*Text-book of Inorganic Chemistry.*) By Professor H. ERDMANN. Fourth edition. Brunswick: Friedrich Vieweg und Sohn. 1906. Pp. 796. Price 15 marks.—The feature of this fourth edition of a well-known German text-book is the care which the author has taken to include a quite modern account of recent researches on the rare gases of the atmosphere and of radium. Otherwise the presentation of principles and facts remains the same and we still entertain the favourable opinion of the author's manner of dealing with the subject which we expressed when reviewing previous editions. The book is admirably illustrated and contains also tables of logarithms and the disposition of elements in accordance with the periodicity of their functions.

## JOURNALS AND MAGAZINES.

*The Scottish Medical and Surgical Journal.*—In the September number of this journal Dr. W. B. Drummond gives a thoughtful review of the work of the recent Congress on School Hygiene and discusses some of the problems raised as they affect Scotland in particular. His advice is so to organise the system of medical inspection of school children that the local authorities may not be tempted to offer illusory salaries to part-time officers already in practice. Dr. D. Barty King writes on Muco-membranous Colitis and endeavours to classify the conditions found in this group of affections, and Dr. A. Dingwall Fordyce continues his article on Infant Feeding, dealing with cow's milk in the light of recent researches on its coagulation. Dr. B. P. Watson records a case of repeated abortion due to syphilis, in which treatment with potassium iodide was followed by the birth of a child with congenital goitre; he notes the cases already on record in which this condition followed the administration of potassium salts but concludes that the goitre is probably due to some maternal toxæmia.

*The Dublin Journal of Medical Science.*—In the August issue of this periodical is contained the annual report of the Rotunda Hospital for 1905–06, compiled by Mr. E. Hastings Tweedy, Dr. Arthur Holmes, and Dr. R. J. Rowlette. It offers as usual material for study by all obstetricians. Dr. Charles Greene Cumston of Boston reports a case of acute metastatic gonorrhœal myositis and discusses the diagnosis and treatment of this rare affection which is scarcely mentioned in many text-books. Dr. Charles T. Costello writes on blackwater fever but comes to no certain conclusion as to its etiology, though he suggests that it may be due to some special parasite.

*The Birmingham Medical Review.*—In the July issue of this review is published a Presidential address by Dr. Robert M. Simon to the Birmingham and Midland branch of the British Medical Association in which he discusses the subject of character and temperament and concludes that the brain and the thyroid gland are the only two organs of the body which directly influence them. Following this address is a severe criticism of the recent policy of the Association written by an ex-Vice-President under the title of "Medical Science *v.* Trades Unionism."

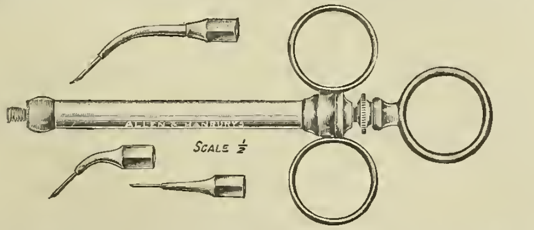
*Guy's Hospital Gazette.*—Useful articles are somewhat buried, as a rule, in the pages of the hospital magazines and we are glad to have the opportunity of calling attention to the first of a series of lectures on the Significance of Variation in the Constituents of the Urine, delivered by Dr. F. G. Hopkins and published in the issue of this gazette of August 24th. The subject of nitrogen excretion is dealt with and the meaning of the urea and of the ammonia in the urine is discussed with more appreciation of the real difficulties inherent in the chemical problems involved and of the uncertain nature of the results arrived at than is always evident in the writings of physiological chemists.

*St. Bartholomew's Hospital Journal.*—In the August number Surgeon W. Perceval Yetts, R N., records a case of ascariasis—infection with lumbricoid worms—which presents points of interest. The number of parasites ultimately expelled was very large and the symptoms were suggestive of pernicious anæmia, the blood showing reduction in the number of red corpuscles, with megalocytes and poikilocytes present. There was no eosinophilia. The patient suffered from a neurasthenic condition which disappeared on expulsion of the worms by santonin.

# New Inventions.

## A NEW ASEPTIC SYRINGE FOR INDUCING LOCAL ANÆSTHESIA IN DENTISTRY.

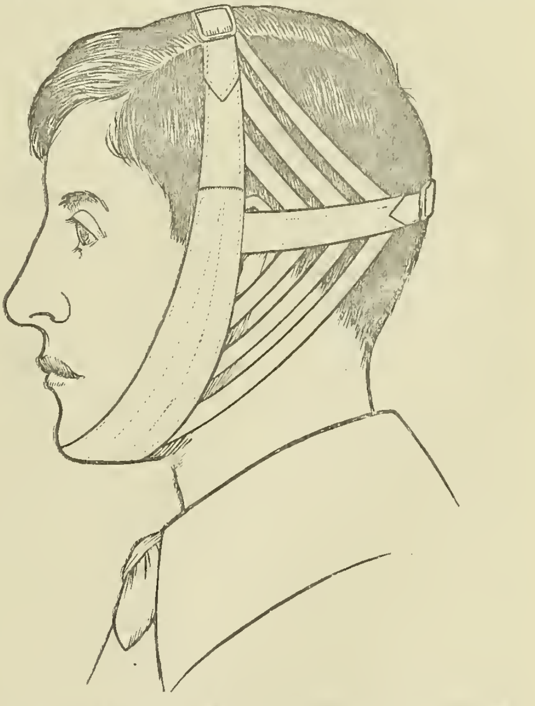
ALTHOUGH not a dentist, I am every year required to extract a very large number of carious teeth, and I have never been quite satisfied with any of the all-metal syringes for injecting local anæsthetics in these cases. I therefore asked Messrs. Allen and Hanburys, of 37, Lombard-street, London, E C., to make one, and they have succeeded in producing what I consider to be a very perfect and efficient instrument. It is 3¼ inches in length, ¼ inch in diameter and of 30 minims capacity. The piston is not one which is uniform in diameter throughout, but its lower inch is most accurately ground so as to fit exactly the barrel and entirely prevents any of the fluid used from "coming back" at the highest pressure required. Instead of the usual finger grips my syringe is fitted with rings for the index and middle fingers and also a ring for the thumb, as shown in the accompanying illustration, and I find practically that this is a very great improvement indeed, the operator having absolute control both as regards the pressure and the retaining of the needle firmly in its position in the gum. Moreover, it is impossible to let the instrument fall accidentally in any unusual circumstances which might occur. The needles, three in number, are of platinum iridium, about a quarter of an inch long and set in strong mounts of different shapes which screw on to the barrel of the syringe. The whole apparatus is beautifully finished and fitted in an aseptic metal case 6 inches by 2¾ inches by 1 inch, the price being 29*s.* 6*d.* complete with platinum iridium needles, or 25*s.* if steel needles are supplied.



Newtownhamilton, Co. Armagh. W. J. DAWSON, M.D. Dub.

## A NEW EAR AND CHIN STRAP.

THE simple apparatus which is represented in the accompanying illustration is designed to aid in overcoming the mouth-breathing habit so common in children and others who have suffered from adenoids or other nasal obstruction. Every practitioner must have experienced the difficulty of teaching these patients to breathe properly through the nose after the obstruction has been removed. The apparatus consists essentially of an elastic webbing band about two inches wide, into which the chin fits comfortably, and which tapers upwards to form a narrower elastic strap which terminates in a buckle on the top of the head. Another similar strap is inserted into this vertical one slightly above the middle and passes to the back of the head just below the occiput, where it is fastened by means of another buckle. Two pieces of fine net, or the narrow diagonal elastic bands shown in the illustration, serve to strengthen the apparatus and assist in keeping it in place on the head. It is usually only worn at night, but in the case of quite young children I often advise that it should be used also during a part, at least, of the waking hours, until the habit of breathing normally has been acquired. It is light and cool and comfortable, and produces just sufficient upward elastic pressure on the chin to make it easier to keep the mouth shut than open. Little children, I find, tolerate it well and will wear it while at play without making any attempt to displace it. It is also a very comfortable way of keeping prominent ears flat, or for holding dressings in the region of the ears in place. I use three sizes—namely, a small size for infants, a medium size for children from about five to 12 years, and a large size for adults.



The apparatus has been made for me by Messrs. Arnold and Sons, of West Smithfield, London, E.C.

Hornsey-rise, N. BRYAN REYNOLDS, M.B. Lond.

THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 21, 1907.*

## Rural Sanitation.

EARLY in the last session of Parliament Sir JOHN DICKSON-POYNDER moved in the House of Commons for a return "of the medical officers of health and inspectors of nuisances in the rural districts of each county in England and Wales, showing the area and population of each district and, as regards each officer, the amount of his remuneration, whether repayment is made in respect of it by the county council, and whether he holds any other appointment or carries on any other occupation." This return has now been issued as a Parliamentary paper and it displays several of the pieces which form the curious mosaic that may be collectively described as our system (or want of system) of rural sanitation. It tells us that the appointments in question are made by the councils of 659 rural districts but that, on account of combinations and of divisions of districts and of cases in which more than one appointment is held by a single person, this number does not coincide with the number of officials. For the 659 rural districts there are 682 appointments of medical officers of health and 739 appointments of inspectors of nuisances. There are 30 combinations under the Public Health Act comprising rural districts for the appointment of a medical officer of health, and two comprising a rural district for the appointment of an inspector of nuisances. There are cases in which, without formal combination, officers hold more than one appointment, and others in which the officer for a formal combination holds additional separate appointments. In this way 64 medical officers of health act for 237 rural districts and one inspector of nuisances acts for two rural districts. When the qualifications and conditions of office of a medical officer or inspector are in accordance with the regulations of the Local Government Board, the county council is required to repay to the district council one-half of the officer's salary. Under this provision repayment is allowed in respect of 645 of the 682 appointments of medical officer of health for rural districts, and in respect of 656 of the 739 appointments of inspector of nuisances, or in 94·5 per cent. of the former and 89 per cent. of the latter. In four single rural districts the medical officers of health give their whole time to the duties of the office, and in 23 combined districts they do the same, either strictly, or in combination with other work of a public character. These 23 cases comprise 127 rural districts, but, with one exception, they also include urban districts. There are but 98 cases in which the inspector of nuisances gives his whole time to his duties. The return further shows that in 599 instances, including combinations, the medical officer of health holds some other public appointment, and that in 504 he engages in other work, usually in private practice. Among the inspectors of nuisances there are 597 instances in which the officer has other appointments, such as surveyor of highways, or building surveyor, under the same or some other council, and 140 in which he follows some private occupation.

The arrangements thus described in numerical outline work practically much as might be expected and in the manner only too well known to most of our readers. There is, as a rule, little or no recognition among rural councillors of the moral obligations of their official position, and WALPOLE'S maxim, *Quieta non movere*, expresses, also as a rule, their highest conception of their duties. They regard their health officers in most cases as our grandparents are said to have regarded children—that is to say, as creatures that should be seen and not heard. The councillors are usually men holding respectable business positions in the district, tradesmen or farmers, or in some similar station, able to read their favourite newspaper and to re-echo its views on local or general politics, but almost as ignorant as their own cattle with regard to the protection of the public health, or with regard to the public importance of insanitary conditions. They are slenderly endowed with imagination and are absolutely unable to realise the consequences likely to follow from leaving a case of infectious disease in one of a group of overcrowded and undrained cottages. They are sensitive to expenditure, especially to expenditure the objects of which they are unable to appreciate or to understand; and they have a deeply-rooted conviction that it is unneighbourly to devote too much consideration to the dunghills and other appliances of their own congeners in the vicinity. They have never seen a typhoid bacillus which they would suppose to be something visible and tangible, like a pigeon or a sparrow. They have never seen it go into the water of the village stream, they have never seen it emerge, and they have no assured belief in its existence. They individually would not like to be put to expense for the sake of rendering any cottages belonging to them fit for human habitation, and they wish to extend to other proprietors, and especially to their colleagues on the council, the same indulgence that they would expect to receive themselves. They are very tolerant of the medical officer of health so long as he meets them with a pleasant smile and keeps his duties as much as possible in the background. If he be not satisfied with this position and displays too much consciousness of the responsibilities of his office, he will receive a friendly private intimation that he had better hold his tongue, and if this be disregarded he will find that his practice suffers and that his re-election at the expiration of his term will be more than doubtful. As for the inspector of nuisances, the best way to hinder him from being meddlesome is to give him some more profitable occupation, and he is therefore permitted or encouraged to undertake other duties. We observe one case in which the inspector for two districts in adjoining counties, respectively of 95,873 and of 35,760 acres, and with populations of 9950 and 5803, being paid £55 a year for one of them and £30 for the other, but with no contribution from the county council in either case, is at the same time a practising veterinary surgeon and farrier. Similar instances may be found on almost every page of the return.

Under such conditions as those which we have described all goes on smoothly for a time or until the mortality returns of the district show, perhaps in successive years, a remarkable prevalence of typhoid fever or of diphtheria or an infantile death-rate much in excess of the average for the county. The Local Government Board then takes note of the facts and sends down an inspector to ascertain the explanation of them. He makes a report which in the majority of cases he might make without investigation, so closely does one resemble all the rest. He finds overcrowding of dwellings upon area, overcrowding of inmates in dwellings, dwellings saturated with damp by reason of defective construction, an absence of drainage, an accumulation of fæcal matters in all sorts of places, a defective water-supply, an abundant contamination of that which exists, an absence of provision for isolating infectious disease, and a total neglect of cleanliness in dairies and slaughter-houses. These are the ordinary conditions which in each locality may be supplemented by others peculiar to itself. The report is published, is a nine days' wonder, and is forgotten, and things continue as before. There is no power anywhere to enforce the recommendations of the inspector and they are quietly ignored. Many of the reports contain references to earlier inspections of the same localities and say that the conditions then described are still existing. The medical officer of health not only has no authority but is liable to be displaced if he is what his council would describe as "troublesome," and the powers of inaction of the council are unlimited. There is probably less in rural than in urban districts of deliberate office-seeking for the express purpose of protecting nuisances and of preventing such laws as the Sale of Food and Drugs Acts from being carried into effect, but there is an amount of steady passive obstruction which only health officers themselves can realise to the full extent. In the meanwhile, the conditions of rural life are becoming as prejudicial to health as those of life in towns, and under a combination of noxious influences in both the health and the physique of the industrial sections of the community are suffering in the manner and degree recently set forth by the returns of the recruiting officers. The political exchange of votes for gabble goes on merrily, and schemers or visionaries are loud concerning projects of reform, while they leave untouched and unheeded the evils which are lying at their doors and which are certain, sooner or later, to entail due punishment upon the nation which permits their continued existence. The reform which is really needed, and which it would be the work of a true statesman to accomplish, would be to extend the protection of the laws to the thousands of poor and helpless who now suffer in health and strength from insanitary conditions which they cannot prevent and the existence of which they are frequently too ignorant either to recognise or to deplore. For this purpose the first necessity would be to give health officers security of tenure during good behaviour, to render them independent of other work, to combine districts in such a manner that needful expenditure should be spread over sufficiently large areas of taxation, and to commit, primarily to county councils and ultimately to the Local Government Board, the duty of making good the neglects and malfeasances of smaller and inferior authorities.

## Membranous Colitis.

WE publish this week an interesting paper by Dr. E. H. Harrisson upon Mucous Colitis, which affords a useful contribution to our present knowledge of the disease. Considerable confusion still exists in regard to the classification of diseases of the colon and there are many matters in dispute concerning their pathology. Recent researches have established the frequency with which the large intestine is the seat of disease, either primary, as in dysentery and ulcerative colitis, or secondary, as in tuberculosis, renal disease, and syphilis, while the part played by disorders of the putrefactive processes occurring in it in the genesis of various conditions of ill-health resulting from chronic constipation and stasis, though well recognised, is even yet imperfectly understood. Among the most interesting and at the same time most obscure conditions affecting the colon is that to which the names of mucous colic, muco-membranous or mucous colitis, and tubular diarrhœa have been applied. This disease has been variously regarded as an inflammatory condition—i.e., as a chronic catarrh of the mucous membrane, hence the application of the term colitis, or since, in at any rate some cases, no sign of inflammation has been discovered after death it has been regarded by Leube and Nothnagel as a neurosis of secretion, or a "myxo-neurosis," to adopt the word invented by Ewald to describe the condition. More recently it has been suggested, among others by Mr. J. P. Lockhart Mummery, that this condition has no claim to be regarded as a clinical entity, but that it is in point of fact a syndrome, or collection of associated symptoms found in a number of diseases of the colon of widely different character. In an interesting paper read before the Royal Medical and Chirurgical Society on June 11th, and published in The Lancet of June 15th, Mr. Mummery gives a careful analysis of 36 cases of disease of the colon observed by himself. He points out that owing to the application of the electric sigmoidoscope to the investigation of these cases it is possible to study directly the condition of the lower part of the colon, and by such means he has been enabled to prove the existence of local inflammatory lesions in 24 out of his 36 cases. The condition most often seen was an injection of the mucous membrane with a granular appearance like that seen in granular pharyngitis. Irregular patches of whitish-yellow adherent mucus were often observed on the surface of the membrane. In seven cases there was in addition definite ulceration, the ulcers being irregular in outline and shallow with a granular base. In four cases there was a chronic hypertrophic catarrh associated with œdema of the submucous tissue, while in seven cases the cause of the colitis appeared to be the presence of cancer of the colon. Other conditions found in association with the colitis were acute pericolitis, uterine displacements, and appendicitis. Mucus was present in the stools in all the cases and in eight of them large mucous casts were passed. Mr. Mummery therefore concludes that mucous colitis is not a distinct disease and also that Nothnagel's explanation of the condition as a secretory neurosis is untenable. A study of Mr. Mummery's cases, however, shows that many of them hardly conform to the clinical type of the condition usually known as mucous colitis; moreover, the greater number of his cases were in men, while this condition is much more common in women than in men. His observations confirm the fact previously known that the passage of tubular casts may occur in association with actual disease of the colon, notably catarrhal conditions and cancer, and they suggest that such local lesions are probably more common than is supposed, but they can hardly be regarded as conclusively demonstrating that a condition of mucous colic does not exist apart from obvious local lesions, especially in view of the fact that in some fatal cases such lesions have not been found. The use of the sigmoidoscope in the investigation of these cases marks a distinct advance and will doubtless supplement the little that is at present known of their pathology if it is systematically used, and the results obtained correlated with the careful records of the necropsies of fatal cases of which but few are as yet on record. Indeed, the disease, apart from complications, appears to be but rarely fatal, which, as NOTHNAGEL suggests, is the reason of the differences of opinion existing. At the present time NOTHNAGEL's classification of these cases into three groups seems best to conform to the facts known—viz., a group in which the abnormal formation of mucus is a neurosis of secretion without inflammatory changes; a second group with catarrhal changes in the mucous membrane, the mucus production being here also regarded as a superadded neurosis of the secretion processes; and a third group in which there is a chronic catarrh of ordinary character with occasional attacks of membranous diarrhœa, instead of continuous mucous secretion as in the second group. Dr. HARRISSON'S paper deals fully with the etiology of the disease and he touches upon the association existing between mucous colitis and appendicitis, about which there is considerable difference of opinion. By some appendicitis is regarded as a cause of the colitis, and removal of the appendix [1] has been suggested as one form of treatment; by others both conditions are regarded as the result of a common cause, while yet others, among them Dr. H. A. CALEY, regard the colitis as an important antecedent of appendicitis. Dr. CALEY[2] quotes DE LANGENHAGEN who saw among 1200 cases of membranous colitis only 16 cases of appendicitis, in 14 of whom the appendix had been removed without relief of the symptoms of colitis, while Dr. BOTTENTUIT has seen 22 cases of membranous colitis in which the symptoms were not materially relieved after excision of the appendix. A variety of conditions have been regarded as predisposing to membranous colitis; among these we may mention the "arthritic diathesis" which DE LANGENHAGEN regards as the basis of every case. The same observer insists on the frequent association of enteroptosis with membranous colitis. Dr. HALE WHITE attaches more importance to disorder of the female generative organs as an antecedent; no less than 21 of his 51 female patients suffering from membranous colitis had a history of some disturbance of these organs. In this connexion it is of interest to notice that membranous dysmenorrhœa has been observed in association with membranous colitis. Influenza is by some regarded as a cause of the condition; at any rate, colitis may be much aggravated by an intercurrent attack of that disease. With regard to the almost invariable association of chronic constipation nearly all observers are in agreement. The very frequent association of marked neurasthenic symptoms with the disease has led to a neuropathic theory as to its origin, but it is more probable that the neurasthenia is the result of the colitis, and this view is supported by the observations of DE LANGENHAGEN who found that in 304 cases with neurasthenic symptoms these had preceded the intestinal symptoms in only 16 cases.

We need only refer to Dr. HARRISSON'S paper for an exhaustive account of the symptomatology of the disease. and he deals thoroughly with its diagnosis and prognosis, He rightly lays important stress on the necessity of preventing fæcal accumulation in the large intestine as the first step in the treatment of the disease. This may be attempted by aperients, of which the best appears to be castor oil, given early in the morning and continued daily even for some weeks. Magnesium sulphate or calomel has been given where castor oil cannot be taken. Either as an adjunct to this treatment or as a substitute for it, systematic washing out of the colon with warm water or with tepid saline solution, even to the extent of several pints, is most useful. Some cases derive great benefit from treatment at certain continental spas where systematic irrigation is practised, notably at Plombières, Royat, Chatel-Guyon, and Homburg, the natural waters being used for purposes of irrigation. Similar treatment has been carried out at Harrogate in this country.[3]

Dr. HARRISSON concludes his paper by a brief description of the various attempts that have been made to give relief to some of the more chronic and intractable cases by surgical measures.[4] So long ago as 1880 HAHN in Germany operated on a case of ulcerative recto-colitis by colotomy successfully. During the next 15 years a few similar operations were performed by different surgeons with some success. In 1895 Mr. C. H. GOLDING-BIRD operated on a case of membranous colitis for Dr. HALE WHITE, and from that time similar measures have been frequently carried out. The chief operations performed have been colostomy of either the right or left side, with or without irrigation of the bowel, and appendicostomy. Short circuiting has also been done in some cases. Many successful results have now been recorded by one or other of these methods. Dr. HALE WHITE, who has followed the history of some of these patients, recommends that the fistula should be kept open for a year in severe cases. He is also of opinion that operation should but rarely be performed. The choice of cases for operation certainly requires great care and judgment. It should not be done in mild cases, or until careful trial of medicinal measures with a course of treatment by systematic irrigation at some suitable spa has failed, or in very chronic cases with marked neurotic symptoms.

◆

## Inquests and Preliminary Inquiries.

AT a recent inquest at Battersea Mr. TROUTBECK, the coroner for Westminster, made some observations with regard to the unsatisfactory nature of the law relating to inquests which have been widely reported and commented upon and which possess considerable medical interest. The principal point to which he called attention is not a new one, for his complaint that many inquests are held in cases where this procedure is unnecessary has often been uttered before. In the case upon which Mr. TROUTBECK'S observations were made a child of poor parents had been born prematurely and had died owing to the lack of such nourishment and care as in other circumstances might have saved his life. Mr. TROUTBECK considered that if he had been empowered as coroner to order a post-mortem examination directly, and in this way had been able to satisfy himself that there were no evidence of neglect and no factors present in the case that called for investigation by a jury it would not have been necessary to hold an inquest. He appears to believe that in many cases expense to ratepayers, distress to relatives, and other disagreeable accompaniments of inquiries before the coroner might be avoided if the machinery provided by the Coroners Act, 1887, were better suited to its purpose. We are not impressed with this view for the reasons which seemed to influence Mr. TROUTBECK in his remarks, though in certain cases there would be no harm in the increased discretion which he seeks for coroners. The particular instance which served to call his attention to a state of affairs frequently commented upon was not fortunate for his arguments. In all cases where an infant has died without a medical certificate being obtainable the slightest suspicion of neglect or of other acts on the part of adults which may have conduced to the death renders the case a desirable one for investigation at an inquest, the holding of which, even if it entails no subsequent proceedings against anyone, should have a salutary effect in warning others and in stimulating public opinion towards prevention of the present waste of infant life. Apart from this, however, the suggestions of Mr. TROUTBECK and several of his colleagues are worthy of consideration and will no doubt be considered seriously whenever the law relating to death registration and the holding of inquests is consolidated and amended.

---

[1] THE LANCET (Paris letter). May 25th, 1907, p. 1461.

[2] Brit. Med. Jour., 1906, vol. i., p. 1330.

[3] J. Liddell: THE LANCET, May 18th, 1907, p. 1357.

[4] A useful résumé is given in a paper by Ingersoll Olmsted in the Brit. Med. Jour., Nov. 10th, 1906, p. 1277.

The point is a simple one. A coroner is not expected to hold inquests in all cases for which no medical man will give a certificate, nor does the granting of the certificate in any way deprive him of authority to inquire should he believe the death to be one fit for investigation. According to Section 3 of the present Act he is to hold an inquest when he "is informed that the dead body of a person is lying in his jurisdiction and there is reasonable cause to suspect that such person has died either a violent or an unnatural death or has died a sudden death of which the cause is unknown." Later in the Act he is given power to order a post-mortem examination, but this he may only do "either on his summons for the attendance of such medical witness or at any time between the issuing of that summons and the end of the inquest," there being no indication that whoever drafted the Act had any idea that a post-mortem examination might be desirable, except after an inquest had been decided upon. The contention of coroners who have a large number of deaths reported to them for which there are no certificates and who hold many inquests in the year in cases for which no one can be blamed, is that if they could order post-mortem examinations while suspending their decision as to the necessity for an inquest they might often be satisfied that the death was not one within the definition quoted above which limits their powers. We have not commented upon this definition; it may not be absolutely lucid in its wording or incapable of improvement, but it expresses fairly well that with which everyone agrees—namely, that certain deaths are not what are called popularly "natural deaths"; that when such a death may have taken place, or when, if we may amend the wording of the Act, there is "a death of which the cause is unknown," a public inquiry should place the cause of death, if possible, outside the realm of conjecture or suspicion. That there are many deaths to which the definition quoted does not apply, but with regard to which no medical man will grant a certificate, is equally agreed. A medical man, for example, practising among the poor may attend a patient and may become perfectly well aware that he is suffering from a certain complaint. The patient, however, may discontinue the services of his medical attendent, perhaps through poverty, and may die many months later, when clearly it would not be lawful that a certificate should be granted. If the coroner, then, had power to seek the opinion of the medical practitioner it would be to the effect that the cause was probably the complaint for which the deceased consulted him but that a post-mortem examination would put the matter beyond doubt. The machinery for such inquiry as that indicated would naturally include the payment of a fee to the medical man whose information enabled the coroner to arrive at his decision, and the fact that the medical man's time and trouble were given in obedience to the law and for a purpose appreciated and provided for by the legislature would do away with the friction now often caused by the informal and unauthorised questionings which are the coroner's only means of obtaining information necessary for the proper fulfilment of his duties.

While, however, we agree that the powers of the coroner should be increased by enabling him to order a post-mortem examination without binding himself to hold an inquest, and to seek from the medical man information which the medical profession alone can give in such circumstances, we have no desire to see any curtailment of the dignity or of the authority of the coroner's office. The responsibility of deciding that an inquest shall or shall not be held must still rest with him and there must be no risk of that responsibility being shifted on to the shoulders of the medical man who holds the post-mortem examination, whether he be a public official or one in private practice. It is, however, obvious that the coroner must not only be able to listen to or to read the medical man's report but must be capable of understanding it and of drawing correct conclusions if the decision arrived at is to be really his. In order to be able to give such a decision with authority the coroner must in all cases be a medical man himself additionally equipped with the legal training and experience necessary for the proper fulfilment of his duties. Under the existing law the properly trained medical man has been found to be the best and most efficient coroner. Under a system which required the holding or not holding of an inquest to depend largely upon a formal and searching inquiry and upon the proper and discriminating consideration of medical evidence a medical training should be the coroner's first and most necessary qualification.

# Annotations.

"Ne quid nimis."

## THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

WE have received the following statement for publication from the Board of Education: "The Board of Education have decided to establish a medical department to advise and assist them in the discharge of the new duties imposed on the Board by Section 13 of the Education (Administrative Provisions) Act in regard to the Medical Inspection of School Children which local education authorities are required by that Act to carry out in England and Wales. The chief duties of the Board in this direction will consist in advising and supervising local education authorities as to the manner and degree in which those authorities carry out this medical inspection; in giving such directions as may be necessary regarding the frequency and method of such inspection in particular areas; and in considering and sanctioning such arrangements as may be proposed under the Act by individual authorities for attending to the health and physical condition of the children. The Board will also collect and collate the records and reports made by the authorities in the process of carrying out the new duties imposed by the Act, and will issue an official annual report on the subject. The organisation and *personnel* of the Board's medical department are not yet fully determined, but in view of the varied factors and influences which are concerned, directly or indirectly, with the health and physical condition of the children of the nation, it has been decided by the Board to establish the department on a broad basis of public health, and so organise its work as not only to allow of reasonable freedom for local authorities as to particular methods, consistently with securing an adequate degree of uniformity in the presentation of results for comparative purposes, but also to use as far as practicable the means and methods of sanitary administration already existing, and to develop and supplement these as may be found best for the increased requirements, rather than to supplant them or to bring new competing agencies into existence where this may be avoided. As a first step the President has appointed Mr. George Newman, M.D., F.R.S. Edin., D.P.H. Camb., as chief medical officer of the Board. Dr. Newman has been medical officer of health of the metropolitan borough of Finsbury since 1900. He is also lecturer on public health and sanitary administration in St. Bartholomew's Hospital (University of London), and has had the advantage of provincial experience as consulting medical officer to the county council of Bedfordshire. He has published various works and official reports upon matters of State medicine, both of a general and special character, including the control of the milk-supply, infant mortality and its prevention, infectious diseases and sanitation in schools, food poisoning, housing, water-supplies, and the physical condition of the people. Dr. Alfred Eichholz, who has for nine years been on the Board's staff as medical inspector of schools, and, in addition to his special work in the schools for blind, for deaf, for epileptic and for defective children, has had close experience of the medical, hygienic, and sanitary aspects of elementary schools generally, and of recent investigations into the national physique as illustrated thereby, will also be appointed to the medical department; and further appointments will be made in due course. The Board intend in the autumn to issue a circular to local education authorities regarding their new duties in the matter of medical inspection of school children." The Board of Education cannot expect that at least one of the appointments thus announced will escape criticism. Dr. Newman's excellent public work has not necessarily given him much first-hand experience of the kind that he will require in the discharge of his important and delicate duties.

## THE INTERNATIONAL CONGRESS OF "GOUTTES DE LAIT."

THE Second International Congress of "Gouttes de Lait" was held in Brussels from Sept. 12th to 16th. The Congress was attended by over 600 delegates, including some 40 representatives from Great Britain. At the first Congress of Gouttes de Lait, which was held in Paris in 1905, the discussions were almost exclusively confined to the work of the "Goutte de Lait," an institution which is represented in this country by the infants' milk depôts that have been established by several of our municipalities. The scope of the Brussels Congress, however, was much wider, and included the whole question of the prevention of infantile mortality. It was decided that the scope of the future congresses should be similarly enlarged, and that the next congress, which is to be held in 1910 in Berlin, should be called the International Congress for the Protection of Infant Life. An account of the Brussels Congress will appear in a future issue.

## SCIENCE "IN EXCELSIS."

"THE highest research station in the world" (writes an Italian correspondent) "was on the 27th ult. thrown open to the nature student of all nationalities on the Colle d'Olen (Monte Rosa) 3000 metres above sea level. The ceremony was honoured by the presence of the Queen Dowager (Margherita of Savoy) and the spokesman of the day was Dr. Luigi Pagliani, professor of hygiene in the University of Turin, who, in the presence of an audience representing the combined science of the continent, unveiled the inaugural tablet in the name of the King of Italy and declared duly open the istituto Scientifico Internazionale, which bears the title of its 'hero and eponymus' Angelo Mosso. Professor Pagliani's eloquent discourse was followed by that of Professor Sarasin, representing Switzerland, conveying the thanks of non-Italian nature students for the hospitality accorded them by the youngest of the European Powers; then came Professor Mosso himself, who felt in the inauguration of the istituto that he had put the appropriate crown on a long career devoted to Alpine exploration and research; and lastly spoke the Commendatore Grober, giving voice to the special acknowledgments of Germany. Thereafter the Queen made her progress through the rooms of the istituto, admiring the equipment of the various laboratories and passing words of commendation on the other appointments for the nature students in residence. Descending on foot (as became a veteran Alpine pedestrian) the Queen bade farewell on the Piazzale del Colle d'Olen to the distinguished company who, subsequently, to the number of 50, sat down to a banquet prepared for them in the Guglielmina Inn, the place of entertainment nearest to the istituto. Again the occasion inspired the orators of the party, some of whom dwelt with just and generous insistence on the humble collaborators of the institute—the masons, the carpenters, the whole *personnel* of the building and its equipment—who, after years of toil, amid storm and inclemencies truly Alpine, had seen their reward in the ceremony of the day. 'Science and labour,' said the Commendatore Grober, 'had worked loyally together in a spirit of the best augury for the future of humanity.' Then the company broke up, some to descend to the sub-Alpine plane, others to prepare for an ascent of Monte Rosa whose crest looked inviting—not to say defiant—to the more adventurous.

Since then the Congress of the Alpine Club of Italy has held its thirty-third meeting and before dispersing made a pilgrimage from its seat in Valsesia to the 'Angelo Mosso Institute'—again to admire the spirit that had conceived it, and the liberality and energy that had enrolled 'science,' as one of them remarked, 'among the peak-stormers.' Few events of the academic year, in truth, are more memorable than the opening of this loftiest of research stations—the characteristic supplement of twentieth century science to *hospices* of mediæval inspiration and erection, earning in a sense even more humane than the best of these the eulogy of the medical poet:—

> 'So tasked to smooth stern Winter's drifting wing,
> And garb the Eternal snows with more Eternal Spring.'
> (Temperat et boreae rabiem mollitque pruinas,
> Et facit Æterno Vere tepere nives)."

## WESTERN MEDICINE AND PLAGUE IN INDIA.

AN editorial article in the *Times of India* of August 24th assures us that so far as the Western portion of our dependency is concerned the old prejudice against hospital treatment is rapidly wearing away. Year by year the hospitals and dispensaries are more generally used; last year, for instance, the number of patients treated in the Bombay Presidency increased by 120,000. We are glad to know, our contemporary continues, that the Bombay Government fully realises that this increased confidence demands a corresponding improvement in the equipment of all hospitals, and especially in those of the Mofussil. Much has already been done and it is expected that before long all will be provided with the equipment necessary to enable civil surgeons to undertake operations hitherto not attempted. A good deal of hospital extension is now proceeding in Bombay and Poona and new hospitals are in course of completion at Karachi, Ahmedabad, Belgaum, and Alibagh. Three sets of x ray apparatus have been distributed and others will be supplied as funds permit. During the years of acute financial stringency Bombay hospitals suffered severely but Surgeon-General J. P. Greany, I.M.S., has set himself to the task of rehabilitation with indomitable energy and has been liberally supported by the Revenue Department. All this is pleasant reading but unfortunately in India, as elsewhere, there are two sides to every shield. "Perusal of the annual report of the Bombay Bacteriological Laboratory produces a sense of infinite depression." These are the opening words of an editorial article on another page of the same issue of the *Times of India*. The report tells us, the article goes on to say, that Haffkine's prophylactic has been brought to such perfection that wherever inoculation is practised it confers virtual immunity on the persons treated. Given a willing population it is as easy to control an outbreak of plague by inoculation as it is to combat small-pox by vaccination. These facts have been clearly established and yet people are resorting to inoculation less and less every year. The number of doses of the prophylactic issued from the laboratory last year was scarcely more than half the number demanded in 1905. The director, Lieutenant-Colonel W. B. Bannerman, I.M.S., thinks that this may be due to people holding aloof from inoculation in the hope that the Plague Commission may discover some more acceptable preventive. Our contemporary trusts that this may be the case but is not sanguine. The fear is expressed that the neglect arises from combined apathy and suspicion. The unfortunate attitude may change but there is no sign that it is likely to do so. The two articles from which we have quoted indicate a remarkable condition of things. On the one hand, we have a steadily increasing confidence in the efficacy of Western methods for combating disease; and on the other, we are confronted with a lamentable disruption of that confidence. It seems impossible to reconcile two such contradictory postulates and yet the facts are indisputable. The apparent discrepancy is due to ignorance and its offspring—suspicion. *Omne ignotum pro magnifico.* To the uneducated native of India plague is a new evil, whereas the other disabilities for the relief of which he is learning to rely upon Western knowledge have long been familiar to him. The only perfect remedy is education. Not until knowledge has become universal need we expect to meet with logical sequence in the conduct of affairs.

## THE MEDICAL DEPARTMENT OF THE JOHNS HOPKINS UNIVERSITY, BALTIMORE.

THE medical department of this university is planned for the training of those who have received a liberal education, and a detailed account will be interesting to our readers just as the approach of October brings the subject of medical education closely before us. A collegiate degree in arts or science from a recognised university or college is necessary for admission. In addition to this the applicant must have a reading knowledge of French and German, with an adequate training in the preliminary scientific branches, such as chemistry, physics, and biology. The course extends over a period of four years, the term being eight months, from Oct. 1st to June 1st. The students proceed to the degree of M.D. Throughout the course special emphasis is laid on practical work in the laboratories and the hospital, which is regarded as an integral part of the medical school. In the first two years of the course anatomy, physiology, physiological chemistry, pharmacology and toxicology, pathology, and bacteriology are taken up. In the final years the hospital—both the wards and the out-patient department—is the class-room. Didactic lectures are few and instruction is given practically to small groups so far as possible. The fourth-year students spend a large part of their time working in the wards as clerks and dressers. Beginning with the session of 1907, some elective courses will be given in the final year, the student having certain freedom of choice in deciding which of the special subjects he will take. The courses for graduates are of two kinds: (1) special courses and (2) university courses. The special courses are usually given during May and June of each year to limited classes. They embrace courses in medicine (clinical work, classes in physical diagnosis, and clinical microscopy), operative surgery on animals, surgical pathology, pædiatrics, orthopædic surgery, genito-urinary surgery, x ray diagnosis, gynæcological pathology, cystoscopy, ophthalmology, and so on. These courses are practical as far as possible and are designed specially for general practitioners. The university courses differ from these in that they are given throughout the session. These are of two kinds—elementary and advanced. The former are much the same as the work being done by the undergraduates and are usually for periods of three or six months. In all of these the number who can be admitted is necessarily limited and applicants must satisfy the head of the department of their fitness to profit by the work. Thus elementary courses are given in medicine, pathology, bacteriology, physiology, gross anatomy, neurological anatomy, and physiological chemistry. For the advanced and research courses only those physicians are accepted who are prepared to undertake special studies and to spend sufficient time to make their admission worth while. Thus in medicine work may be done in the various laboratories of the medical clinic—e.g., the general clinical laboratory, the biological laboratory (which investigates biological methods of diagnosis and treatment), the physiological laboratory, and the biochemical laboratory. In the Phipp's dispensary there is a laboratory for the study of the problems of tuberculosis. In the pathological department courses on special work, such as the pathology of the organs of special secretion, are given. A limited number of men are admitted for research work. In the anatomical and physiological laboratories a limited number of men are admitted for advanced work, as, for example, in the anatomy of the nervous system, embryology, and physiology. A similar course is available in physiological chemistry. In all of these the fitness of the applicant is decided by the head of the department.

## SULLY PRUDHOMME.

DELICACY of health in childhood or serious illness in later life has often decided the destinies of men of genius. The weakly child often cannot engage in the calling of his father and the strong man, smitten down by prolonged sickness, must perforce content himself by following for the rest of his life the sedentary occupation of the student or writer. It is thus that Sully Prudhomme, trained in the exact sciences and destined at first to the career of an engineer, turned to poetry when a sudden succession of family bereavements and the horrors of the war of 1870 had shattered his nerves and left his sensitive frame a wreck. For 37 years, until his death in his garden at Châtenay on Sept. 7th, Sully Prudhomme, the erewhile man of science, the severely trained mathematician, built up his own poetic reputation and has died, leaving a literary monument, which, as a writer in the *Figaro* points out, is "l'un des plus nobles, en vérité, l'un des plus purement beaux dont s'enorgueillisse l'art français." He attained to fame while at times suffering the anguish caused by slow paralysis, coupled with occasional attacks of meningitis that threatened his life. Strange to say, a life of intermittent torture never once impaired the solid reasonableness of his poetic genius. Delicate and punctilious and truly poetic though his verse undoubtedly is, he remains the poet of reason, of the scientific outlook of modern intellectualism, and illustrates in a forcible degree the truth that between artistic imagination and latter-day science there is no necessary gulf of division. The exact sciences can boast few such types as Prudhomme, though medicine has been adorned indirectly by a Goldsmith, a Keats, and a Bridges.

## THE BACTERIOLOGY OF PLASTERS.

IN the *Pharmaceutical Journal* of July 27th Mr. G. Pinchbeck gives the results of an investigation into the bacterial condition of plasters and the results which he has obtained are sufficiently disquieting to merit the attention of the medical profession. Mr. Pinchbeck has made a bacteriological examination of various commercial plasters and protective tissues that had been stored under different conditions. Ordinary adhesive plaster from a package frequently opened contained an average of 22 colonies per square centimetre and a specimen of soap plaster similarly stored contained 20. Adhesive plaster prepared with a rubber basis gave better results, an opened package containing seven colonies per square centimetre and a new unopened package being sterile. Medicated adhesive plasters with a lead, resin, or soap basis were found to be not sterile, chalybeate, belladonna, and cantharides plasters containing respectively 13, 53, and 160 colonies in the same area. But medicated adhesive plasters with a rubber basis gave better results; plasters medicated with capsicum, belladonna, belladonna with aconite, and opium containing respectively 5, 31, 2, and 17 colonies to the square centimetre. These samples, with the exception of the belladonna plaster, were all newly opened and newly opened packets of menthol and oxide of zinc plasters were found to be sterile. An examination of a number of "court plasters" disclosed a worse state of things. A sample of isinglass plaster stored in a tin that had been freely exposed contained 341 colonies to the same area, while samples of "tri-colour" plaster, after being carried in a vest pocket for three months, contained no less than 1420 colonies. This class of plaster is especially rich in bacteria, chiefly owing to the use of isinglass, gelatin, gum arabic, and honey in preparing the basis. These ingredients form excellent culture media and the subsequent exposure of the plasters to a temperature of from 50° to 60° C. serves still further to favour the development of spores. Such plasters are usually carried in a purse or wallet for instant use in case of cuts, but their bacterial impurity is so high that they are a source of positive danger. Mr. Pinchbeck found staphylococcus pyogenes aureus and albus, bacillus pyocyaneus, bacillus murisepticus, streptococcus pyogenes albus, and other organisms in this type of plaster. As regards protective tissues, Mr. Pinchbeck found that unopened packets of gutta-percha tissue were sterile, while an open packet contained five colonies per square centimetre. Goldbeater's skin contained from 24 colonies in an unopened packet to 310 colonies per square centimetre in an opened packet. Goldbeater's skin is prepared from the peritoneal membrane of the cæcum of cattle. It is liable to contain bacteria owing partly to its avidity for water but more particularly to the use of septic membranes or contamination during manufacture. Mr. Pinchbeck has clearly proved the necessity for exercising care in the selection of plasters which from many causes may convey septic infection. He has investigated the various methods available for sterilising plasters and has ascertained that the addition of an antiseptic substance to the plaster is an efficient method of sterilisation. Among the substances suggested are thymol, chlorbutyl alcohol, iodol, beta-naphthol, and methyl salicylate. A rubber basis is effectually sterilised by the addition of 0·4 per cent. of thymol or 0·6 per cent. of methyl salicylate. For "court plasters" Mr. Pinchbeck recommends 1 per cent. of phenol. But he rightly condemns the dangerous practice of moistening such plasters with the tongue before applying them to a cut. The rubber basis, prepared from pure Para rubber, is an ideal plaster medium. It dissolves or mixes with various medicaments, is free from irritating properties, and produces the most adhesive plaster known. The rubber basis is strong, neutral, fairly stable, and waterproof, and is certainly much superior to the various bases employed in making the official plasters. It should always be supplied on reels in order to expose as little of the surface as possible to the atmosphere.

## THE CITY OF WESTMINSTER COUNCIL AND THE STREETS UNDER ITS CONTROL.

IN the *Times* of Sept. 17th appears a letter signed by four members of the Savile Club, one of whom is a medical man, referring to the condition of the roadway of Piccadilly in the early hours of Friday morning, Sept. 13th. In it occurs the following passage:—

> The road was being flushed at Hyde Park-corner, but the hill from the St. James's Club to Devonshire House had not been touched and was excessively slippery from the traffic of the previous day and from motor grease. No gravel was to be had and the sandbox opposite the St. James's Club was empty. The horses drawing the heavy market carts had terrible work; one horse in its struggles to get up the hill fell down and died. At times the whole width of Piccadilly was blocked by carts unable to get up the hill.

The letter goes on to state that the police say that the same scene occurs almost nightly and that they are powerless as the City of Westminster council is responsible for the state of the road. We have upon sundry previous occasions called attention to the unsatisfactory way in which the City of Westminster council manages the cleansing and gravelling of the roads under its care (*vide* THE LANCET, Dec. 13th, 1902; Jan. 24th, 1903; and Jan. 5th, 1907). In 1903 the excuse given was that no ballast for gravelling the roads could be procured. Piccadilly has been more or less a chaos since the beginning of July owing to the laying of some telephone or telegraph cables. We see no reason why this work should not be carried on by a night shift as well as by a day shift, but there is some weird influence about roads which appears to make those responsible for their upkeep absolutely indifferent to the convenience of those who use them, to the pockets of the ratepayers, and to the sufferings of the unfortunate animals.

## THE GOVERNMENT AND RESEARCH.

THE President of the Local Government Board has authorised the following researches under the grant voted by Parliament in aid of scientific investigation concerning the causes and processes of disease: 1. Further study by Dr. Sidney Martin, F.R.S., of the chemical products of pathogenic bacteria. 2. Bacteriological investigation by Dr. F. W. Andrewes of the air of sewers and drains. 3. Observation by Dr. W. G. Savage of the bacteriology of "garget" and maladies of the udder or teats of milch cows; and of the possible relation of sore-throat in the human subject to pathological conditions of the udder and teats of these animals. Also investigation by him of paratyphoid fever and its microbic cause. 4. Joint investigation by Dr. M. H. Gordon and Dr. T. J. Horder of the life processes of the meningococcus with a view to means of combating cerebro-spinal fever.

## THE HYGIENE OF SCHOOL LIFE IN THE UNITED STATES.

Dr. Richard Cole Newton of Montclair, New Jersey, communicated to the section on hygiene and sanitary science of the American Medical Association at the last annual meeting an interesting paper on the Attitude of the Medical Profession toward the Hygiene of School Life.[1] Dr. Newton referred to the International Congress of School Hygiene, saying that it would be for the good of the race in the United States if such a conference were to be held in that country where, he averred, the present system of public instruction is constantly defeating its own ends and turning out invalids, cranks, and "bookful blockheads ignorantly read," simply for the want of a well-balanced curriculum of instruction which accords an appropriate place to physical education. Dr. Newton allows that excellent work in the direction of school hygiene has been accomplished in Chicago, Boston, and in other American cities, which makes it all the more regrettable that there is no scheme for amalgamating and systematising the work. Medical inspection of school children is fairly general in the United States and has received the unqualified approbation of the teachers who desire its extension, so that here at any rate an excellent start has been made, but other problems which trouble us in England are also presenting themselves across the Atlantic. The question of giving free breakfasts to poor school children leads Dr. Newton to point out that, so far as New York is concerned, an investigation by the board of health has disclosed the fact that some children went to school breakfastless, not because no food was provided but because they could not eat after the night spent in their ill-ventilated and overcrowded tenements. The Committee on the Physical Welfare of School Children also found that only 1·1 per cent. of 1500 New York children whose cases were investigated were not provided with some breakfast. Dr. Newton expressed the opinion that in order to provide the proper sort of physical instruction to school children a special class of medical men must be raised up, and here he went over much the same ground as was recently traversed by Dr. Nicholas Senn in the Jerome Cochan lecture recently delivered before the Medical Association of the State of Alabama. In this lecture the well-known American surgeon advocated the foundation of hygienic institutes "where young medical men can receive the necessary education and training to prepare themselves for the high and responsible office of sanitary or health commissioner in the different communities." Dr. Newton thought that a somewhat larger scope should be given to such institutes so that they might turn out the properly qualified director and instructor in the public and private schools. He proposed that a commission should be appointed in the United States which should have control over all matters connecting physical with scholastic instruction. In many respects the school children of the United States are better cared for from a physical standpoint than they are in this country. Medical inspection of school children is more or less the rule, and the principles of hygiene are taught in many of the schools. In New York City, for example, hygiene and elementary physiology have been taught in the public schools for some time. The flaw in the American system seems to be its lack of uniformity; in some States the methods of school medical inspection and teaching of hygiene are good, while in other States these methods are conspicuous by their absence. It is somewhat amusing, however flattering it may be to our self-esteem, that England should be quoted as a nation careful of the physical well-being of her poor school children. A new leaf has been turned now, but in the past perhaps nowhere in the world was the health of indigent young children more neglected than in England.

## EXPERIMENTAL ANÆMIA.

ALTHOUGH the clinical features of the various forms of anæmia are well defined their pathology still remains obscure. In the *Journal of the American Medical Association* of August 10th Dr. C. H. Bunting has published an instructive paper on experimental anæmia which throws much light on the subject. By injecting large doses of ricin or saponin into the veins of dogs and rabbits he produced a progressive anæmia and condition of blood exactly resembling that of pernicious anæmia. In rabbits, nucleated red cells, both megaloblastic and normoblastic, and characteristic changes in the non-nucleated cells (variation in size with a predominance of those above the average, poikilocytosis, polychromatophilia, granular basophilia, and an increased colour index) are produced. Even the leucopenia with relative increase of mononuclears may occur. In short, none of the features of pernicious anæmia are lacking. Moreover, a condition of bone marrow similar to that of pernicious anæmia may be produced—predominance of megaloblastic type of nucleated cells and of cells of the large lymphocyte type. The animals react with machine-like regularity to the poison. Each injection is followed by the production of nucleated cells and a fall in the number of red cells and their gradual assumption of the abnormalities mentioned above. This reaction is entirely different from that produced in animals by repeated hæmorrhage—a fall in the number of red cells without production of nucleated red cells. Megaloblasts are not found in the blood and normoblasts only occasionally. The colour index falls rapidly, the corpuscles become very pale, and the marrow shows the appearances characteristic of secondary anæmia, nucleated cells of the normoblastic type predominating. If the hæmolytic substances are injected not intravenously but subcutaneously or intraperitoneally the result is different. Hæmolysis is produced, blood pigment is deposited in the spleen, and the number of red cells is reduced, but the sharp nucleated-cell reaction does not occur in the blood, the fall in the number of red cells is less sharp, and the marrow shows the appearances of a secondary anæmia with characteristic predominance of normoblastic cells. Dr. Bunting thinks that the difference between the results of large intravenous injections and subcutaneous injection of the poison is due to the fact that in the former case it is not entirely saturated by the red cells before it reaches the marrow, which therefore shows signs of direct injury in extensive necrosis of cells. That there is hæmolysis of nucleated red cells is shown by the presence of naked nuclei in the marrow and in the circulating blood. These facts may explain the differences between anæmias of the pernicious type and of the secondary type. In tuberculosis, for example, there is a constant but slow absorption into the circulation of substances destructive to the red cells but this is so gradual that the toxin is completely anchored by circulating cells which it injures or destroys, as shown by accumulation of blood pigment in the spleen. But the toxin does not reach the marrow in an uncombined state and therefore does not injure it. So far as the marrow is concerned the lesion is the equivalent of hæmorrhage. The marrow is able to repair the injury in a normal manner. On the other hand, in pernicious anæmia large quantities of hæmolytic poison gain entrance to the circulation and do not completely combine with the circulating cells and reach the marrow, impairing its function. Similarly can be explained the reason why in certain severe secondary anæmias the blood picture of pernicious anæmia is produced. It is only necessary to postulate a time when the pathological process of tuberculosis, for example, is so acute that the red cells (diminished in number) cannot absorb all the toxin and that some of it reaches the marrow. The abnormal forms of red cells found in the blood may be due to too hasty metamorphosis of the injured marrow in the attempt to supply the demand for red cells. There is, perhaps, a hasty transition from megaloblast to erythrocyte without the orderly progression through intermediate and normoblastic stages. The resulting cell is thus larger than normal and bears more hæmoglobin. The poikilocytosis and the discharge into the circulation of immature (nucleated) cells are other expressions of this faulty hæmatopoiesis. The source of the poison in pernicious anæmia appears to be the alimentary canal—a view emphasised by Dr. William Hunter.

---

[1] Journal of the American Medical Association, August 24th, 1907.

## THE TOWN COUNCIL OF SOUTHEND-ON-SEA AND ITS MEDICAL OFFICER OF HEALTH.

As will be seen by reference to another column the town council of Southend-on-Sea has concluded by 12 votes to 11 to dispense with the services of Dr. J. T. C. Nash. We shall be surprised if this conclusion does not offend the better-informed burgesses of the town, and we shall be still more surprised if the council escapes an open expression of disapproval from the Local Government Board. This is what the inhabitants of Southend-on-Sea have now to think of. The present medical officer of health is being dismissed because his attention to duty has brought him into conflict with members of the town council. We are convinced that no medical man is likely to take Dr. Nash's place and to subject himself to the chances of such treatment. Certainly no medical man of any position in his profession or any experience of sanitary affairs will apply for Dr. Nash's post. What will be the position of Southend-on-Sea if the town council appoints a medical officer not fitted by his special attainments for the post? And—we hardly like to make the suggestion that follows—what will be the position of the borough if the municipal authority finds a medical man ready to act not as a sanitary expert and adviser but merely as the obedient servant of the town councillors? This is what will happen to Southend-on-Sea. An irremediable stigma will immediately be attached to the name of the borough and its position as a health and pleasure resort will be damaged beyond measure. Dr. Nash's annual reports have been received by us regularly and we ask the inhabitants of Southend to read and to digest the meaning of these figures which give the death-rates at Southend-on-Sea from measles, diphtheria, and typhoid fever since Dr. Nash's appointment in 1901 as medical officer of health:—

*Zymotic Death-rates at Southend-on-Sea, 1901–06 inclusive.*

| — | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 |
|---|---|---|---|---|---|---|
| Measles ... ... | 0·33 | 0·06 | 0·18 | 0·07 | 0·13 | 0·05 |
| Diphtheria ... | 0·40 | 0·77 | 0·10 | 0·04 | 0·08 | 0·09 |
| Typhoid fever ... | 0·33 | 0·35 | 0·29 | 0·04 | 0·17 | 0·04 |

Arithmetic will show that the rates have dropped from an average of 0·32 during the first three years to an average of 0·08 during the last three; and further arithmetic suggests that the saving of life thus implied in a population of more than 40,000 is very considerable. This improvement in the "zymotic" death-rate has been paralleled by the improvement in the general death-rate, and there can be no doubt that Dr. Nash's strenuous work in putting down sanitary abuses and inspecting food-stuffs, especially the conditions of the shell-fish trade, is responsible for the significant alteration in the mortality figures. Certain members of the town council have now decided to get rid of Dr. Nash and the inevitable conclusion to which the public must come is one that will go far to spoil the position of Southend-on-Sea as a health or pleasure resort.

## SENILE TREPIDANT ABASIA.

In the *Boston Medical and Surgical Journal* of August 15th Dr. E. W. Taylor has called attention to a peculiar disturbance of gait in elderly people, which was described many years ago by Charcot as "senile trepidant abasia" but subsequently attracted little notice. He reports three cases. A woman, aged 83 years, came under observation. Up to three years previously she considered herself well except for the natural infirmity of her years. At that time she began to notice a disturbance in walking, particularly in starting. When once started she could progress fairly well, but her first movements were difficult, particularly if she was embarrassed by the presence of anyone. Descending a flight of stairs had become increasingly difficult and at last impossible. The heart was normal and no definite radial sclerosis could be made out. The grasp of the hands was good. The knee-jerks were active but there was no plantar reflex. In general the patient appeared vigorous for her years. When standing and asked to take a step forwards she could do so only after much difficulty and "muscular stammering." Taking short and uncertain steps she progressed a certain distance with much effort. There was no spasm or ataxia and her gait could not be described as feeble. Certain exercises were prescribed which she followed with definite temporary improvement. Two weeks later she was distinctly better and could to some extent walk alone. She complained of difficulty in writing similar to that of walking. She could write only after much effort. She was seen again two years later and had grown more feeble. She complained of spasmodic twitchings of the legs at night which kept her awake. The reflexes were very active. The heart was arhythmic and feeble, the pulse was 100, and the radial artery was hard. She had given up attempting to walk. In the second case the patient was a man, aged 75 years, who had had difficulty in walking for about two years. He complained that he "couldn't handle his limbs which were like sticks." Occasionally sharp twinges of pain ran down the legs which he attributed to rheumatism. The knee-jerks were normal and the plantar reflexes were slight. The strength of the legs was good. The heart was normal. He showed the same difficulty in starting and in progressing as was present in the previous case. In the third case the patient was a man, aged 72 years, who for some time had suffered from increasing difficulty in locomotion, especially in starting, and a tendency to shorten his steps more and more as he progressed. After going a few yards he was often obliged to stop from exhaustion. The heart sounds were weak and the radial arteries were much sclerosed. The knee-jerks were active. The pathology of such cases is obscure. In an exhaustive article on the disturbances of gait in the aged Petrén described this gait and attributed it to cerebral arterio-sclerosis. He thinks this produces a subjective feeling of difficulty of locomotion which causes the incapacity. This view is in keeping with the fact that by encouragement and instruction it is not difficult to induce the patients to walk with comparative ease.

## THE AUSTRALASIAN MEDICAL CONGRESS.

THE eighth session of the Australasian Medical Congress will be held in Melbourne in 1908 under the presidency of Professor H. B. Allen, of the University of Melbourne, from Oct. 19th to 24th. The subscription is one guinea and will entitle every member to a copy of the Transactions of the Congress. The council of the University of Melbourne has granted the use of its buildings. The Government of Victoria has undertaken the printing of the Transactions. Addresses will be given in full congress by the presidents of the sections of medicine, surgery, pathology and bacteriology, and public health. Special meetings of the congress will be devoted to the following subjects: (1) the relations of the medical profession to hospitals; (2) syphilis. The work of the congress will be divided into the following 11 sections—namely, (1) medicine; (2) surgery; (3) obstetrics and gynæcology; (4) anatomy and physiology (with experimental pharmacology); (5) pathology and bacteriology; (6) public health and State medicine; (7) diseases of the eye, ear, and throat; (8) neurology and psychiatry; (9) diseases of children; (10) naval and military medicine and surgery; and (11) diseases of the skin, radiotherapy, and radiography. The general secretary is Dr. H. C. Maudsley, 8, Collins-street, Melbourne.

## ANTIDIPHTHERIAL SERUM AND DIPHTHERIAL PARALYSIS.

SOME divergence of opinion has existed as to the relationship between the use of antidiphtherial serum and the occurrence of paralysis after the disease. When antitoxin was first introduced it was noted that the percentage of cases in which paralysis occurred was apparently increased, and there was some tendency to blame the new remedy for this sequel. It was, however, pointed out that the apparent increase in cases of paralysis was explicable on the ground that many severe cases of diphtheria which would have died in olden days were now saved by the antitoxin and lived to suffer from some degree of paralysis instead of dying outright. It has even been maintained by Comby that antitoxin, far from causing the paralysis, is actually a remedy of value even after this condition has supervened, and there is little doubt that early recourse to the remedy reduces the liability to subsequent affection of the nerves. Some recent experiments by Dr. M. J. Rosenau and Dr. J. F. Anderson, carried out in the Hygienic Laboratory of the United States Public Health Service,[1] throw further light upon the question. It seems that the guinea-pig suffers from a form of paralysis caused by the toxin of diphtheria which is almost exactly similar to that seen in mankind. In this animal a small dose of antitoxin given at the time of infection, or before it, suffices to prevent the occurrence of paralysis, but if 48 hours are allowed to elapse before it is administered then the remedy has no effect, nor can it influence the paralysis when it has actually developed. This is after all what might be expected, for the occurrence of paralysis depends upon degenerative changes in the nerve-fibres, a condition which is clearly beyond the reach of any antitoxic remedy. It may, however, still be argued that if antitoxin has not already been administered it would be well to give a dose even when the paralysis has appeared in order to neutralise any toxin which may still be circulating in the blood and which may aggravate the nervous lesion. Experience alone can decide how long any toxin may remain in the system unneutralised; but we expect that in most cases by the time paralysis has occurred the toxin has done its work and disappeared.

## EPIDEMIC CEREBRO-SPINAL FEVER.

IN London during the month of August there were 13 cases of epidemic cerebro-spinal fever notified, of which two each belonged to Shoreditch, Bethnal Green, Stepney, and Camberwell, and one to each of five other boroughs. In Scotland during the week ended Sept. 14th there were ten deaths from this cause registered in Glasgow, six in Edinburgh, and two in Dundee. In Glasgow the weekly report issued on Sept. 13th showed that there were at that time 29 cases under treatment. In Belfast during the week ended Sept. 14th there were five deaths registered as being due to this cause.

THE Department of Public Health of Queensland in a bulletin dated August 10th states that no case of plague has occurred in Brisbane since July 20th. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Sept. 13th states that for the week ending Sept. 12th there were 11 cases of plague and 11 deaths from the disease.

THE second Norman Kerr lecture of the Society for the Study of Inebriety will be delivered in the hall of the Royal Society of Medicine, 20, Hanover-square, London, W., on Tuesday, Oct. 8th, at 8 30 P.M., by Dr. R. W Branthwaite, H.M. Inspector under the Inebriates Act. The subject is "Inebriety, its Causation and Control."

Dr. D. C. McVail has been reappointed member of the General Medical Council representing the Crown for Scotland.

# NOTES UPON HEALTH RESORTS.

## THE WATER-SUPPLY OF AIX-LES-BAINS (SAVOIE).

THE remarkable development of Aix-les-Bains as a thermal station during the last quarter of a century and the enhanced requirements for potable water have rendered it absolutely necessary to seek to add to existing supplies. A scheme has been elaborated by the municipality to obtain the additional supply from Lake Bourget and in these circumstances it appeared to us desirable to make an independent examination of the lake water under conditions as similar as possible to those adopted by the authorities in respect of date, depth, and site of collection of samples. In justification of this step we may point out that Aix-les-Bains is one of the most popular watering-places on the continent and is frequented by very large numbers of English and American visitors, some of whom go there in order to benefit by the thermal treatment and others in order to enjoy the amusements offered by the casinos and similar places of entertainment, whilst many are attracted by the natural beauties of this land of mountains and lakes. Inasmuch as the health of this large and important contingent of foreign visitors is at the mercy of any hygienic indiscretion on the part of the local authorities we have thought it incumbent upon us, on our own initiative and following a precedent already set by us in respect of the water-supplies of Chicago and other municipalities, to form an opinion as to the advisability or otherwise of the scheme. We may add, however, that in the carrying out of our inquiry every assistance has been afforded to us by the mayor, M. Mottet; M. Luya, the town surveyor; Dr. Bleicher, the public analyst; and Dr. Marty, whose kindness in facilitating the collection and dispatch of our samples we gratefully acknowledge.

---

[1] Rosenau and Anderson: Bulletin No. 38, U.S. Public Health and Marine-Hospital Service. Washington, 1907.

Incidentally our inquiry bears upon the suitability of lake water in general for domestic consumption and we therefore embody a synopsis of the results obtained by other observers. Although picturesquely situated in a valley surrounded by imposing mountains, snow-clad for several months in the year, and in proximity to Lake Bourget, the Aix district is singularly poor in water suitable for domestic use. No rivers or streams of any size find their way into the Aix Valley and such streams as there are usually run dry during the summer, so that hitherto the water-supply of Aix has been exclusively drawn from springs issuing at the foot of Mount Revard. This water, which is of a very high quality, is stored in three reservoirs (Chevalley, 600 cubic metres; Boncelin, 370 cubic metres; and Chatelard, 1440 cubic metres).[1] The total yield amounts to about 3500 cubic metres daily.

Aix-les-Bains has a resident population of 8300 but during the season close on 40,000 visitors patronise the 63 hotels and 141 chalets and furnished houses provided for their reception. The comparative paucity of potable water seems strange in view of the abundance of the thermal springs which from time immemorial have yielded upwards of 1,000,000 gallons daily at a temperature of between 45·6° and 46° C. in addition to 27,000 gallons of comparatively cold water from another spring which is principally utilised for the purpose of modifying the temperature of the thermal springs for baths and douches. The springs of St. Simon and Massonat furnish a limited supply of slightly mineralised water which has been utilised to some extent for therapeutical purposes. Quite recently, however, a spring yielding an excellent mineral water was unearthed at Corbières, on the flanks of Mount Revard, and this was baptised "Eau des Deux Reines" in commemoration of the fact that the two Queens of Holland were among the first to appreciate the qualities of the newly discovered spring. The geological origin of the "Deux Reines" water insures absolute freedom from contamination, and repeated analyses by independent authorities have shown it to be microbiologically one of the purest of medicinal and table waters. Its total dry residues do not exceed nine grains per gallon, so that it is well adapted for consumption as an *eau de régime* and as a neutral, slightly diuretic table water.

This water, which contains free oxygen in solution, is too valuable to be made use of for domestic purposes, so that it does not come within the scope of the present article. The demand for additional water-supply, long foreseen, became particularly urgent in 1906 in consequence of the prolonged drought, and the municipality was invited to give to the matter its serious attention. For some years past in the height of summer it has been necessary to curtail the water used for watering the streets—a real hardship in view of the enormous vehicular traffic and the yearly increasing number of motor-cars that bring visitors to Aix or pass through on their way to more distant parts of the continent. Even the domestic supply has had to be suspended at times, the mains being cut off at night, thus entailing much discomfort and some risk to the inhabitants,[2] in addition to the danger of contamination by suction into the empty pipes from the surrounding soil.

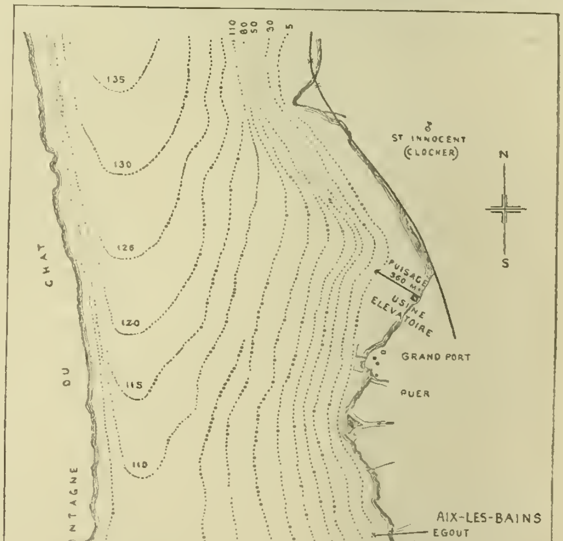
Inasmuch as all available sources of spring water have long since been requisitioned, it was only natural to consider the possibility of utilising the water of Lake Bourget. This, the largest of French lakes, is some 12 miles long by two or three miles wide, and covers an area of over 11,000 acres. It attains in parts a depth of 150 metres, with an average of about 140 metres. Although it communicates with the Rhone through the Canal de Savières at the northern end and receives the Sierroz, the Leysse, and the Seran rivers, there is practically no current of water through the lake during the summer months, although during the autumn and spring it is no doubt efficiently scoured by extra water from the heavy rains and the melting of the snow on the neighbouring mountain slopes which raises the level of the Rhone to such an extent as to cause it to overflow into the lake. It was only natural that an endeavour should be made to utilise this immense natural reservoir for general and domestic purposes. Aix-les-Bains, which is at a distance of about one and a half miles from the lake, is the only town of any size on its shores, although there are a few small hamlets. The sewage of the town is conveyed into the lake through pipes which discharge at a distance of 400 metres from the bank and 1600 metres from the proposed place of captation. Moreover, the lake naturally receives all the sulphur water from the thermal establishment which amounts to upwards of 1,000,000 gallons daily. The matter has received attention at intervals for many years past but last year a special commission was appointed to study the question, more particularly with the object of ascertaining the degree of purity of the lake water at different spots and depths and incidentally to ascertain the best place whence to draw the supply. This commission drew up a report from which we glean the following data.

The best results in respect of purity were given by samples taken at 15 metres depth, as shown in the following details. At 15 metres depth: free oxygen in solution, 8·625 per litre; total hardness, 16·5°; permanent hardness, 4·5°; number of aerobic germs per cubic centimetre, 116. At 25 metres depth: free oxygen in solution, 8·128 per litre; total hardness, 17°; permanent hardness, 4·5°; number of aerobic germs per cubic centimetre, 129.

The temperature in degrees centigrade at various depths as ascertained by M. Delebecque was as follows:—

| | Feb. | March. | June. | July. | August. |
|---|---|---|---|---|---|
| At the surface | 3 7 | 8 | 17·8 | 24 | 21·2 |
| At 15 metres depth | 3·7 | 5·3 | 8·1 | 10·2 | 14·2 |
| At 20 metres depth | 3 7 | 5 | 6·7 | 7·3 | 8·8 |
| At 25 metres depth | 3·8 | 5 | 6 | 7 | 7·2 |

Beyond 20 metres depth the temperature varies within very narrow limits, while at 15 metres the oscillations are so pronounced that in August water from that depth may reach 14·2° C. It was decided therefore to establish the intake at a depth of not less than 20 metres. Lake and river water, it is well known, always contains a certain proportion of nitrates derived from the washings of the soil in which these salts occur as the result of the process known as nitrification. This process of nitrification has been thoroughly investigated by M. Schloessing in respect of Lake Bourget. His investigation bore on samples



Map showing part of Lake Bourget. The dotted lines are horizontal contours of the bottom of the lake and show lines of equal depth of water in metres as marked.

---

[1] A cubic metre for all practical purposes is 220 gallons.

[2] The reality of the risk may be inferred from the fact that when the town-hall took fire last year no water-supply was available and it had to be allowed to burn itself out.

taken in conformity with his detailed directions (adding one cubic centimetre of chloroform per litre in order to prevent any further nitrification in transport), and the samples taken on June 28th, 1896, gave an average of 1·48 milligrammes of nitrogen in nitrates per litre. The scheme adopted by the municipality provides for the captation of water at a spot (see map) about 360 metres from the lake shore, between the Grand Port and the Cap de l'Ardre—that is to say, at a spot which is not in proximity to any source of contamination such for instance, as the inlet of a stream or river. This part of the shore consists of coarse sand and pebbles and runs down at a gentle slope into the lake to within a few yards of the captation spot which is over a subaqueous precipice. The water at this spot is so clear that it is possible to see the bottom even at a great depth. It follows that there is little hindrance to the penetration of the sun's rays which, as is well known, exert a powerful purifying action on water. It is proposed to take 4400 cubic metres daily from the lake and to pump it through underground pipes across an inhabited area to a reservoir to be constructed on the heights of Corsuet where, as an additional precaution, it is to be filtered through gravel and sand before being distributed. This reservoir will have a capacity of 4400 cubic metres, equal to half a day's supply. The deep aperture of the intake pipe will project over a ledge in the bottom of the lake and will be secured by a metal frame-work at a sufficient distance from the side to avoid stirring up mud, of which in any case there can be but little in view of the sharp declivity.

In an excellent synopsis of his researches into available water-supplies in the district of Chambéry, which includes that of Aix-les-Bains, Professor Hollande, D.Sc., gives much practical information based on direct observation of the value of lake waters in respect of their use for domestic purposes.[3] He points out that lake water is invariably softer than the water brought to it by the various tributaries except, perhaps, in the case of certain very small collections such as the neighbouring lakes of St. Hélène, St. André, des Pères, &c., the waters of which are stagnant. Lake Bourget, on the other hand, is the largest of French lakes and the water taken from the western shore—that is to say, on the side opposite Aix-les-Bains—is a good potable water.

In regard to bacteriological examination this water was found to contain 150 aerobic germs per cubic centimetre, the count having been made on the twentieth day after inoculation. These consisted of the micrococcus aquatilis, bacillus flavus liquefaciens, and the bacterium termo. Search for various pathogenic organisms proved negative.

The samples for chemical analysis were collected in December, 1906, in glass receptacles previously heated to redness and emptied of air by the air-pump. These were let down to the measured depth and allowed to fill *secundum artem*. They were hermetically sealed on being withdrawn and carefully packed for despatch to London. The site of collection was 350 metres from the lake shore between the Grand Port and the promontory of St. Innocent, the temperature at the time being 0°C. The temperature at the various depths was as follows:—At one metre, 5° C.; at five metres, 7°C.; at ten metres, 10°C.; at 15 metres, 10°C.; at 20 metres, 10°C.; and at 25 metres, 9·9°C.

As shown by the accompanying table of analytical results the differences found at various depths are hardly appreciable, but the evidence, on the whole, is slightly in favour of the deeper samples. Curiously enough the best sample of all is that taken from the intermediate depth of ten metres. All the samples of water were quite limpid, bright, bluish in tint, and free from odour. All proved to be decidedly soft, but owing to a small amount of lime salts which comprise the total solids they are without action on lead. There is not the slightest evidence of pollution and not the slightest trace of the presence of organic matter derived from the soil, search for albuminoid ammonia giving in every instance an absolutely negative result, while the free ammonia practically amounted to nothing in the case of the water taken from a depth of five metres. The water taken from a depth of 15 metres shows the same freedom from organic impurity as that of Loch Katrine in Scotland, with the advantage that it contains a somewhat larger proportion of mineral salts which prevent any action on lead pipes. We need hardly point out that a water of this very pure description needs, of course, to be jealously guarded against contamination, since pathogenic germs are peculiarly prone to multiply very rapidly in such waters.

*Analysis of Waters taken at Different Depths from Lake Bourget, Aix-les-Bains.—Parts per 100,000.*

| Depth. | Appearance. | Free ammonia. | Albuminoid ammonia. | Chlorine in chlorides. | Common salt. | Nitrogen in nitrates. | Total solids. |
|---|---|---|---|---|---|---|---|
| 1 metre. | Bright and clear. | *Nil.* | *Nil.* | 1·00 | 1·65 | 0·040 | 18·00 |
| 5 metres. | " | 0·005 | " | 0·70 | 1·15 | 0·040 | 18·00 |
| 10 metres. | " | *Nil.* | " | 0·40 | 0·66 | 0·040 | 15·00 |
| 15 metres. | " | 0·005 | " | 0·600 | 0·980 | 0·032 | 16·00 |
| 20 metres. | " | *Nil.* | " | 0·700 | 1·150 | 0·032 | 16·00 |

The sample taken at 25 metres was lost through breakage of the flask in transit. The waters contain lime salts chiefly irremoveable by boiling. The total solids practically consisted of lime salts.

### MICRO ORGANISMS IN LAKE WATER.

The subject has been very thoroughly investigated by various observers and it may be well to refer to the results obtained by them in order to afford a ground for comparison. Frankland in his work on "Micro-organisms in Water" points out that the water of Lac Leman at Geneva proved to contain as many as 150,000 organisms per cubic centimetre near the shore, whereas water taken from the middle of the lake only contained 38. These results were confirmed by Karlinski. In the Borke lake, near Koujca, in Herzegovina, water from the surface of the lake, at a distance of 200 metres from the shore, yielded 4000 organisms per cubic centimetre, while close to the shore, in the vicinity of the reeds, they numbered 16,000. The observer also examined the water at various depths and discovered great differences in respect of the abundance of micro-organic life. These examinations were conducted anaerobically as well, so that the maximum number of organisms would thus be detected. While on the surface each cubic centimetre contained 4000, at a depth of only five metres the number fell to 1000; at ten metres rarely more than 600; and at still lower depths, from 12 to 16 metres, only between 200 and 300 per cubic centimetre were found. At the bottom of the lake when the mud was stirred up the proportion rose to 6000. These figures represent the average of some 60 observations.

Cremer gave as the result of 50 examinations of the water of the Lake of Zürich an average of between 42 and 71 organisms per cubic centimetre according to the time of the year, the proportion being higher during the winter. The water of Lucerne gave from 8 to 51 organisms per cubic centimetre, the latter figure being reached in water taken from shallow parts where it was disturbed by steamboat traffic. Loch Katrine water as delivered at Glasgow was found (1892) to contain 74 organisms per cubic centimetre, while the Loch of Lintrathen at the foot of the Grampians, from which Dundee is supplied, gave from 94 to 260, or an average of 170, the samples having been taken from the service pipe inside the city. This water at its exit from the lake only contained 30 per cubic centimetre, while near the shore the average number of organisms was 4000 per cubic centimetre. Frankland remarks that lake water contains a very small number of micro-organisms, as one would expect considering the opportunities afforded for prolonged subsidence. Lake water consequently contains a much smaller proportion of organisms than that of the streams running into them—a fact which is strikingly exemplified in the case of Loch Lintrathen just referred to and the two principal rivers that discharge into it. The streams contained 1700 and 780 organisms per cubic centimetre respectively, whereas the water delivered at Dundee only contained 30. Stephenson and Tidy[4] observe that "water stored in large lakes is as a rule potable, soft, and little liable to serious pollution from animal matters, but with very small lakes and ponds the water is often more largely contaminated, since the proportion of sewage and drainage from manured lands is great in proportion to the volume of the effluent water.'

### GENERAL CONCLUSIONS.

The general conclusions to be drawn from the results of many years' attentive study of lake water by competent authorities tend to show that in lakes of considerable size the water is almost free from extensive contamination. Such contamination as results from the discharge of sewage and impure river water is restricted to a very limited area and is soon disposed of by the various oxidising agencies aided by sunlight and sedimentation. The importance of the last factor is in proportion to the absence of current and other causes of motion. At a distance of 200 metres and upwards from the lake shore all trace of soil contamination disappears, and although the surface water still contains a moderate proportion of micro-organic life the water at depths between 15 and 20 metres is remarkably constant in point of purity and temperature. These general results, confirmed by our independent examination of the water of Lake Bourget, authorise the view that this water is eminently suitable for domestic use and that its employment is unlikely to be attended by any injurious effect on the public health. The very moderate amount of micro-organic life which it contains will, no doubt, judging from experience elsewhere, be still further reduced by filtration and we may congratulate the municipality of Aix-les-Bains on having been able to remedy a very obvious shortcoming in an important department of the public service.

---

[3] Sources de l'Arrondissement de Chambéry; published by Mérian Chambéry, 1904.

[4] Treatise on Hygiene and Public Health, vol. i. (1892).

# THE TOWN COUNCIL OF SOUTHEND-ON-SEA AND ITS MEDICAL OFFICER.

ONLY one of the 24 members of the Southend borough council was absent at the ordinary monthly meeting on Tuesday evening last, when the Health Committee submitted recommendations with regard to the re-appointment of Dr. J. T. C. Nash as medical officer of health. At the August meeting his formal appointment was opposed and as he declined to accept £500 instead of £600 a year it was decided to advertise for an officer at the lower figure. At a subsequent meeting, however, a resolution was carried that the original motion should be considered, and this week the Health Committee brought up recommendations accordingly. The gallery was crowded with burgesses who manifested that they were not in sympathy with the council's treatment of Dr. Nash; in fact, so pronounced and frequent were their comments that the mayor had to request that no feeling, one way or the other, should be expressed by the public.

Alderman J. FRANCIS, chairman of the Health Committee, in moving the recommendations, said: I do not think that any chairman of a committee of this council has ever before been placed in the position in which I find myself to-day. It is very well known that the work of this council is divided into departments, that each department is controlled by a committee, and that with the committee there is a chief official, and under him a staff. It has been customary, whenever a chief official is required for one of the departments, for the committee having charge of the work to deal with the applications and to bring to this council, as a rule, three names, so that the council may ultimately decide who should have the appointment. And having once made the appointment the chief official deals directly with his committee, and the committee through its chairman with the council. If at any time it became necessary to reappoint a chief official the recommendation of the particular committee has always been accepted by the council. I think it will be admitted that this is a good and proper custom. At the last monthly meeting of this council the good old-fashioned custom was entirely ignored and for the first time in the history of this borough the recommendation of the Health Committee to reappoint a chief officer was thrown overboard without one word of explanation or any reason whatever either to the official concerned or to the chairman or to the committee as a whole. I suggest, Mr. Mayor, in the interest of good government that that ought not to be. I suggest most seriously that if any members of this council are of opinion that an official is not a proper man to remain in the service of the corporation the duty of those members is to inform the chairman of the committee concerned so that he may bring the matter before the members of his committee and take their opinion and instructions. Again, speaking in all seriousness, I say that this is the proper course to adopt and although it has been departed from on this occasion I hope it will never be departed from again. What is the result? We are to-day placed in a very serious position. The town has had an advertisement the result of which it may take years to eradicate. In the first place, although we have not yet heard much from the Local Government Board, we are in conflict with that Board; secondly, we have had a very strong protest from the members of the medical profession; and thirdly, I must not overlook the fact that, rightly or wrongly, the opinion is that if one chief official has been unfairly treated there must be unrest among other chief officials—that goes without saying. There is another serious aspect of the matter—the financial aspect. Members of this council, as business men, know that when money is being lent—we will say, if you like, upon security of property—not only is the property looked at but the borrower is also. No man who lends money upon security of property wishes to buy trouble. Therefore, he looks at the man to whom he is asked to lend so that he may form an opinion whether his interest will be promptly paid when it becomes due. What applies to private persons applies equally to a corporation, and if you care to study carefully the list of corporation stock you will see that for yourself. You will find one borough 3¼ per cent. stock quoted at a lower rate than our own 3 per cent. That speaks for itself, because there are reasons. I have already had a warning note—in fact, notes—that if this corporation loses its reputation for fair dealing we shall have greater trouble in the days to come, when we shall have to face an expenditure amounting to a quarter of a million sterling and when we must have the money at any price. It behoves us, therefore, if we have made a mistake, to put our house in order before it is too late. At the last monthly meeting of the council I moved the reappointment of Dr. Nash quite as a formal matter, without having the slightest idea that anyone would oppose it. I do not think it necessary to advance any further reasons why Dr. Nash should be reappointed, but I will give you the terms of his original appointment. Dr. Nash was appointed medical officer of health in 1901 at a salary of £400 per annum, rising by annual increments of £25 to £500. But there was a stipulation that Dr. Nash should be allowed to undertake privately analyses, laboratory work, and other duties of a similar character. In 1903, when the salary automatically became £450, it was decided to increase it to £500, and one of the reasons given at the time was that although up to then Dr. Nash had had the right to charge certain fees, as a matter of fact he had not charged those fees. He stated that in the interests of the borough it was far better that there should be no such charges but that the medical profession should be encouraged to send specimens to the laboratory without anything having to be paid by the town therefor. Mention has been made of the duties which Dr. Nash had to perform in connexion with the schools. It was distinctly understood when he was appointed that he should merely visit the schools and see that the sanitary condition was in proper order. In 1906 the salary was increased to £600, and one reason for the increase was the large increase in the work of the department, and another main reason was the large amount of work which Dr. Nash undertook inconnexion with the Hobart case, work quite outside his duties as medical officer. Had that work been performed by an expert the cost, as the Law and Parliamentary Committee knows, would have reached at least £350. The laboratory work is not very well understood by outsiders and not by certain members of the council. I am not saying that offensively, because if you are working on one committee you cannot be expected to be acquainted with the details of another committee. In 1905 Dr. Nash examined 923 specimens at the laboratory—that in itself is work quite apart from the duties of medical officer of health. The sanatorium work is, perhaps, better understood. I have heard remarks about the expenditure in connexion with the sanatorium. It may be interesting to this council to know that for the year ended March, 1901—before Dr. Nash was appointed—the expenditure was £1865; in the year ended March, 1906—notwithstanding that the population had almost doubled—the expenditure was only £1724. Those figures have never been given to the corporation before and I hope they will prove that there is someone at the helm who has had regard for the expenditure. Here are some more figures: During the four years, 1899 to

1903—before Dr. Nash got his own way with regard to shellfish—there were 20 cases of typhoid fever for every 10 000 of the population; during the four years 1903 to 1907 there have been only 3 cases per 10,000; and from Jan. 1st last to August 31st there were only two cases. What does this mean? It means that not only have we a reputation second to no other seaside town but also that a large expenditure has been saved in connexion with this disease alone. The expenditure in connexion with each typhoid patient is not less than £10, and if you compare the 20 per 10,000 with the 3 you will find that the expenditure must have been lessened by £700. All this I cannot claim is due to Dr. Nash, but it is proof that you have a man of great ability who is doing his level best for the town whether it gives offence to individuals or not. I say, when you have an officer who is doing good service he should be appreciated. If you have an officer who you think it is desirable should be removed or that someone else should take his place—if you like to put it that way—the man is entitled to fair notice; and I say that no public body should be guilty of kicking a man out without giving him fair notice or sufficient and good reason for getting rid of him. At the last monthly meeting I stated that some members voted without considering what the result might be. We all make mistakes. I have made many, and I admit it frankly, but when I have made a mistake no one can say I have not admitted it and apologised. Men may change their minds without lessening their dignity, and I feel sure if certain members will do that to-day they will never regret it and they will have the satisfaction of knowing that although they were parties to doing something which according to the views of the great majority was not right they did the next best thing—retraced their steps and did their best to put things right.

Alderman Francis added that at the last meeting Councillor Garon, although he had nothing against Dr. Nash, objected to a man being appointed for a term without the council having an equal right. He agreed with Councillor Garon that all the chief officers should be appointed on equal terms and would amend the committee's recommendations accordingly. He proposed that the resolution to advertise for a medical officer be rescinded and he said that if that were carried he would move that Dr. Nash be reappointed at £600 a year but that the appointment could be determined by three months' notice on either side.

Councillor COLIN CAMPBELL, chairman of the Education Committee, for which Dr. Nash is also medical officer, seconded the motion.

Councillor LEANEY opposed on the ground that Dr. Nash had not been loyal to the borough. He alleged that Dr. Nash had given evidence detrimental to the town before the House of Lords and had also said that he would not bathe in the sea off Southend for £1000.

Questioned by Alderman FRANCIS Councillor LEANEY admitted that there was no official record of Dr. Nash having made the remark about the £1000. It was stated, Councillor Leaney said, when Dr. Nash was on the pleasure steamer the *Koh-i-Noor*.

Alderman FRANCIS: The impression you gave was that the remark was in the blue-book now in your hand.

Councillor HUBBARD considered that it was very undignified on Councillor Leaney's part to introduce a remark made casually on a pleasure trip, as even if it had been made it might have meant nothing. As for Dr. Nash's evidence before the House of Lords, if it were true no one had cause to complain. He hoped the day would never come when Southend had a medical officer who would be prepared to go into a witness-box and say that which was not true to please any member of the council.

After a heated debate the Health Committee's recommendation was defeated by 12 to 11 votes.

Councillor LEANEY suggested that to effect a compromise a private meeting of the council should be called; but Alderman FRANCIS said that he should be opposed to anything private. Many things had been said, and it would be hinted that many more might be said. Whatever more there was to say it should be said publicly.

---

CARDIFF INFIRMARY.—At a meeting of the committee of the Cardiff Infirmary held on Sept. 12th it was reported that £17,746 had been received towards the erection of the new wing for the institution, leaving £12,252 still to be obtained.

---

# THE STUDY OF TROPICAL MEDICINE: THE MARY KINGSLEY MEDAL.

WHEN Miss Mary Kingsley, the famous African traveller, died in 1900, the Liverpool School of Tropical Medicine decided to commemorate her work in the tropics by the issue of a "Mary Kingsley Medal," to be presented to those who have distinguished themselves in the work of special research into tropical medicine. The medal was designed by Mr. J. H. McNair and Professor Allen of the University of Liverpool. It is in bronze and contains a bas-relief portrait of Miss Kingsley on the obverse and a suitable design on the reverse with the inscription "Devotion to Science." The first four recipients were presented with the medals by H.R.H. Princess Christian, honorary president of the school. The later presentations have since been made, by the courtesy of His Majesty's Secretary of State for Foreign Affairs, through the British Ambassadors to the various countries concerned.

The following is the official list supplied to us of those who have received the medal, with a note of their work:—

"1. Colonel David Bruce, F.R.S., C.B., R.A.M.C. He discovered the cause of Malta fever, an important disease of warm climates, in 1887. In 1894 he showed that the famous nagana, or tsetse-fly disease of cattle in Africa, is caused by parasites belonging to the group called trypanosomes, which are carried from one animal to another by the agency of glossina or tsetse flies. In 1903 he was the head of the Commission which clearly demonstrated that another kind of trypanosome is the cause of sleeping sickness in man and is carried by another kind of glossina. Since then he has ably directed an extensive inquiry into Malta fever which has proved that that malady is produced by the milk of infected goats.

2. Geheimrath Professor Dr. Robert Koch, Nobel Laureate. He ascertained the cause of cholera in 1883, shortly after his epoch-marking discovery of the cause of tuberculosis. Later he paid many visits to the tropics to study tropical diseases and has added much to our knowledge regarding them, especially his discovery of the frequency of malarial infection in children.

3. Dr. A. Laveran, of the Pasteur Institute, Paris, and D.Sc., University of Liverpool. In 1880 he made the great discovery that malarial fever is caused by parasites in the blood and has added much to our knowledge of this disease and also of other tropical diseases, especially those caused by trypanosomes in man and animals.

4. Sir Patrick Manson, F.R.S., K.C.M.G., of the London School of Tropical Medicine. In 1878 he discovered that one of the parasites of man belonging to the group of filaria is carried by a kind of mosquito and since then he has contributed much to our knowledge of these parasites and the diseases caused by them and also to tropical medicine in general.

5. Dr. Basile Danilewsky, professor of physiology, University of Kharkoff. He discovered numerous parasites of the blood in a large number of animals shortly after Laveran's discovery was made, thus throwing much light on diseases of man due to similar organisms. His observations have been the basis of much of the work done since then on the subject.

6 Dr. Charles Finlay, chief sanitary officer of Cuba. In 1880 he originated the theory that yellow fever is carried by mosquitoes. By careful observations he ascertained the species of mosquito concerned and thus enabled the American Commission under Major Reed to verify the theory finally in 1901. The methods of preventing the disease, used since then with such brilliant success in Havana and Panama, were largely based upon his original suggestion.

7. Dr. Camille Golgi, professor of pathology, University of Pavia. In 1887 he made a complete study of the life-cycle of the parasites of malaria, showed that they belong to different varieties, and demonstrated that the attack of fever is caused by their sporulation, thus elucidating the whole subject of the infection within the human body.

8. Colonel W. C. Gorgas, United States Army. As chief sanitary officer of Havana he gave practical effect in 1902 to the discoveries of Finlay and of the American Commission in connexion with yellow fever and by his energy and capacity succeeded in banishing the disease from the city. Since then, as chief sanitary officer of the Canal Zone of the Isthmus of Panama, he has kept that area practically free

both from yellow fever and from malaria, thus enabling the construction of the Canal to be carried on in security. The practical sanitary labours of Colonel Gorgas have given the world the most brilliant possible example of what such work can effect in the tropics.

9. Waldemar Mordecai W. Haffkine, C.I.E. In 1893 he discovered a method of inoculation against cholera and proceeded to India in order to persuade the people to use it on a large scale. In 1896, on the outbreak of plague in India, he elaborated a similar method of inoculation against that disease also. Since then over 6,000,000 doses of his prophylactic have been prepared and issued by the Government of India and it has been shown to reduce the mortality among the inoculated to one-sixth. Prophylactics against other diseases have been prepared on the same principles.

10. Dr. Arthur Looss, professor of parasitology, School of Medicine, Cairo. He has done much work of great value in connexion with parasitology in general. His discovery of the fact that the young of the parasites called ankylostomes, which produce fatal anæmia in thousands of persons in many tropical countries, enter the body by the skin is one of leading importance.

11. Dr. Theobald Smith, professor of comparative pathology, Harvard University. In 1893 he discovered a new kind of blood parasite in the so-called Texas fever of cattle, and also showed that it is carried from diseased to healthy animals by ticks—a work of great importance in connexion with diseases both of man and animals."

## ASYLUM REPORTS.

*Dorset County Asylum* (*Report for the Year 1906–07*).—The number of patients in the asylum on March 31st, 1907, was 802, being five less than at the corresponding time last year. The county patients numbered 605, out-county patients 40, and private patients 157. During the year 1906 there were 153 patients (78 males and 75 females) admitted into the asylum, and of these 40 (19 males and 21 females) were private cases. Dr. P. W. Macdonald, the medical superintendent, reports that the number of first admissions is six less than last year, which he considers may be taken as an indication that at the present time no actual increase of insanity is manifesting itself among the population from which the bulk of the patients are drawn. He further adds that the type of case admitted during 1906 was not generally of a favourable character, in spite of the fact that only two cases of general paralysis were included among the admissions. The recovery-rate for 1906 was a high one, being 46·2 per cent. calculated on the total number of persons admitted. 67 patients (40 males and 27 females) died during the year, and the causes of death call for no special mention. The rate of maintenance, which has for some years past been 9*s.* 4*d.*, was only 9*s.* 0½*d.* during the whole of 1906. The chairman of the visiting committee reports that six new cottages for attendants have been erected under the supervision of the medical superintendent and the county surveyor without the assistance of a contractor, the inmates of the asylum contributing to the skilled and unskilled labour to a large extent. This course was adopted in consequence of the tenders received being considerably higher than the estimated cost, the actual outlay being £1430.

*West Sussex County Asylum, Chichester* (*Report for the Year 1906–07*).—There were 750 patients on the books of this asylum on Jan. 1st, 1906, of whom 205 were out-county cases and 14 were private patients. During the year 1906 there were 162 patients (71 males and 91 females) admitted. Mr. H. A. Kidd, the medical superintendent, reports that the character of the cases admitted continues to be bad. He has drawn up a table giving an index of the expectation as to the chances of recovery in these cases—viz., recovery probable, 34; recovery possible 18; recovery improbable, 47; and recovery impossible, 63; in other words, no less than 68 per cent. of the cases were of an incurable nature, and in only 21 per cent. was there a reasonable chance of recovery. The mean age of admission was 42, and ten persons were over 70 years of age. Of the 67 patients discharged, 43 were sent out as "recovered" and 21 as "relieved." There were 76 deaths (42 males and 34 females), giving a death-rate of 8·33 on the total number of persons under treatment. The vice-chairman of the visiting committee states in his report that a surgery and isolation block are in course of erection, and further that the building of a nurses' block has also been begun. The committee for a long time has had under consideration the question of providing separate accommodation for private patients and has now decided in the first instance to adapt one ward for that purpose at a cost, including fittings and equipments, not exceeding £120, to be charged to the private patients' account. The minimum charge for such patients is to be £1 1*s.* per week. The committee has also been considering for some years the question of formulating a scheme of superannuation allowances for the officers and staff of the asylum. This has now been completed and presented to the West Sussex county council for its approval. The profits derived from private patients for the year ending March 31st, 1907, were £407 15*s.* 2*d.*; from out-county patients £2356 14*s.* 10*d.*; together making £2764 10*s.*, out of which there has been spent on account of the surgery and isolation block the sum of £1068. The weekly rate of maintenance for cases belonging to the West Sussex Union has been reduced to 10*s.* 6*d.* The farming and garden account shows a profit of over £1100.

## Looking Back.

FROM

### THE LANCET, *SATURDAY*, Sept. 19th, 1829.

#### LECTURES ON THE EYE.

*To the Editor of* THE LANCET.

SIR,—Permit me to state the inconvenience, many students are put to, who receive their surgical education at the west end of the town. There are *four or five lecturers on surgery*, and strange to say, only one of them delivers lectures on the pathology of the eye. Now considering the number of diseases this beautiful and delicate organ is liable to be affected with, and the enormous sums received from pupils for attendance on these lectures, surely, some of the gentlemen might make an extension of a few lectures to their "*extended courses*,"* at once beneficial to their students, honest as regards themselves, and conferring that information which is calculated to alleviate, in a greater or less degree, the sufferings of mankind.

The insertion of this letter as early as possible will much oblige, and should this hint be the means of producing a reformation in this branch of surgical education, I shall be greatly rejoiced at having called the attention of the Surgical Lecturers to the subject. I am, Sir, yours,

September 15, 1829. H. W. DEWHURST.

---

* Vide their advertisements.

## VITAL STATISTICS.

#### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8072 births and 3793 deaths were registered during the week ending Sept. 14th. The annual rate of mortality, which had been equal to 11·5, 11·8, and 12·3 per 1000 in the three preceding weeks, was again 12·3 per 1000 in the week under notice. During the first eleven weeks of the current quarter the death-rate has averaged 12·0 per 1000, the rate during the same period being 11·9 per 1000 in London. The lowest death-rates in the 76 towns last week were 4·7 in Handsworth (Staffs), 5·8 in Hornsey, 6·0 in West Bromwich, 6·8 in Burton-on-Trent, and 6·9 in King's Norton; the highest rates were 17·4 in Sunderland, 17·5 in Rotherham, 17·7 in Sheffield, 18·0 in St. Helen's, and 20·0 in Tynemouth. The 3793 deaths in the 76 towns were slightly in excess of the number in the previous week, and included 485 which were referred to the principal epidemic diseases, against numbers increasing from 362 to 471 in the six preceding weeks; of these, 278 resulted from diarrhœa, 95 from whooping-cough, 39 from diphtheria, 35 from measles, 26 from scarlet fever, and 12 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Tottenham, Hornsey, York, Aston Manor, King's Norton, Newport (Mon.), or in five other of the 76 towns; the annual death-rates from these diseases, however, ranged upwards to 3·0 in Great Yarmouth, 3·1 in Bootle, 3·3 in Rotherham and in Gateshead, 3·4 in Liverpool, 3·5 in Sheffield, 3·6 in West Ham, and 3·9 in Cardiff. The fatal cases of diarrhœa have steadily increased in successive weeks from 39 in the second week of the quarter to 278 in the week under notice; the annual death-rates last week from this disease ranged upwards to 2·0 in Hull, 2·2 in Walsall, 2·5 in Sheffield, 2·6 in Liverpool, 2·7 in West Ham, 3·1 in Bootle, and 3·3 in Rotherham. The deaths from whooping-cough, which had been 76 and 80 in the two previous weeks, further rose last week to 95, the highest death-rates from this cause being 1·4 in West Hartlepool and in Merthyr Tydfil, 1·7 in Gateshead, and 2·0 in Great Yarmouth. The 39 fatal cases of diphtheria corresponded with the number in the preceding week, and included 11 in London, four in West Ham, and three each in Manchester and in Salford. The deaths from measles, which had been 84, 73, and 71 in the three preceding weeks, further declined in the week under notice to 35, of which 10 occurred in London and 10 in Cardiff, the annual rate in the latter town from this disease being 2·8 per 1000. The mortality from both scarlet fever and enteric fever showed a considerable reduction from that in other recent weeks and was not excessive in any of the large towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 2658 to 3816 in the 18 preceding weeks, had further risen to 3871 at the end of last week; 574 new cases were admitted during the week, against 440, 557, and 587 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 129 and 116 in the two previous weeks, rose again to 122 in the week under notice, but were five below the corrected average number in the corresponding period of the five years 1902–06. The causes of 34, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Manchester, Bristol, West Ham, Newcastle-on-Tyne, Hull, Salford, Portsmouth, and 51 other of the 76 towns; there were nine uncertified deaths in Liverpool, four in Birmingham, and three each in Sheffield, Bradford, and Gateshead.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·7 and 13·6 per 1000 in the two previous weeks, increased to 15·3 per 1000 in the week ending Sept. 14th, and was 3·0 per 1000 in excess of the mean rate during the same week in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·5 in Perth and 14·6 in Edinburgh, in Aberdeen, and in Greenock, to 15·7 in Glasgow and 16·7 in Dundee. The 532 deaths in these towns showed an increase of 61 over the number in the previous week, and included 69 which were referred to the principal epidemic diseases, against 65, 62, and 58 in the three preceding weeks. These 69 deaths were equal to an annual rate of 2·0 per 1000, which was 0·4 per 1000 above the mean rate last week from the principal epidemic diseases in the 76 large English towns; they included 22 which were referred to "fever," 20 to diarrhœa, 18 to whooping-cough, six to diphtheria, and three to measles, but not any to small-pox or to scarlet fever. The deaths from "fever," which had been seven, 19, and 11 in the three preceding weeks, rose again to 22 in the week under notice, and included 11 in Glasgow, eight in Edinburgh, and two in Dundee; of these 22 deaths 10 in Glasgow, six in Edinburgh, and two in Dundee resulted from cerebro-spinal meningitis. The fatal cases of diarrhœa, which had been 15 and 22 in the two previous weeks, declined again to 20 last week, and included 13 in Glasgow, three in Aberdeen, and two in Dundee. The deaths from whooping-cough, which had been 22, 19, and 22 in the three preceding weeks, decreased in the week under notice to 18, of which eight occurred in Glasgow, six in Edinburgh, and two in Leith. The fatal cases of diphtheria, which had been eight, seven, and one in the three preceding weeks, rose again to six last week, and included five in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 51 and 57 in the two preceding weeks, further rose to 61 in the week under notice, and slightly exceeded the number in the corresponding period of last year. The causes of 20, or 3·8 per cent., of the deaths in these eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

## HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 18·6 and 20·7 per 1000 in the two preceding weeks, declined again to 17·6 per 1000 in the week ending Sept. 14th. During the first 11 weeks of the current quarter the death-rate has averaged 18·7 per 1000, the rate during the same period being 11·9 in London and 12·5 in Edinburgh. The 132 deaths of Dublin residents registered during the week under notice showed a decline of 23 from the number in the preceding week, and included 15 which were referred to the principal epidemic diseases, against 17 and 12 in the two previous weeks; of these, nine resulted from diarrhœa, two from diphtheria, two from "fever," one from measles, and one from whooping-cough, but not any from small-pox or from scarlet fever. These 15 deaths were equal to an annual rate of 2·0 per 1000, the death-rate for the same week from the principal epidemic diseases being 1·4 in London and 2·4 in Edinburgh. The fatal cases of diarrhœa, which had been four, eight, and five in the three preceding weeks, rose again last week to nine. The 132 deaths from all causes during the week included 28 of children under one year of age and 36 of persons aged upwards of 60 years; the deaths of infants were slightly below the number in the previous week, while those of elderly persons showed a very marked decline. One death from violence and three inquest cases were registered during the week; and 62, or 47 per cent., of the deaths occurred in public institutions. The causes of two, or 1·5 per cent., of the deaths registered in Dublin last week were not certified; in London all the causes of death were duly certified, while in Edinburgh the proportion of uncertified deaths was 2·1 per cent. The 125 deaths in Belfast included five which were attributed to cerebro-spinal fever.

## VITAL STATISTICS OF LONDON DURING AUGUST, 1907.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·2 per 1000 of the population, estimated at 4,758,218 persons in the middle of the year; in the three preceding months the rates were 7·1, 7·2, and 8·7 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Hammersmith, the City of Westminster, Hampstead, and Lewisham; and the highest rates in Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. One case of small-pox was notified last month in Poplar and remained under treatment in the Metropolitan Asylums Hospital at the end of the month. The prevalence of scarlet fever showed a slight decline from the excessive amount in the preceding month; this disease was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, and Woolwich. The Metropolitan Asylums hospitals contained 3709 scarlet fever patients at the end of last month, against 2777, 2975, and 3578 at the end of the three preceding months; the weekly admissions averaged 469, against 368, 390, and 500 in the three preceding months. Diphtheria also showed a slightly diminished prevalence as compared with that recorded in July; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Fulham, Chelsea, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. There were 834 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 933, 806, and 913 at the end of the three preceding months; the weekly admissions averaged 116, against 121, 107, and 140 in the three preceding months. Enteric fever was more prevalent in August than in any other month since April last; this disease was proportionally most prevalent in Fulham, Hackney, the City of London, Battersea, Wandsworth, and Deptford. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 47, 57, and 50 at the end of the three preceding months, had risen again to 65 at the end of last month; the weekly

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1907.

(*Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1907. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| **LONDON** .. ... ... ... ... ... ... | **4,758,218** | **1** | **1992** | **556** | — | **95** | **2** | **25** | **308** | **13** | **2992** | **8·2** | — | **130** | **45** | **50** | **104** | — | **15** | **1** | **148** | **493** | **1·4** | **4102** | **11·2** | **98** |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... | 149,909 | — | 21 | 13 | — | 3 | 1 | — | 7 | — | 45 | 3·9 | — | 5 | — | 2 | 1 | — | — | — | — | 8 | 0·7 | 119 | 10·3 | 90 |
| Kensington ... ... ... ... ... ... | 181,842 | — | 23 | 15 | — | 3 | — | — | 7 | — | 48 | 3·4 | — | 4 | — | 1 | 1 | — | — | — | 5 | 11 | 0·8 | 151 | 10·8 | 169 |
| Hammersmith ... ... ... ... ... | 122,337 | — | 18 | 6 | — | — | — | — | 7 | — | 31 | 3·3 | — | 1 | — | 1 | 1 | — | — | — | 3 | 6 | 0·6 | 86 | 9·2 | 90 |
| Fulham ... ... ... ... ... ... ... | 166,749 | — | 44 | 26 | — | 8 | — | 2 | 8 | — | 88 | 6·9 | — | 8 | 2 | — | 4 | — | 1 | — | 10 | 25 | 2·0 | 145 | 11·3 | 125 |
| Chelsea ... ... ... ... ... ... ... | 74,857 | — | 13 | 15 | — | 2 | — | 1 | 5 | 1 | 37 | 6·4 | — | 4 | — | 1 | 1 | — | — | — | 2 | 8 | 1·4 | 64 | 11·1 | 143 |
| City of Westminster ... ... ... ... | 172,219 | — | 18 | 1 | — | 1 | — | 1 | 7 | — | 28 | 2·1 | — | 3 | — | — | 1 | — | — | — | 2 | 6 | 0·5 | 114 | 8·6 | 72 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone ... ... ... ... ... | 127,718 | — | 43 | 8 | — | 3 | — | 1 | 7 | — | 62 | 6·3 | — | — | — | 3 | 5 | — | 1 | — | 3 | 12 | 1·2 | 108 | 11·0 | 66 |
| Hampstead ... ... ... ... ... ... | 91,137 | — | 22 | 5 | — | — | — | — | 5 | — | 32 | 4·6 | — | — | — | — | — | — | — | — | — | — | — | 40 | 5·7 | 53 |
| St. Pancras ... ... ... ... ... ... | 236,753 | — | 48 | 34 | — | 5 | — | — | 16 | — | 103 | 5·7 | — | 7 | 1 | 3 | 7 | — | 2 | — | 4 | 24 | 1·3 | 206 | 11·3 | 92 |
| Islington ... ... ... ... ... ... ... | 347,017 | — | 92 | 35 | — | 4 | — | — | 15 | — | 146 | 5·5 | — | 12 | 3 | 4 | 3 | — | 1 | — | 6 | 29 | 1·1 | 268 | 10·1 | 68 |
| Stoke Newington ... ... ... ... ... | 53,613 | — | 16 | 4 | — | 2 | — | — | 2 | — | 24 | 5·8 | — | 1 | — | — | — | — | — | — | 1 | 2 | 0·5 | 33 | 8·0 | 68 |
| Hackney ... ... ... ... ... ... ... | 232,993 | — | 123 | 22 | — | 9 | — | 2 | 16 | — | 172 | 9·6 | — | 2 | 3 | 1 | 5 | — | 3 | — | 3 | 17 | 1·0 | 161 | 9·0 | 83 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn ... ... ... ... ... ... ... | 55,134 | — | 16 | 4 | — | 2 | — | — | 2 | — | 24 | 5·7 | — | 2 | — | — | — | — | — | — | 1 | 3 | 0·7 | 56 | 13·2 | 74 |
| Finsbury ... ... .. ... ... ... ... | 96,732 | — | 47 | 11 | — | 1 | — | — | 9 | — | 68 | 9·2 | — | 7 | 2 | 1 | 1 | — | — | — | 1 | 12 | 1·6 | 100 | 13·5 | 70 |
| City of London ... ... ... ... ... | 20,310 | — | 10 | — | — | 2 | — | — | — | — | 12 | 7·7 | — | 1 | — | — | — | — | — | — | — | 1 | 0·6 | 16 | 10·3 | — |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... | 115,662 | — | 72 | 16 | — | — | — | — | 10 | 2 | 100 | 11·3 | — | 4 | 2 | 1 | 9 | — | — | — | 10 | 26 | 2·9 | 150 | 16·9 | 140 |
| Bethnal Green ... ... ... ... ... | 130,831 | — | 114 | 21 | — | — | — | — | 11 | 2 | 148 | 14·7 | — | 2 | 2 | 1 | 3 | — | — | — | 2 | 10 | 1·0 | 132 | 13·2 | 98 |
| Stepney ... ... ... ... ... ... ... | 308,923 | — | 350 | 76 | — | 8 | — | 3 | 42 | 2 | 481 | 20·3 | — | 7 | 7 | 13 | 8 | — | — | 1 | 22 | 58 | 2·4 | 314 | 13·3 | 111 |
| Poplar ... ... ... ... ... ... ... | 171,086 | 1 | 131 | 28 | — | 2 | — | — | 12 | — | 174 | 13·3 | — | 1 | 4 | 3 | 9 | — | — | — | 8 | 25 | 1·9 | 167 | 12·7 | 126 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark ... ... ... ... ... ... | 209,781 | — | 96 | 49 | — | 4 | — | 5 | 11 | — | 165 | 10·3 | — | 11 | 3 | 2 | 2 | — | 1 | — | 14 | 33 | 2·1 | 226 | 14·0 | 120 |
| Bermondsey ... ... ... ... ... ... | 128.263 | — | 109 | 21 | — | 3 | — | 2 | 12 | 1 | 148 | 15·0 | — | 3 | 2 | — | — | — | — | — | 3 | 8 | 0·8 | 138 | 14·0 | 110 |
| Lambeth ... ... ... ... ... ... ... | 318,538 | — | 90 | 14 | — | 2 | 1 | | 18 | 1 | 131 | 5·4 | — | 8 | — | 3 | 9 | — | — | — | 8 | 28 | 1·1 | 301 | 12·3 | 107 |
| Battersea ... ... ... ... ... ... ... | 181,736 | — | 56 | 19 | — | 9 | — | — | 10 | 1 | 95 | 6·9 | — | 13 | 1 | 1 | 8 | — | 2 | — | 4 | 29 | 2·1 | 162 | 11·6 | 83 |
| Wandsworth ... ... ... ... ... ... | 281,419 | — | 96 | 31 | — | 11 | — | 2 | 19 | — | 159 | 7·4 | — | 8 | 1 | 2 | 11 | — | 2 | — | 11 | 35 | 1·6 | 223 | 10·3 | 105 |
| Camberwell ... ... ... ... ... ... | 277,059 | — | 96 | 29 | — | 1 | — | 1 | 21 | 2 | 150 | 7·1 | — | 9 | 3 | 3 | 5 | — | 1 | — | 9 | 30 | 1·4 | 239 | 11·2 | 92 |
| Deptford ... ... ... ... ... ... ... | 116,510 | — | 63 | 12 | — | 5 | — | — | 7 | — | 87 | 9·7 | — | 4 | 3 | 2 | 2 | — | 1 | — | 3 | 15 | 1·7 | 106 | 11·9 | 97 |
| Greenwich ... ... ... ... ... ... | 107,222 | — | 55 | 15 | — | 3 | — | — | 7 | — | 80 | 9·7 | — | — | 4 | — | 4 | — | — | — | 9 | 17 | 2·1 | 81 | 9·8 | 114 |
| Lewisham ... ... ... ... ... ... | 152,532 | — | 36 | 12 | — | 2 | — | — | 4 | 1 | 55 | 4·7 | — | 2 | 2 | 1 | — | — | — | — | 1 | 6 | 0·5 | 103 | 8·8 | 69 |
| Woolwich ... ... ... ... ... ... ... | 129,336 | — | 73 | 14 | — | — | — | — | 11 | — | 98 | 9·9 | — | 1 | — | 1 | 4 | — | — | — | 3 | 9 | 0·9 | 93 | 9·4 | 80 |
| Port of London ... ... ... ... ... | — | — | 1 | — | — | — | — | — | — | — | 1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

admissions averaged 15, against nine, 13, and nine in the three preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Bermondsey, and Woolwich. The 25 cases of puerperal fever notified during the month included five in Southwark, five in Lambeth, three in Stepney, and two each in Fulham, Hackney, Bermondsey, and Wandsworth. Of the 13 cases of cerebro-spinal meningitis notified during the month, two belonged to Shoreditch, two to Bethnal Green, two to Stepney, two to Camberwell, and one each to Chelsea, Bermondsey, Lambeth, Battersea, and Lewisham.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending August 31st the deaths of 4102 persons belonging to London were registered, equal to an annual rate of 11·2 per 1000; in the three preceding weeks the rates had been 14·0, 12·2, and 11·4 per 1000. The death-rates last month ranged from 5·7 in Hampstead, 8·0 in Stoke Newington, 8·6 in the City of Westminster, 8·8 in Lewisham, 9·0 in Hackney, and 9·2 in Hammersmith, to 13·2 in Holborn and in Bethnal Green, 13·3 in Stepney, 13·5 in Finsbury, 14·0 in Southwark and in Bermondsey, and 16 9 in Shoreditch. The 4102 deaths from all causes included 493 which were referred to the principal infectious diseases; of these, 130 resulted from measles, 45 from scarlet fever, 50 from diphtheria, 104 from whooping-cough, 15 from enteric fever, one from ill-defined pyrexia, and 148 from diarrhœa. No death from any of the principal infectious diseases was recorded last month in Hampstead; they caused the lowest death-rates in Hammersmith, the City of Westminster, Stoke Newington, the City of London, and Lewisham; and the highest rates in Fulham, Shoreditch, Stepney, Southwark, Battersea, and Greenwich. The 130 fatal cases of measles were 32 in excess of the corrected average number for the corresponding period of the five preceding years; this disease was proportionally most fatal in Fulham, Chelsea, Finsbury, Southwark, and Battersea. The 45 deaths from scarlet fever exceeded by six the corrected average number; the greatest proportional mortality from this disease was recorded in Finsbury, Stepney, Poplar, Deptford, and Greenwich. The 50 fatal cases of diphtheria was equal to the average for the corresponding period of the five years 1902–6; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, St. Marylebone, St. Pancras, Stepney, Poplar, and Deptford. The 104 deaths from whooping-cough were 18 above the corrected average number; the highest death-rates from this disease were recorded in St. Marylebone, Shoreditch, Poplar, Battersea, Wandsworth, and Greenwich. The 16 deaths from "fever" were 13 fewer than the average; they included three in Hackney and two each in St. Pancras, Battersea, and Wandsworth. The fatal cases of diarrhœa numbered only 148, against an average of 1330 in the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Fulham, Shoreditch, Stepney, Southwark, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was less than one third of the corrected average. There were four deaths of London residents attributed to cerebro-spinal fever last month; these deaths belonged respectively to Hammersmith, Chelsea, Shoreditch, and Bermondsey.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 98 per 1000. No death at this age was recorded in the City of London either in July or August; among the metropolitan boroughs the lowest rates of infant mortality last month were recorded in the City of Westminster, St. Marylebone, Hampstead, Holborn, Finsbury, and Lewisham; and the highest rates in Kensington, Fulham, Chelsea, Shoreditch, and Poplar.

## THE SERVICES.

### Royal Navy Medical Service.

The following appointments are notified:—Fleet-Surgeons: J. Andrews to the *Vivid*, for Pembroke Dockyard; J. Shand to the *Vengeance*; and A. Kidd to the *Defiance*. Surgeons: R. W. G. Stewart to Plymouth Hospital and E. F. Ellis to the *Andromeda*.

### Army Medical Service.

The undermentioned Colonels are placed on retired pay:—James Magill, C.B. (dated Sept. 6th, 1907); and William A. May, C B. (dated Sept. 18th, 1907).

The undermentioned Lieutenant-Colonels from the Royal Army Medical Corps to be Colonels: Douglas Wardrop, vice A. W. P. Inman, placed on half-pay (dated August 14th, 1907); George T. Goggin, vice J. Magill, C.B. (dated Sept. 6th, 1907); and John M. Jones, vice W. A. May, C.B. (dated Sept. 18th, 1907).

### Royal Army Medical Corps.

Captain Harry B. Connell, from the Seconded List, to be Captain (dated August 28th, 1907). Lieutenant-Colonel G. T. Goggin, Administrative Medical Officer at Belfast, has been appointed Principal Medical Officer of the Western Command (Chester), vice Colonel H. Martin.

### Army Medical Reserve of Officers.

Surgeon-Captain Samuel J. J. Kirby to be Surgeon-Major (dated August 28th, 1907).

### Volunteer Corps.

*Royal Garrison Artillery:* 1st North Riding of Yorkshire: Surgeon-Captain S. Farmer resigns his commission (dated August 31st, 1907).

*Rifle:* 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major G. Hollies to be Surgeon-Lieutenant-Colonel (dated August 1st, 1907).

### The United Services Medical Society.

The first meeting of this society will be held at the Royal Army Medical College, Millbank, S.W., on Oct. 10th, at 8 30 P.M., when the President, Inspector-General Sir Herbert Ellis, K.C.B., Director-General of the Medical Department of the Royal Navy, will read a short paper on the objects and uses of the society. There will afterwards be a discussion and arrangements have been made to exhibit objects of interest to members.

Lord Methuen has ordered that lectures on hygiene shall be given to all soldiers of the Eastern Command during the coming winter by officers of the Royal Army Medical Corps.

Fleet-Surgeon O. W. Andrews, R N., has been selected to represent the Admiralty at the forthcoming International Congress of Hygiene and Demography at Berlin. He represented the British navy at the last Paris Medical Congress.

## Correspondence.

"Audi alteram partem."

## ROYAL SOCIETY OF MEDICINE.

*To the Editors of* The Lancet.

Sirs,—As I have received a number of letters from those who, like your correspondent "Puzzled," have some difficulty in describing their connexion with the above society in the Medical Directory I would suggest that Fellows of the society should describe themselves as Fell.Roy.Soc.Med. If in addition they desire to mention the section or sections to which they belong they should describe themselves as Fell.Roy.Soc.Med. (Sections —— and ——), filling in the name of the section or sections. Members of sections who are not Fellows should describe themselves as Memb. —— Section Roy. Soc. Med., filling in the name of the section to which they belong. A Fellow has the right to attend the meetings of any section. He is a member (i.e., can take part in the business) of any section corresponding to his previous societies but of no other unless duly elected thereto. There are no members of the society, but each section has members who are not Fellows of the society. Such members of sections are those who having belonged to corresponding societies (or having been only elected to the particular sections) do not wish to become Fellows of the society.

I am, Sirs, yours faithfully,
Arthur Latham,
Honorary Secretary Royal Society of Medicine.

38, Portland place, W., Sept. 17th, 1907.

⁂ We understand that the publishers of the Medical Directory intend to put the initials F.R.S.M. after the names of Fellows of the society. The abbreviation is a serious error.—Ed. L.

## THE MEDICAL DIRECTORY.

*To the Editors of* THE LANCET.

SIRS,—May we be allowed through your columns to appeal to all members of the profession to return to us at once their circulars for the Medical Directory for 1908? The volume will be published about a fortnight earlier than has been customary, although the circulars were sent out a month later. It will thus be seen that the Medical Directory will be more up to date than formerly by six weeks, and in this effort, which will prove an advantage to all concerned, we rely upon the kind help always shown us by the profession.

We are, Sirs, your obedient servants,
THE EDITORS OF THE MEDICAL DIRECTORY.
7, Great Marlborough-street, London, W., Sept. 12th, 1907.

## ETHER INHALATION IN PULMONARY TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—Your correspondent, in suggesting the use of ether inhalation for the benefit of phthisis, advances one argument as a possible justification for the measure. This argument is the fact that cases of tuberculous peritonitis have been benefited by abdominal section and that perhaps the benefit has really been due to the ether inhaled. Now in face of the fact that clinical experience with regard to the administration of anæsthetics to the subjects of pulmonary tuberculosis is very adverse to the use of that anæsthetic it seems to me that some much stronger support for the practice is needed before we recommend the ether inhalation for the benefit of phthisis. Moreover, Wright has put forward a rational and extremely probable explanation of the benefit accruing in cases of tuberculous peritonitis in which the abdomen has been opened. My own experience, and I believe it tallies with that of most anæsthetists, as it certainly does with that of such physicians as I have met in connexion with cases of operation upon phthisical subjects, is that these cases form one of the classes in which chloroform is *par excellence* the anæsthetic to be chosen in contradistinction from ether. The latter drug is much more likely to increase the activity of an active, or arouse that of a latent, tuberculous focus in the lungs. The use of chloroform inhalation for phthisis in the manner suggested by Dr. R. H Hodgson has been recommended, but I am not aware of its having been tried or, if so, with what result. Nor can I recall from my own experience cases in which the lung trouble of a patient operated upon for lesion elsewhere has obviously benefited by the chloroform administered. On the contrary, however, I could inform Dr. Hodgson of several instances where pulmonary tuberculosis has been seriously aggravated after operations performed under ether.

I am, Sirs, yours faithfully,
Sept. 17th, 1907. J. BLUMFELD.

## THE WORKMEN'S COMPENSATION ACT, 1906.

*To the Editors of* THE LANCET.

SIRS,—The regulations of the Secretary of State as to the duties of medical referees have been issued to them, and the profession will be pleased to hear that it will not be the fault of the medical referees under those regulations if any breach of medical etiquette should occur. On reference being made to a medical referee by a registrar of a county court the referee is instructed to give notice of the time and place of his intended examination to both the workman or his solicitor, and to the employer or his solicitor, and printed forms are supplied for this purpose, on which it is distinctly stated that any statement made or submitted by either party will be considered.

It is quite clear that the Secretary of State could not go farther than this, unless the Treasury was prepared to pay for the attendance of medical men acting in the interests of either employer or employed, which, of course, would be impossible, owing to the immense expense it would entail. Naturally it will be in the interest of both employer and the workman to place before the medical referee the fullest possible statement of the case as it appears to them, and this cannot properly be done except by a medical man. I feel quite sure that medical referees will be pleased to meet any qualified practitioner asked to attend by either employer or workman, and, in fact, by the wording of the regulation they could not refuse to do so.

The regulations also contain the following paragraph, which I think will meet with the general approval of the profession: "In cases involving special difficulty the medical referee may apply to the Secretary of State for special assistance, which may be granted by the Secretary of State, if he think fit, on such terms as to remuneration or otherwise as he may with the sanction of the Treasury determine" I am, Sirs, yours faithfully,
S. Hampstead, N.W. ALBERT BENTHALL, F.R.C.P. Edin.

## ACUTE ARTHRITIS COMPLICATING OPHTHALMIA NEONATORUM.

*To the Editors of* THE LANCET.

SIRS,—Mr. J. H. F. Nunn's contribution on this subject as it appeared in your issue of Sept. 14th, p. 771, is certainly one of great interest, but though arthritis as a complication of ophthalmia neonatorum is very exceptional it is not quite such a rarity as Mr. Nunn's paper would seem to imply. The condition was first described by Mr. R. Clement Lucas in 1885; subsequently Mr. Lucas published an elaborate paper on the subject, together with an analysis of the records of 23 cases as collected from British and European medical literature (*Medico-Chirurgical Transactions*, vol. lxxxii.). An interesting description of the joint affections is also given in Mr. Sydney Stephenson's "Contagious Ophthalmia," and personally I communicated an example of the disease to the Society for the Study of Disease in Children in 1902 and the record of this appeared in your issue of May 31st of that year, p. 1529. The condition is thus a well-established one but it is of such rarity and interest that all concerned must be glad that Mr. Nunn has put his own personal experience on record. I am, Sirs, yours faithfully,
London, W., Sept. 16th, 1907. C. O. HAWTHORNE.

*To the Editors of* THE LANCET.

SIRS,—Cases of arthritis in association with ophthalmia due to gonococci, of which Mr. J. H. F. Nunn has reported a good instance in THE LANCET of Sept. 14th, p. 771, although rare, are, of course, well known to ophthalmic surgeons. For the first observation of the kind we have to thank that acute observer, Mr. R. Clement Lucas.[1] Soon afterwards a case was reported by Dr. Johan Widmark[2] in a baby who developed ophthalmia on the sixteenth day of life, having presumably contracted the disorder from another child in the same ward. On the sixteenth day of the conjunctival inflammation the baby developed arthritis of one ankle, which subsided in something less than a fortnight under simple treatment. Widmark's communication, which was originally published in the Swedish language, will be found in that author's *Beiträge zur Ophthalmologie*, p. 95, 1891. In the same year that Lucas and Widmark wrote, another observation of the kind was published by Fendick.[3] Gonococci have been found in the affected joints by several surgeons, as Deutschmann, Hoeck, Haushalter, Heiman, Paulsen, and Altland. The infection, however, seems to be often a mixed one. While this form of gonococcal arthritis is nowadays well known I believe that arthritis in association with penumococcal ophthalmia neonatorum, of which I have seen two cases, has not yet been described.

I am, Sirs, yours faithfully,
Welbeck-street, W., Sept. 14th, 1907. SYDNEY STEPHENSON.

## ATHLETICS AND FOOD VALUES.

*To the Editors of* THE LANCET.

SIRS,—The existence of the British Empire depends largely upon the efficiency of the British soldier and the efficiency of the British soldier is greatly affected by the quality of his food and drink During the course of a recent walking tour among the volcanic mountains and precipices of Lapland, unsurpassed in Norway for grandeur and desolation, I was driven by necessity to certain conclusions about the best diet for marching 12 or 13 hours a day, which may possibly be of practical interest to some of your readers owing to the unusual conditions under which my observations were made.

---

[1] Brit. Med. Jour., Feb. 28th, 1885.
[2] Hygiea, August, 1885.
[3] Brit. Med. Jour., Oct. 31st, 1885.

In Lappland one often sees no houses and no people for 12 hours or more at a time in traversing its monstrous cliffs and ravines which are exactly similar to the Herzegovina. Hence I was sometimes driven by necessity to march distances (for example, for 15 hours incessantly over volcanic rocks) which nothing on earth but sheer geographical necessity would have induced me to march. My conclusions are so simple that they can be stated in a few words. They relate to—

1. The incalculable restorative effects of liquid at a high temperature after anything over six hours of continuous marching. So great is the effect of boiling water on the efficiency of a man undergoing a forced march of ten to 14 hours that I feel certain, from my experiments, that it is more important to provide the soldier on a long march with a small apparatus for heating liquid than with food. The extent to which boiling liquid can take the place of food was never fully realised by me until I marched 14 hours on three sandwiches and plenty of hot water. Nothing but the possession of a spirit lamp saved me from serious illness, from fatigue and exposure during some of these marches, and I have no doubt many travellers could corroborate this.

2. The imperious craving for sugar in some form which these long marches produce and the enormous importance of an adequate supply of sugar in the diet of soldiers performing much bodily exertion. I have no hesitation in saying, firstly, that the importance of sugar (owing to the consumption of the sugar in the blood by bodily exercise) is most inadequately recognised in English military diet; and, secondly, that the private soldier is too often driven to satisfy the natural craving for sugar after violent exercise by drinking alcohol. Hence he believes that alcohol is natural and does him good. I further believe that it could be shown by experiment that men who were allowed a glass of milk with four lumps of sugar in it could undergo greater fatigue on that drink than on almost any other.

3. The vast superiority of hot oatmeal porridge at breakfast and supper over almost every other article of food in maintaining efficiency and health during prolonged marches. Abnormal exertions, such as 15 hours of climbing, throw the real value of foods into a far stronger relief than usual. The presence or the lack of that food during an ordeal of this sort at breakfast or supper has so vast an effect on one's condition that I can scarcely imagine any general who is aware of its value overlooking it as an almost complete and most portable food for a forced march of 14 hours. It is far richer in mineral salts than meat.

4. The utility of dried figs. Given a meal of hot porridge for breakfast and supper a soldier could march without discomfort or harm for a whole day or night on a handful of figs and some hot liquid, owing to the fact that they are so full of sugar and mineral salts, which are what the marching man chiefly needs. Anyone who overlooks the value of the fig in catering for the food of an army corps on campaign commits a great blunder. In a rapid campaign the great requisite in food is the *irreducible minimum* for health and strength, which is not the case in time of peace. I believe that a scientific medical investigation of the effects of the ordinary soldiers' diet and of such a diet as the one indicated above in the case of men undergoing long tests of endurance would be exceedingly valuable from a military point of view as well as of great scientific interest, and I also believe that a medical investigation of the dietetic tastes of persons who are known to perform so much bodily exertion as the leading lawn-tennis players could scarcely fail to disclose new and valuable facts on the relation of athletics to food values. The Victoria Food Museum in Bethnal Green-road lately contained a sample of convict diet. The complete absence of fat at breakfast and supper, and the complete absence of treacle or jam except in the "groats," is certainly a blunder if it be desired to obtain the greatest amount of bodily labour from the convict.

I am, Sirs, yours truly,
F. W. PAYN.

Stromsnes, Ulfsfjord, Tromso, Norway, Sept. 2nd, 1907.

## THE COOL SUMMER AND DIARRHŒAL DISEASES.

*To the Editors of* THE LANCET.

SIRS,—The interesting annotation on the cool summer of 1907 in THE LANCET of Sept. 14th, p. 783, leads me to draw your attention to some remarkable figures in the Registrar-General's weekly return of births and deaths in London, &c., for the thirty-sixth week of the years 1906 and 1907. I refer especially to Table 3, from which it appears that in the 13 weeks ended Saturday, Sept. 8th, 1906, diarrhœal diseases were responsible for 2588 deaths in London. On the other hand, in the 13 weeks ended Saturday, Sept. 7th, 1907, this group of diseases caused only 334 deaths. The salient meteorological facts for the two corresponding periods are as follows:—

| | 1906. | 1907. |
|---|---|---|
| Mean temperature of the air | 63·4° | 58·7° |
| Mean relative humidity per cent. | 70·0 | 74·0 |
| Rainfall in inches | 5·43 | 5·46 |
| Registered sunshine in hours | 732·1 | 521·6 |

It will be observed that the rainfall was about the same in the two years. The number of rain days was, however, 42 in 1907 compared with only 22 in 1906. Can we doubt that the lower temperature of the air in 1907, amounting to nearly 5 degrees Fahrenheit (4·7°), the showery weather, and the comparative infrequency of blazing sunshine were the chief meteorological causes of the lower mortality from diarrhœal diseases during the past summer?

It is well known that the victims of "summer diarrhœa" are for the most part young children. We are not surprised to find accordingly that in the hot, dry, sunny season of 1906 no less than 2463 out of the total deaths from diarrhœal diseases in London (2588 in number) were of children under five years of age. In the cool, showery, cloudy, and breezy summer of 1907 281 out of 334 deaths referred to diarrhœal diseases were of children under five years. The percentages represented by these numbers are 95·2 and 84·1 respectively. From these figures it will be seen that not only were the total deaths from diarrhœal diseases in 1907 but little more than one-tenth of those which occurred in 1906, but that young children escaped comparatively in the present year from the ravages of what was a very pestilence in 1906.

The same story may be told of all the 76 "Great Towns" of England and Wales, the vital statistics of which are discussed by the Registrar-General in his "Weekly Returns." For example, the diarrhœal deaths in those towns were 2342 in the thirty-sixth week of 1906. They were not one-tenth as numerous in the thirty-sixth week of 1907, being only 229. In his annual report on the health of the borough of Southend-on-Sea, that very able and dauntless medical officer of health, Dr. J. T. C. Nash, assigns good reasons for believing that it is the effect which the prevailing weather has on the propagation and movements of flies which controls the prevalence and fatality of diarrhœal diseases among young children in summer.

I am, Sirs, yours faithfully,
JOHN W. MOORE, M.D. Dub., D.Sc. Oxon., D.P.H.

Dublin, Sept. 16th, 1907.

## LANCASHIRE SANITATION.

*To the Editors of* THE LANCET.

SIRS,—I quite agree with your leading article headed "Lancashire Sanitation," but I would point out that the Public Health Act of 1875 is responsible for the privy-middens. An attempt was made here a few years ago to revise our by-laws and one suggested alteration provided that all new houses about to be erected should have water-closets fitted instead of privies. A draft was sent to the Local Government Board and we were informed we could not insist on the general adoption of water-closets without an Act of Parliament. Section 35 of the Public Health (1875) Act reads, It shall not be lawful newly to erect, &c., without a sufficient water-closet, earth-closet, or privy. Surely you do not contend that all the local authorities mentioned in your article ought to go to Parliament for powers.

I am, Sirs, yours faithfully,
J. CHRONNELL.

Hindley, Sept. 16th, 1907.

## SUPERNUMERARY DIGITS AND A HISTORY OF HEREDITY.

*To the Editors of* THE LANCET.

SIRS,—Monstrosities taking the form of supernumerary digits are not of particularly rare occurrence, but I venture to think that the history of heredity in the following case is worthy of record. An infant of six weeks was brought to me for the removal of a supernumerary digit of the right hand. This finger was perfect as to the nail and terminal phalanx but the rest was represented by a fleshy pedicle of about three-quarters of an inch in length. With the exception that the pedicle was attached to the ulnar side of the hand about the centre of the metacarpal bone the extra digit had exactly the same appearance as that of the case illustrated in THE LANCET of July 20th last, reported by Dr. W. H. W. Attlee.

The history I obtained was as follows. The child's great-great-grandmother had an extra little finger on each hand. She had one child, the great grandmother, who was born with precisely the same malformation. She also had one child, the grandfather, and he too was born with the same number of extra digits. His married life proved more prolific, for he had 12 children; of these the first, second, and third were normal, but the malformation was reproduced in the fourth child, a boy, who had a supernumerary little finger on each hand. The fifth and sixth children were again normal, but the seventh, a girl, had two extra little fingers. The eighth, ninth, tenth, and eleventh were normal, but to make up for this long rest heredity had revenge by presenting the twelfth child not only with an extra little finger on each hand but a pedunculated, supernumerary little toe on the right foot. The fourth child above mentioned is married and his eldest little girl was born with the extra digits on each hand. The eleventh child, who herself was normal at birth, is the mother of the infant brought to me.

I am, Sirs, yours faithfully,
North Kensington, Sept. 12th, 1907. S. H. GREENE

## TO MEDICAL FREEMASONS.

*To the Editors of* THE LANCET.

SIRS,—May I once again, through the medium of your widely read columns, appeal to medical men, and medical Freemasons in particular, for votes for the Masonic schools? At the forthcoming elections in October there is only one medical candidate for the *Royal Masonic Institution for Girls: Elizabeth Edith Smart*, daughter of the late Mr. H. P. Smart, M.R.C.S. Eng., of Edgbaston, Birmingham.

As there is no medical candidate for the Royal Masonic Institution for Boys votes for that institution can be exchanged and are equally valuable. Votes for either institution will be gratefully received and acknowledged by me.

I am, Sirs, yours faithfully,
HAROLD S. SINGTON,
Secretary, St. Luke's Medical Lodge of Instruction.
Hospital for Sick Children, Great Ormond-street, W.C., Sept. 15th, 1907.

## "MANSLAUGHTER IN AN ASYLUM."

*To the Editors of* THE LANCET.

SIRS,—I wish to draw your attention to a serious misstatement in your issue of Sept. 14th under the heading of "Medical News." No such incident as that reported has occurred at the "Wonford Asylum, near Exeter."

I am, Sirs, yours faithfully,
P. MAURY DEAS,
Wonford House, Exeter, Sept. 18th, 1907. Medical Superintendent.

*** We deeply regret the error. The information was published exactly as we received it from an experienced local correspondent who has clearly been misled.—ED. L.

## PICROTOXIN AS A PREVENTIVE OF POST-CHLOROFORM SICKNESS.

*To the Editors of* THE LANCET.

SIRS,—I trust Dr. Peter Paterson will forgive me for pointing out that picrotoxin is not an alkaloid. In this connexion, seeing that the name of this substance ends with "in," and not "ine," I would heartily endorse Dr. Gordon Sharp's letter in your issue of August 10th, p. 410.

Yours respectfully,
London, W., Sept. 16th, 1907. W. H. MARTINDALE.

HOSPITALS AND TAXATION.—The committee of the South Devon and East Cornwall Hospital, Plymouth, has received a summons, which will be heard at the Guildhall, Plymouth, at 11 o'clock on Monday morning next, Sept. 23rd, for the payment of taxes on men-servants in uniform.

## THE INTERNATIONAL CONGRESS OF PSYCHIATRY.

(FROM OUR OWN CORRESPONDENT.)

THE International Congress for Psychiatry, Neurology, Psychology, and the Nursing of the Insane (to give the Congress its full name) held its annual meeting at Amsterdam from Sept. 2nd to 7th. Everything was done to start the proceedings with becoming state and solemnity. The opening ceremony was honoured by the presence of Queen Wilhelmina and her husband Prince Henry, with a staff of officers. There were delegates from the Governments of the Argentine Republic, Belgium, Brazil, Bulgaria, Chili, Denmark, France, Germany, Greece, Japan, Luxembourg, Roumania, Russia, Spain, Sweden, and the United States. There were also delegates sent by 42 scientific societies in different parts of the world. Magistrates, officers, and other dignitaries of Amsterdam increased the *éclat* of the meeting which was held in the Municipal Concert Hall, a large and beautiful building with a lofty roof, lighted from crescent windows high on the side of the walls, and having a gallery running along two-thirds of its length. A choir, composed of about 200 ladies, occupied the tiers below the great organ. The Queen sat opposite the rostrum, in a pulpit near the organ.

### *The Pace of Life.*

The opening address, in French, was read by M. VAN RAALTE, Minister of Justice; he was followed by Professor JELGERSMA (Leyden) who discoursed upon the increasing pace of modern life as a predisposing cause of insanity. This was not a time, he said, in which it was permissible to rest. The life of to-day might be stated in two words—*répos ailleurs*. There was an overstrain in the intellectual and moral faculties which acted on the nervous system. The "feministic" movement was, he considered, an additional cause of mental derangement. Although he was ready to raise the condition of women he held that the natural difference between the sexes should not be forgotten. Women occupying the positions heretofore assigned to men were often, from their susceptibility of disposition, beset with fears and anxieties. When women entered the medical profession the condition of their patients and the fear that they should fail or had failed to understand their cases haunted them night and day. Professor Jelgersma considered that such increased activity and stress of feelings and actions were the true causes of the increase of insanity. At the end of his discourse Professor Jelgersma put the question whether the calm life of former times would ever return. The answer given was not reassuring. To our complicated life an end will never come. We must reconcile ourselves to perpetual change and perpetual progression.

It served as a kind of consolation at a depressing juncture that a chorus of rich and well-trained voices now sang the hymn of Verhulst, "God is eternal, eternal His might." This was followed by a choral singing of Handel's "Song of Triumph" from *Joshua* and the "Hallelujah Chorus" from the *Messiah*. Though the singing was very fine, there was little applause and the assembly quietly went away.

### *The Work of the Sections: Kurzschluss.*

On Tuesday, Sept. 3rd, the work of the sections began in the University buildings. The subjects were divided into three groups: (1) psychiatry; (2) psychology; and (3) the care and nursing of the insane. The members flitted about from one room to another exchanging greetings and cards. The programmes of the day were not closely followed, it being difficult to estimate the length of the papers or of the remarks thereupon. Criticism was not frequent and the visitor to congresses is forced to conclude that in scientific, at any rate, in medical, societies debating is becoming a lost art. This is mainly owing to the large proportion of professors and teachers of medicine who attend such meetings; instead of speaking to the point they slide away into bits of old lectures. This is what the Germans call *kurzschluss*, taking the easiest way. Considering that there were 750 members enrolled the rooms were by no means crowded and towards the end of the sittings, which were held twice a day, the attendance became scanty.

Copies of many of the papers read or to be read had been already printed and were laid out for the members in a room reserved for the purpose. This was a great assistance for those who desired to know what was going on in the three separate rooms where the sections held their meetings. The official languages were English, French, and German. The Dutch physicians generally preferred to speak French but most Amsterdamers seem to know German better. The Dutch are good linguists and often speak English fluently.

## SECTION I.—PSYCHIATRY.

### *The Function of the Cerebellum.*

In Section I. Dr. van Rijnberk (Rome) defended Luciani's view of the functions of the cerebellum against the criticisms of Levandowsky.

Dr. Muskens (Amsterdam), who had studied the structure and function of the cerebellum for ten years, gave a lantern demonstration of the degenerations which he had observed after the removal of the flocculus in the rabbit and cat. No degeneration was found in the corpus restiforme and spinal cord, which was in accord with the views of Ferrier, Turner, and R Russell. There was coarse degeneration of the middle third of the superior crus cerebelli, and a number of internucleal fibres going towards the other side of the cerebellum were also degenerated. Dr. Muskens was not sure that an exact knowledge of the function of the cerebellum had been reached. What was observed after loss or removal of this great organ was an impairment of the regulation of voluntary movements which affected the hemisphere of the cerebrum on the opposite side.

Dr. Ramon y Cajal (Madrid) gave a demonstration of the Traumatic Degeneration of the Axis Cylinders of the Brain and Cerebellum.

Professor Jelgersma gave a lantern demonstration of a large series of Sections of the Brain and Cerebellum.

### *The Evolution of the Central Nervous System.*

Dr. W. H. Gaskell (Cambridge) contributed a lecture on the Evolution of the Vertebrate Central Nervous System, in which he advanced the proposition that as brain power was the leading factor in all upward progress the vertebrate must have arisen from that invertebrate group which possessed the highest central nervous system evolved up to that time—viz., the arthropod group. This, he affirmed, was borne out by geological evidence.

Dr. F. W. Mott (London) delivered a lucid address, accompanied by lantern slides, on the Development of the Sensory Areas, beginning from the lemur and ascending to the human brain. Very interesting was his statement that he could at once distinguish between microscopic sections of the visual, olfactory, auditory, and general sensory areas. As exhibited by his lantern views the structure of these areas had little dissimilarity and afforded no indication of their varying specific capacities.

Dr. Mott, in a paper on

### *Chronic Alcoholic Psychoses,*

also gave the result of his extensive studies in the wards and post-mortem rooms of the London hospitals and asylums. He pointed out the great variations in the estimates assigned in the statistical tables of asylums for alcohol as a cause of insanity, ranging from 20 to 8 per cent. In some cases alcohol acted directly upon the brain, as in delirium tremens. In other cases that drug had to act upon a brain already predisposed to insanity, when it might be a coefficient cause; but the incidence of drunkenness did not keep pace with the incidence of insanity. Dr. Mott made much use of the observation that cirrhosis of the liver, admitted to be due to over-indulgence in alcoholic drinks, was common with the sane patients in the London hospitals, while it was very rare in the asylums. But if insanity be so often caused by over-indulgence in drinking, cirrhosis should also be frequent with the insane. Abuse of alcohol had a direct effect in producing gastritis and liver disease; but though it rapidly acted upon the brain, its bad effects were not so permanent. Thus, though drunkenness was sometimes a coefficient cause of insanity, it seldom stood alone as a single efficient cause. It often happened, as also pointed out by Dr. P. Schröder (who followed Dr. Mott), that the sinking into drunken habits was but a symptom of the depressed and degenerate state which formed the beginning of insanity induced by other causes.—Dr. D. Orr (Prestwich) and Dr. R. G. Rows (Lancaster) gave a lantern demonstration of lesions of spinal and cranial nerves experimentally produced by toxins.

### *Hysteria.*

There were lively discussions between the French and German physicians on the nature of Hysteria, a subject well fitted for debate and likely to continue so. Dr. Janet (Paris), who is an eloquent speaker, considered hysteria to be a mental malady, which came into the domain of psychiatry, and therefore it should be studied after the methods of this department of medicine, and compared with other known mental diseases. He mentioned the scene where Lady Macbeth seemed to be washing her hands to rub out the spot of Duncan's blood. Such passages of somnambulism, Dr. Janet said, were not infrequent with hysterical women. Out of 660 patients observed Dr. Janet had noted at least 120 cases in which the patients at certain times repeated a scene at which they had already assisted, or put into action a fixed idea. In this state there were often hallucinations of the senses, very intense, and sometimes crimes had been committed. As long as this state lasted the subject believed nothing, accepted nothing which was in opposition to his dominant idea, as was observed in systematised delirium; indeed, he saw nothing and heard nothing out of the system of images connected with the main idea. This system of images and of movements, escaped from the control and even from the knowledge of the other systems, made up his personality. He observed that suggestion should be regarded as a consequence of this disassociation of ideas and the contraction of the scope of consciousness in the mind of the hysterical patient. Hysteria, he said, belonged to the large group of depressive psychoses, together with those suffering from melancholia and depressed maniacal delirium or psychasthenia, to which latter form it approached nearest. Thus the French only allowed a mental basis to hysteria. Some authors laid especial stress upon the mood of the hysterical patient; others upon the mental representations. Some regarded auto-suggestion as the principal factor in hysteria. Charcot remarked that hysteria might simulate anything. Bernheim observed that there were no hysterical symptoms, only hysterical attacks. Hysteria was not a morbid entity. Some German physicians, as Breuer and Freud, found the origin of hysteria in affections of a sexual nature before puberty, colouring the memory and inspiring strange intellectual conceptions.

Professor Jelgersma made some pregnant remarks upon the Stigmata of Hysteria (such as paralyses, contractures, and anæsthesias). These were, he held, not the result of purely mental representations but of isolated mental images the outcome of a defective hereditary disposition of the central nervous system.

Professor Orszanski (Charkow) in a well-written communication on the Genesis and Nature of Hysteria, argued that this disease could not be reduced to mental phenomena. Neither suggestion nor auto-suggestion would explain all its multiform bodily symptoms. In hysteria not only the higher psychical faculties but the whole nervous system, the entire organism, was affected. Besides the hysterical attacks there were varieties of pathological reflexes, tremors, coughing, vomiting, and locomotor and trophic disorders. The starting point was most frequently to be found in the female genital organs. Slight affections of the uterus in some subjects were followed by hysterical symptoms, while they might not occur with much graver diseases such as tumours. In severe lesions the reflexes might be abolished, while in the lesser ones they were stimulated. Professor Orszanski called especial attention to a characteristic feature in the diagnosis of hysteria. The patient might go through severe and long-continued attacks without exhibiting the least trace of fatigue, whereas after epileptic attacks there was a period of profound exhaustion. He regarded the hysterical fit as a relief from the accumulation of energy naturally followed by a feeling of freedom and lightness which in some cases was noticeable.

Dr. Terrien (Nantes) observed that suggestion or auto-suggestion might be the exciting cause of hysteria, but it did not create it; one was born hysterical as one was born with the gouty or syphilitic diathesis. He had met with a neurotic heredity in all his patients. This disposition to hysteria might remain latent and be kept in check by a wise physical and moral hygiene, or it might be aroused by overstrain, intoxication, or moral shocks. The accidents of hysteria might be cured but the proclivity remained. Dr. Terrien said that he could cite 20 or 30 instances of patients whom he had cured of their paralysis or hysterical contractures and who were in the enjoyment of good health, but with whom nevertheless he could produce the same old affections by suggestion. The reason of this was that the hysteria remained latent in their constitutions. On the other hand, he had tried to produce paralysis and contractures in persons free from hysteria without ever being able to succeed.

Dr. PUTNAM (Buffalo) in an admirable paper, described five cases of Landry's Paralysis, one of Acute Infectious Multiple Neuritis, and another of Myasthenia Gravis. A striking feature in these cases was the suddenness of the onset of the paralysis.

Dr. ERNEST JONES (London) read a paper on the Clinical Significance of Allochiria, which is published in our present issue, *vide* p. 830.

*(To be continued.)*

# THE SEVENTH CONGRESS OF SCANDINAVIAN SURGEONS.

(FROM OUR OWN CORRESPONDENT.)

*(Concluded from p. 548.)*

Dr. N. RH. BLEGVAD (Copenhagen) presented a report on a series of Ten Cases of Malignant New Growths treated by injections of trypsin in Professor Th. Rovsing's clinic. The result had not been encouraging as there was only one case in which the patient might possibly have derived some benefit from the treatment, the discharge becoming less profuse and foul. In one case at least increasing development of the growth set in after the injections. In another case the patient fell into a comatose state, which gradually disappeared on the discontinuance of the injections and recurred when the injections were renewed.

Dr. I. WIDERÖE (Christiania) read a paper on Hæmolysis as a Help to the Diagnosis of Cancer. Using Kelling's method he had tested the hæmolysis on red blood corpuscles of the hen caused by the serum of 50 patients. 25 of the cases were suffering from malignant new growths. Ten of these cases showed a hæmolysis below 30 per cent. and were reckoned as negative; 15 cases were from 30 to 85 per cent. (positive). Of the ten negative cases six were very cachectic. One patient presented decreasing hæmolysis as the cachexia increased. In another case the hæmolysis became less pronounced after complete removal of the tumour. Of the 25 patients not suffering from malignant growths only three showed a hæmolysis above 30 per cent. An investigation as to the nature of the cancer hæmolysin gave the result that it does not seem to be built up according to the "Seitenkette" (side-chain) theory of Ehrlich but is more probably related to the hæmolysin found by Bord and Kullmann in the blood of cancerous patients. The speaker considered that his observations confirmed the diagnostic value of the method.

On the third day the chief interest centred in the discussion on the Indications, Performance, and Results of Prostatectomy. Dr. G. GUNDERSEN, a Norwegian colleague, now in La Crosse, U.S.A., who opened the discussion, turned out to be a fervent votary of the perineal (Young's) operation, at the same time recognising the usefulness of Freyer's method. In the perineal way he had himself removed the prostate in 40 patients with good results. No patient died immediately after, or within two months from, the operation, though 14 of the cases were in an extremely bad state. All the patients became able to pass urine spontaneously *per viam naturalem* except one with a paralysed bladder. For one of the most feared complications of the operation—viz., lesion of the rectum—Dr. Gundersen had devised a simple and, as three cases of his own proved, very efficacious treatment. He introduces one blade of a scissors into the rectum and the other into the perineal wound and divides the perineum by one snip, thus creating a widely open cloaca which heals up gradually as in the operation for fistula recti. Five or six weeks later the patient is again able to pass his urine in the natural way. Of post-operative complications he had observed incontinence of urine in three of his 40 cases and in one patient an impassable (cancerous?) stricture of the urethra two years after the operation. As to the important question about the influence of the operation on sexual potency, all surgeons using Young's method were of the opinion that the overwhelming majority of the patients kept what they might possess of potency before the operation. Dr. Gundersen thought that the indications for prostatectomy ought to be considered on a broader basis than had hitherto been usual and he felt sure that this treatment was superior to all former methods.

Dr. JERVELL (Christiania) thought that any case of prostatic enlargement causing symptoms should be kept under observation by the surgeon. If the quantity of residual urine increased or the tumour continued to grow an operation should be carried out, preferentially, if the patient could stand it, a prostatectomy. He had mostly used Freyer's method and though his own results were not brilliant he should go on using it.

Professor THORKILD ROVSING (Copenhagen) first wished to protest against a statement which had been made that vasectomy had been abandoned as a treatment of enlarged prostate because it had proved inefficacious. In reality the operation had, like castration, been abandoned because it was "mutilating" and created impotence. He alone had thoroughly tried vasectomy and laid down definite indications for its performance—viz., the uniform soft enlargement of the prostate, while it did not help in the hard hypertrophies. Acting on these indications he had attained very satisfactory results. Amongst 82 vasectomies he had 49 cured, 25 improved, and no deaths. As to the mortality of prostatectomy Gundersen's and Young's results must be admired. But most other operators had rather a high mortality, so that it must generally be considered as a somewhat dangerous operation. If really, however, a complete cure could be promised to all patients who survived the operation, he could understand the enthusiasm of the prostatectomists, even if he could not share it. But such a promise could not, and ought not, to be given. Not seldom retention of the urine remained as before the operation; perineal fistulæ and strictures of the urethra were not infrequent. It was impossible to foresee how the seemingly cured patients would fare later. It was scarcely possible that they should not in many cases develop stricture of the urethra, considering the often inevitable great lesions of that canal. He had himself performed 11 partial prostatectomies, in two of which the patients died, while four were cured and five were not improved. Of his nine total prostatectomies six were suprapubic (with one death) and three were perineal (with two deaths). In one of the suprapubic cases a very dangerous hæmorrhage occurred on the twelfth day after the operation, the patient being only saved by a complete plugging of the bladder. One patient returned a few months after the operation with complete retention produced by stricture of the urethra. The most serious objection to the operation was, however, the fact that in a great number of cases the retention remained unchanged, especially when the enlargement of the gland and the retention were comparatively little pronounced before the operation. It interested him to notice that Gundersen and Young's school had given up their former opinion that partial prostatectomy was to be rejected. Dr. Gundersen now emphasised that only the diseased parts of the prostate should be removed. The reason for this changing of opinion, in which as yet Freyer did not seem to have joined, was that at length the prostatectomists had begun to become aware of the important physiological function of the prostate to which he (Professor Rovsing) had drawn attention already in 1902 and later in Brussels in 1905. It was highly to be regretted that the promoters of prostatectomy had removed hundreds of prostates, not only from old men but from men 40 and 50 years of age, without heeding the importance of the gland for the sexual functions, not knowing that the removal of the prostate produced not only impotence just as surely as a castration did but far oftener than a castration serious psychical derangements followed by suicide. This being so, was there any reason to lay down as a routine treatment of the enlarged prostate this dangerous operation, which, though removing an organ of the highest importance, did not always satisfy the only existing indication—viz., to do away with the retention? Was it not much wiser to have recourse to an operation which did always help the patient and was practically devoid of danger? He had excellent results in suprapubic cystostomy, performed without narcosis, 115 cases with two deaths, two patients with pulmonary affections who insisted on being placed under an anæsthetic notwithstanding advice to the contrary. Once the immediate danger was passed and the retention was done away with, the performance of a prostatectomy might be considered if the patient did not feel content with his state after the cystostomy. Professor Rovsing only performed primary suprapubic prostatectomy in those cases in which a beak-like elongation of the prostate into the bladder prevented the introduction of a catheter above the symphysis, or in which a prostatic hæmorrhage was a vital indication. At any rate, it was the duty of the surgeon to explain to the patient that a prostatectomy was connected with great risk, would surely cause impotence and possibly psychical derangements, and that he would perhaps be obliged to renew or to continue his "catheter life," notwithstanding the operation.

Later Professor TSCHERNING (Copenhagen), Dr. BORCH GREVINK (Christiania), and Dr. LENDORF (Copenhagen) partook in the discussion.

Professor WESTERMARK (Stockholm) reported shortly on some observations made by him in cases of delivery under spinal anæsthesia, going to show that the corpus uteri had no nervous supply, the contractions depending on properties which appertained to the muscular fibres alone.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *The University.*

THE holidays are now almost at an end and the winter session will commence on Tuesday, Oct. 1st. In the medical faculty a conversazione will be held on the evening of that day when the various departments and laboratories will be open for inspection by the guests of the dean and medical faculty, and on the following day the ordinary routine work of the session will begin. The work of the session, however, will be preceded as usual by the September examinations in the second and third parts of the professional course in medicine—that is, in biology, anatomy, physiology, and in materia medica and pathology. This year also at the same time there will be an examination in anthropology and physiology for science students; thus in reality the work of the school will recommence before the winter session actually opens. There is every prospect of a good entry in all the departments of the University and it is hoped that the records established last year will be surpassed, for the influence of the various sections is rapidly extending and students from widely separated parts, both of the old and new world, are applying for admission. The accommodation for the students of engineering, metallurgy, and mining in the new buildings at Bournbrook is now in full working order, and the departments are equipped not only with all necessary apparatus and specimens but also with sectional libraries, which greatly facilitate study and reference. The additional blocks at Bournbrook intended for chemistry and physics are growing rapidly, but it is scarcely likely that they will be ready for occupation during the next two years, yet such a period in the history of an institution is comparatively short and the authorities will soon have to consider how the first year of the medical course is to be remodelled, so that the medical students shall not be placed at a disadvantage when chemistry and physics leave Edmund-street for their new homes at Bournbrook.

### *Measles in the Midlands.*

During the present year many parts of the Midlands have suffered from measles and in all the places attacked the disease has been severe and associated with complications from which many deaths have resulted. During the first six months of the year Birmingham was one of the places attacked, but apparently, at last, the epidemic in the city is over and the number of cases has fallen to the usual level. Dudley has not escaped the epidemic. During the ten weeks ending August 24th last it was the cause of 25 deaths in that town and though the disease seems to be subsiding it is still prevalent in several wards. In Tunstall the attack commenced in January in the south of the town and extended along its western side towards the north. Apparently it has now ended, in its epidemic form, after a secondary outbreak in the streets of the western side. In the Sedgley and Oldbury districts it is still present in the epidemic form and in the latter district it has caused 15 deaths during the past month. There can be little doubt, as the medical officer of Tunstall has pointed out, that the excessive mortality of the attack has been largely due to the severity of the disease and the frequency of lung complications, associated with the fact that the epidemic was worst in the most densely populated areas where faultily constructed houses and want of intelligent nursing are so commonly met with.

### *New Isolation Hospital for Smethwick and Oldbury.*

At the opening of the new isolation hospital which has been erected by the Smethwick town council and the Oldbury district council Mr. J. W. Wilson, M.P., congratulated the authorities on the good sense which they had shown in adopting a joint scheme whereby money had been saved both by Smethwick and by Oldbury. He stated that much of the ratepayers' money was often wasted by local authorities who would not enter into joint schemes with their neighbours. There is much truth in this statement and certainly Smethwick and Oldbury, though they have only carried out part of the original scheme, have succeeded in erecting excellent accommodation for isolation purposes, conveniently situated for both, at what may be looked upon as a comparatively small cost of £19 524, of which Smethwick will pay £13,436 and Oldbury £6088. In its present condition the hospital includes a pavilion of 16 beds, an observation, a discharging, and an administrative block. In the meantime the hospital will be used for the isolation of scarlet and typhoid fever cases, and ultimately when the scheme is completed 68 beds will be provided.

### *Past and Present Health of Birmingham.*

Alderman Sir William Cook gave some very interesting information the other day concerning the past and present health of the city when speaking in association with a lecture by Dr. E. A. Lyster on the Health of Children. He pointed out that 30 years ago the death-rate was 25 per 1000, whilst in the last three years it has been reduced to 17 per 1000, a result due most probably to the adoption of improved sanitation and to the diminution of overcrowding. We can scarcely congratulate ourselves as yet that it is due to the spread of knowledge conducive to health and application of that knowledge to any great extent amongst the poorer classes, for, as Sir William Cook stated, during the period in which the total death-rate has been reduced one-third the infantile death-rate has only fallen about one-twentieth—that is, from 176 to 167 per 1000. This year, however, we may eventually have a better record in this respect, for, thanks to the cold wet summer the deaths from summer diarrhœa have been comparatively few in number, and during ten of the latter weeks only 56 deaths have occurred from this disease as contrasted with 479 in the corresponding weeks of 1906. In spite of the severe epidemic of measles in the first part of the year the total death-rate of 1907 promises to compare well with that of the immediately preceding years, though it can scarcely be hoped that it will be much reduced beyond the low level at which it now stands until some means are found of effectually combating the infantile death-rate and the loss caused by epidemic diseases. So far as measles is concerned Sir William Cook stated that a scheme is being worked out between the health department and the education department by means of which it is hoped that the spread of measles amongst the scholars in elementary schools will be reduced. Scarlet fever, however, seems to defy the efforts of the health department; it is still far too prevalent in the city, and until some new means of checking it are discovered the five-yearly waves intend apparently to run their usual course, and in that case, as Sir William Cook pointed out, we have not yet reached the summit of the present wave and may expect that the number of cases will continue to rise until next year. Whilst the cold wet summer has had a favourable effect upon summer diarrhœa, the inclement weather of the year seems to have produced an opposite result in the case of consumption, for in a corresponding period the number of deaths has risen from 463 to 491, in spite of the precautions and efforts of our active medical officer and his assistants.

Sept. 17th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *The Health of Liverpool: Corporation Hospitals.*

THE port sanitary and hospitals committee of the city council made a complete tour of the corporation hospitals on Sept. 5th, the visits to the six institutions occupying over ten hours. Invitations had been issued to the chairman of each standing committee and others specially interested to join in the inspection. The officials with the party included the medical officer of health (Dr. E. W. Hope) and Dr. A. A.

Mussen (assistant medical officer of health). A repast was served in the administrative block of the new Fazakerley Hospital, Mr. John Utting presiding and giving the loyal toasts and "The Lord Mayor." The Lord Mayor, responding to the toast of his health, remarked that during the ten months in which he had experienced the pleasure of being Lord Mayor of Liverpool he had abstained from joining in the debates of the city council, as he conceived it to be his duty, as a rule, to leave the council to do its own business without his interposition. He had, however, felt strongly inclined to take part in the discussion at the previous meeting of the council when a vote of £50 annually to Dr. William Hanna for services at the New Ferry Hospital was under discussion. He saw that the council in large part failed to grasp the question at issue and to realise the importance of the work intrusted to Dr. Hanna. As a shipowner he could imagine what might be the loss to Liverpool if a bad bill of health led ships from the port of Liverpool to be placed in quarantine at foreign ports. The maintenance of a clean bill of health for this port depended chiefly on the medical inspection of the incoming vessels, and of the 350,000 transmigrants who yearly passed through Liverpool. Hence the port sanitary work of the committee, as well as its city hospital work, was of a most important character and ought not be under-estimated by the city council. Mr. John Utting (the chairman of the committee), in acknowledging the toast of his health, thanked the Lord Mayor for placing the question of Dr. Hanna's salary in its true light, and emphasised both the commercial and sanitary aspects of the work of protecting the health of the port, which was not less important than the safeguarding of the health of the city as a whole. What would happen were Liverpool to become a prey to cholera, as Hamburg had been? If a single case of cholera or plague escaped detection the results would be disastrous. The commercial prosperity of Liverpool would receive a severe, and it might be a permanent, check, while the loss of life might be incalculable. It was with great pleasure that he found that the Lord Mayor had so clear a grasp of the value of Dr. Hanna's services. At times it seemed a pity that the committee had dual duties, some people looking upon it merely as a committee subsidiary to the health committee and others thinking that the committee confined its attentions to the infectious hospitals. He was glad that the city council eventually realised that the committee was in the right on the question of the special remuneration to Dr. Hanna and did not do him the injustice threatened by the council vote last month. Passing to the city hospitals, he reminded the committee that the city council at the beginning of the financial year reduced its careful estimate by £10,000. The council reduced the resources of the committee but it did not reduce the committee's responsibilities, which were actually increased by extended operations, though the average of sickness was less than usual. Curiously enough, but suggestive, the decrease of infectious disease was only in the forms for which hospital accommodation was provided and the time was not far distant when resources not expended in one direction would have to be diverted to the reduction of other infectious diseases. The medical examination of school children carried on for the past eight months to trace the causes of disease showed that out of 6000 children only 7 per cent. were affected with scarlet fever (isolated in hospitals), which was formerly the most prevalent disease, while measles and whooping-cough (not isolated in hospitals) accounted for from 60 to 70 per cent. of the cases. The moral was that many cases of measles and whooping-cough must go to the isolation hospitals. Some inconsiderate people thought that empty or partially empty hospitals denoted extravagance and failure. To have the hospitals empty was a consummation devoutly to be wished and was a sign of success.

### *Education Committee Appointment.*

The secondary education subcommittee of the education committee has appointed Dr. F. E. S. Jeans as lecturer on hygiene for the evening classes for students preparing for the certificate examination at the Oulton Secondary School and pupil teachers' centre in succession to Dr. Robert E. Kelly, surgical registrar to the Royal Infirmary, resigned.

### *The Order of the Hospital of St. John of Jerusalem.*

In recognition of the services rendered by Mr. Arthur J. Evans, M.R.C.S. Eng., L.R.C.P. Lond., of Liverpool, subsequently to the disastrous earthquake in Jamaica on Jan. 14th last, the Order of the Hospital of St. John of Jerusalem in England has been conferred on him by the Grand Priory of that Order.

Sept. 17th.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

### *Resignation of Professor C. J. Wright.*

BY the resignation of Professor Wright one of the oldest links of union between the original medical school of Leeds and the modern University is broken. It is given to few men to serve any institution for so long as Professor Wright has. Loyally and untiringly he has consistently done his work and has always had before him the high ideal of maintaining and increasing the reputation of the medical school. Professor Wright's resignation was accepted with great regret by the Council of the University and at a recent meeting of the Board of the Faculty of Medicine the following resolution was unanimously passed and transmitted to Professor Wright:—

> The board has heard with regret that Mr. Wright has resigned the professorship of midwifery after forty years of faithful work in the interests successively of the Leeds School of Medicine, the medical department of the Yorkshire College, and the School of Medicine of the University of Leeds. For two years Mr. Wright was assistant demonstrator in anatomy, then for fourteen years lecturer on physiology, and for twenty-four years he rendered service in the department of midwifery, first as lecturer and later as professor. Mr. Wright held office as secretary of the council of the Leeds School of Medicine from 1878 to 1880, when he became the president for the year. Since the foundation of the University he has been one of the representatives of the joint faculties on the Court of Governors. He has always been an assiduous and conscientious attendant at board and University meetings. The board desire to record their sense of obligation to Mr. Wright for his long and sincere service, of which they will always retain a lively recollection.

### *The Open Air Swimming Bath at Roundhay Park.*

The provision for Leeds of an open-air swimming pool, which was mentioned in this column on Feb. 16th of this year, has been happily accomplished and the bath is in every way a great success and has been very largely used in spite of the somewhat inclement nature of the summer. The dimensions of the bath are 150 feet in length by 60 in width, and the depth varies from 3 to 5 feet. The bottom and sides are cemented throughout and there is a continuous flow of water through the bath which is provided by the overflow from the Waterloo Lake and can be varied in amount as required. The bath is provided with about 40 dressing boxes, is well surrounded by trees, and is in every way a most satisfactory addition to the bathing facilities of the city. The work was in large measure carried out by men from the corporation Unemployed Registry Office and it is satisfactory to learn that the experiment of employing these men is regarded by the committee as encouraging.

Sept. 16th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *The Royal Infirmary and St. Mungo's College, Glasgow.*

A CONFERENCE between the managers of the Royal Infirmary and the governors of St. Mungo's College was held last week to consider the present position of the college. At the meeting reports were submitted from a joint committee representing St. Mungo's College and the Royal Infirmary in reference to the relations between the two bodies in the matter of medical teaching. After discussion it was found that no common basis of agreement could be arrived at and the meeting was adjourned *sine die.* St. Mungo's College was originally brought into existence by the managers of the Royal Infirmary chiefly to carry on the medical school of the infirmary and to be in a position to take advantage of the affiliation clauses of the 1889 Universities (Scotland) Act, as only an incorporated college could become affiliated to a university, and the infirmary managers could not as a board become incorporated as a college. The infirmary managers made over to the college their medical school buildings in the grounds of the Royal Infirmary, which had been erected a few years previously by public subscription. Two of the chairs at the college are partially endowed, one lectureship is fully endowed, and the college possesses some funds in addition. The necessity which impelled the managers of the infirmary to divest themselves of the school buildings and of any share in the management of the medical school was that in Scotland extra-mural teaching was declining owing to Scotchmen in growing numbers becoming determined, when they entered the medical profession, to enter it through the university and owing to the establishment of new colleges and universities in England where medicine was taught. Thus the managers of the infirmary came to the conclusion that only by their medical school becoming a college of the University of Glasgow under the provisions of the Universities Act could medical students be attracted to the Royal Infirmary. In appealing to the public for funds the governors of the college have always urged that the college existed primarily to advance the interests of the Royal Infirmary by securing clinical students for its wards as clerks and dressers and that such attendance of students was requisite to maintain the great traditions of the Royal Infirmary. The early appeals were generally made by the joint authority of the governors of the college and the infirmary board. In the Diamond Jubilee year a fund was opened for rebuilding a portion of the Royal Infirmary as a memorial of Queen Victoria. Subsequently it was decided that the whole infirmary should be rebuilt, and for this purpose appeals for a large fund were made to the public. The governors of St. Mungo's College resolved that in the circumstances they should hold their hands in the way of asking for money. But about three years ago, owing largely to the effect of Mr. Carnegie's gifts to the universities, the number of extra-mural medical students had so much further declined that the governors found themselves confronted by serious financial difficulties. It became apparent that only by the step of raising a sufficient fund to warrant the governors in approaching the Privy Council with a view to have the college declared a college within the meaning of the Universities Act as the first procedure towards university affiliation could these difficulties be met and the primary object of the college—namely, to afford to the Royal Infirmary a sufficient number of clinical students—be carried out. This was communicated to the managers of the infirmary who were asked to assist the college in making a representation to the public. Prolonged negotiations thereupon took place between the governors and managers of the two institutions which culminated in the joint meeting of last week. The final decision of the managers of the infirmary is that they will not bear any part in raising funds to bring about the affiliation of the college on its existing basis. It emerged in course of the discussion that the managers generally are of opinion that a complete school at the Royal Infirmary is unnecessary and that students from the university at Gilmorehill might be to some extent induced to attend the classes of the final year of the medical curriculum at the Royal Infirmary and thus provide a sufficient number of clinical students for the wards.

### *Dundee Royal Infirmary.*

A meeting of the governors of the Dundee Royal Infirmary was held recently. Mr. J. W. Fleming, who presided, reported that the gynæcologists and surgeons were now finding ample room for carrying out the donor's intentions, not only in respect of cancer but also of other surgical ailments, in the new buildings provided by Mr. J. K. Caird. He also expressed the hope that when the arrangements now in progress for the special investigation of cancer were complete the desire of the donor to throw light on the disease would be fulfilled. The municipal dispensary for consumption had now been at work for several months in the out-patient department and the results were likely to prove of great value. Difficulty had been found in dealing with patients in the wards who were in the advanced stages of consumption and he thought that the provision for those cases which were a real source of danger to the community should not fall on a charitable institution but that the cases should be dealt with by the authorities under the Notification of Infectious Diseases Act. The meeting approved of a scheme for the extension and better equipment of the laundry, for improving the internal arrangements between the main block and the cancer hospital, and for providing additional accommodation in the out-patient department to enable the medical officers to carry on their work with greater convenience. It was announced that the improvements would cost £1570.

### *Aberdeen District Lunacy Board.*

The monthly meeting of the Aberdeen District Lunacy Board was held last week. A motion to reconsider the duties and salaries of the medical superintendent, stewards, matron, grieve, and gardener was defeated by a large majority. A motion to pay the standard rate of wages in connexion with all jobs given out by the district board was also defeated. The cost of Kingseat Asylum to date is £132,121.

### *Enteric Fever at Peterhead.*

The medical officer of health of the burgh of Peterhead reports that the number of cases of enteric fever notified to him during the past week was eight. Nine cases have been removed to the hospital and 13 have been dismissed well, while one death has occurred. 46 cases still remain in hospital.

### *The Fishers' Dispensary at Aberdeen.*

The dispensary which is carried on at Point Law for the treatment of surgical cases among the fisher-people was closed last week. The number of dressings done during the season just ended was 1135 and the number of patients 345. Of this number 121 were fishermen and coopers and 224 were curing women and girls. The dispensary is open only during the herring-fishing season of each year.

Sept. 17th.

## IRELAND.

(FROM OUR OWN CORRESPONDENT.)

### *The Tuberculosis Exhibition.*

THE secretary of the National Association for the Prevention of Tuberculosis, Dublin, has written to the medical superintendent of the White Abbey Sanatorium for Consumptives, which was founded by the Belfast board of guardians, soliciting his aid in the formation of the proposed Tuberculosis Exhibition in Dublin. The matter came up for consideration at a meeting of the Belfast guardians on Sept. 11th, when it was decided to procure and to forward a number of photographs of the abbey for the exhibition.

### *The Local Government Board and the Belfast Health Authorities.*

The auditor of the Irish Local Government Board has reported to the finance committee of the Belfast corporation that he has disallowed the expenditure of £10 10*s.* incurred for the printing of posters issued by the Belfast public health committee in reference to physical degeneration. He says that the representative of the Belfast and Ulster Vintners' Association attended when he was going into the accounts and objected to such an expenditure. I append the editorial comments of one of the leading Irish papers, the *Northern Whig* of Sept. 17th, on the matter :—

> Does the Local Government Board suggest that the city council is not legitimately interested in the health of the city, and that it would be illegal in the case of a visitation of cholera, typhoid, or smallpox for the corporation to spend money in advising the people to look after their drains, water-supply, and backyards? It appears that it was the publicans who objected to the posters, from which we conclude that they dealt with the evils of intemperance. But we have always been told that the licensing interest was itself hostile to intemperance and anxious to check its ravages Yet it appears that the trade and the Local Government Board now join hands in their objection to temperance placards. Perhaps the Board will take the trouble to explain its action in this matter, so that we shall know in the future whether it is really forbidden for the corporation to spend money in promoting public health.

Sept. 17th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *The Appointment of a Communal Medical Officer Declared Illegal.*

A SINGULAR incident in connexion with medical practice has occurred in a commune in the department of Haute Garonne. As there was no medical man in this commune an attempt was made to induce one to settle there by offering him a fixed salary for several years. Several persons who would in the usual course have to contribute to the expense thereupon asked the Council of State to declare this offer illegal and a decision was given in their favour. The Council of State held that the law only permitted municipal councils to provide gratuitous medical aid for paupers. There might be exceptional circumstances in which it would be permissible to provide medical aid for persons who had no means of obtaining it, but this was not so in the commune under consideration, and the local authority (*conseil municipal*) had exceeded its powers in proposing to assign an annual salary to a medical man who would attend all the inhabitants, rich and poor indiscriminately, without taking fees from individual patients.

### *Responsibilities of Pharmaceutical Chemists and Parents.*

In December, 1906, a girl, 12 years of age, asked a pharmaceutical chemist for something which would destroy warts growing on her hands. He gave her some nitrate of mercury, telling her that she must apply it to the warts with the end of a match every two hours. After the first application her hands and arms were swollen and her hands were severely burned; three months subsequently cicatrices had formed and recovery was still incomplete. The girl's mother brought an action against the pharmaceutical chemist for 10,000 francs, on the ground that her daughter had suffered material injury on account of the scars; moreover, she had been practising on the piano with a view to becoming a teacher of music, but her injuries had prevented her from playing for several months. The court ordered the defendant to pay 50 francs fine and 500 francs damages, as although the application of the mercurial caustic had not affected the girl's health she had nevertheless sustained a definite injury because the cicatrices would probably not disappear entirely; the mother was also to blame for having failed to carry out the directions of the pharmaceutical chemist and for having intrusted her child to a servant, whereas if she had been more careful the accident might have been avoided.

### *Typhoid Fever in Algeria.*

There have recently been many cases of typhoid fever at Blidah, and in consequence the general in command of the 19th Army Corps has been inspecting the barracks of the 1st regiment of the Chasseurs d'Afrique. These have been evacuated and all necessary sanitary measures have been taken. 18 patients were moved into hospital and of these six have died.

### *A Hospital Ward for the Victims of Motor-cars.*

About a year ago a New York barrister was the victim of a motor-car accident just outside Lisieux. He was taken to the hospital of that town and died there some weeks later. In honour of his memory the family of the deceased have founded a new ward which is to be specially used for the victims of motor-car accidents and the foundation stone was recently laid in the presence of representatives of the family, while the Mayor of Lisieux made a speech thanking those who had so generously added to the resources of the hospital.

Sept. 17th.

## COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

### *The Danish General Medical Association.*

ON August 22nd and 23rd the twenty-ninth meeting of the Danish General Medical Association was held in Copenhagen, and at the same time the association celebrated the fiftieth anniversary of its origin. It was founded on Sept. 1st, 1857, by 80 country practitioners and its members have gone on steadily increasing until at the beginning of the meeting just finished they numbered 1300; in other words, they included nearly all the practitioners of Denmark. One of the great events of the meeting was that the Association of Junior Medical Men, the membership of which comprises all Danish medical men not yet in practice, became incorporated with the older association, so that now practically all the medical men of Denmark to the number of 1600 are united in one strong society. The activity of the Danish General Medical Association has, during its long existence, been very advantageous both to the public at large and to the profession itself. Here I will only mention one of the many difficult questions which the association has brought to a successful issue. At the first meeting in 1857 Dr. Krebs read a paper on the distress prevalent among the manufacturing population, for the alleviation of which he recommended the foundation of sick clubs. As a philanthropic institution the sick clubs were so strenuously supported by the practitioners, that an astonishing development has taken place, with the final result that perhaps one-half of the population of Denmark belongs to such clubs or friendly societies. In 1892 a law was passed concerning the recognition and support by the State of such sick clubs as comply with certain conditions. At the present time 379 clubs, with a membership of 500,000 persons, are recognised by the State, and the sum paid in support of them by the State runs into millions of crowns. Against this overwhelming coalition of clubs the practitioners were often unable to hold their own, but the Danish General Medical Association has finally succeeded in creating a *modus vivendi* to the satisfaction of both parties concerned, so that now the machinery works quite smoothly. It is to be hoped that, backed up as it is now by the whole of the profession, the Danish General Medical Association will be able to assist in working out a bright future for its members.

### *Treatment of Lupus.*

Among the scientific contributions to the meeting the report of the director of the Finsen Light Institute, Dr. Forchhammer, took a prominent place. Having chosen the different local treatments of lupus for his subject, he conceded that the x rays were certainly able to do a considerable amount of good, especially in the hypertrophic form of lupus, but recurrence took place only too easily. In some cases recovery might be brought about by freezing the affected area but necrosis was not seldom seen to set in, especially in the case of the tip or alæ of the nose being treated in this way, so that the patient's last state was worse than his first. The best form of local treatment was the Finsen light treatment. In cases of more than five years' standing it was often impossible to get a successful result, but even in these cases the patients were as a rule considerably improved and the spreading of the destructive process was prevented. In more recent cases the results were extremely satisfactory and such cases might in the future be expected to form the majority of the clinical material of the institute. Out of 500 recent cases whose duration was from one to four years 53 per cent. had recovered, and this result had been verified by observation extending over two years or more. An additional proportion of 22 per cent. had also recovered, but the time of observation was too short to decide whether the good effect would be permanent; 12 per cent. were still under treatment on account of frequent relapses usually arising in the mucous membrane of the nose. In several of these cases the prognosis was, perhaps, bad. In 13 per cent. the treatment had been discontinued and of these patients about one-half had died. Dr. Forchhammer illustrated his remarks by showing about 100 lupus patients who had not previously made their appearance at any congress.

### *The National Serum Institute of Denmark.*

At the same meeting Dr. Thorvald Madsen read a paper on the work of the National Serum Institute of Denmark. This institution provides the profession with all the needed antidiphtheria serum at a nominal price. Researches carried out by Dr. Madsen and Dr. Henderson having shown that two or three days were required before the maximum amount of diphtheria antitoxin passed into the blood from a quantity injected into the subcutaneous tissue, Dr. Madsen recommended intravenous injections in exceptionally serious cases. It would also be well to give preventive injections where a spreading of the infection was likely to occur—as, for instance, in schools. By this means Dr. Maag had been able to stamp out an epidemic in a Danish public school. Professor Dreyer's researches on the standardisation of the Widal test were then alluded to. When carried out in the usual way with living typhoid bacilli the test was very inaccurate, as the same serum might agglutinate one race of bacilli and fail to do so with another. Professor Dreyer had therefore prepared a standardised emulsion of typhoid bacilli killed by means of formol and this emulsion was more sensitive than the living bacilli, at the same time giving absolutely constant results. Killed standardised emulsions of typhoid and paratyphoid bacilli are supplied to the profession by the institute. Dr. Madsen showed a handy and inexpensive thermostat devised by Professor Dreyer. It could be purchased for 5*s.* and enabled any practitioner to carry out for himself the Widal macroscopic test.

Sept. 16th.

---

ENTERIC FEVER IN THE PONTYPOOL DISTRICT.—The report of Dr. R. W. Johnstone, of the Local Government Board, who investigated the recent outbreak of enteric fever in the Pontypool district, has just been issued. Dr. Johnstone states that there can be little doubt that enteric fever was started at Pontypool by specifically polluted water from the well of the gasworks.

# ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *The First National Congress on Industrial Diseases.*

THE "malattie del lavoro" (ailments contracted by the artisan or labourer) are becoming yearly more common in Italy, whose industrial progress, marked as it is, has its "reverse side" equally marked in the pathological sense. On Nov. 19th, 20th, and 21st Palermo will be the seat of the first congress on a national scale convened in Italy for the minimising of those "malattie" and already a strong committee has been formed to carry out its programme, strong in capacity to deal with the "patologia del lavoro" in all its aspects, medical, biological, and social. Under these several heads a number of papers are announced for reading and discussion, which, the special competency of their authors considered, cannot fail to fructify in legislation for the protection and the well-being of the working man. Dr. Giuseppe Züno, professor of legal medicine in the University of Messina, leads off with a report on "Infortunio e Malattie del Lavoro" (Labour: its Casualties and its Diseases); another important "Relazione" will be that by Dr. Eugenio Di Mattei, professor of hygiene in the University of Catania, and Dr. Francesco Spallitta who holds the chair of physiology in the Palermitan school; its subject: "L'Alimentazione delle Classi Laboratrici del Mezzogiorno" (the Feeding of the Working Classes of Southern Italy); and a third "report" will deal with "La Simulazione negli Infortunî" (Malingering or Simulation in Casualties, Medical and Surgical). This last has been intrusted to the capable hands of Dr. Domenico Mirto, professor of legal medicine in the University of Palermo, and Dr. Ciauri of the Army Medical Department. The president of the congress is Dr. Liborio Giuffrè, director of the Institute of Medical Pathology in the Palermitan School, and the general secretary is Dr. Rocco Jemma, who holds the chair of clinical pædiatry in the same seat of learning, to whom all communications by intending participants in the congress should be addressed.

### *The Opening of the Annus Academicus.*

When after its long *siesta* academic life has re-awakened and all the schools are starting on another year of activity, it may interest the English-speaking world to know what part Italy is taking in the equipment of her professional classes. The last statistics available are those for 1906–07, from which we find that the great seats of learning continue to be thronged—the University of Naples above all. At the close of the last academic year the legal faculty enrolled 2263, while in all the rest of the kingdom—comprising the "free" Universities of Camerino, Ferrara, Perugia, and Urbino—the students of the same faculty barely reached 7161. The Universities of Cagliari, Ferrara, Perugia, and Siena numbered least. Again, in the faculty of medicine and surgery the Neapolitan school outsoars all her sisters, enrolling 1427 students. Immediately after Naples come Rome, Palermo, and Turin, then Bologna, Padua, and Genoa. The classes of physics, chemistry, and the natural sciences are the least frequented, just as the aspirants to graduation in engineering are more numerous than the aspirants to graduation in mathematics; the difference, however, in the total is very small, well-nigh incalculable, while as between one university and another it is considerable. In pharmacy the similar aspirants are not many, the University of Turin claiming the largest contingent—130—the candidates for the professional diploma, all told, being 2601. Philosophy and literature claim 152 students at Turin, but Naples and Rome make a better show, the former with 307, the latter with 226. Then come Bologna with 115, Padua with 80, and Pisa with 70. Very few are the notaries and solicitors—388 in all. Academically accredited midwives amount to 1370 Rome numbering only 96, as against the 235 of Naples, 172 of Padua, and 247 of Pavia. It will be seen that the professional classes draw more recruits in Southern Italy and fewer in Northern Italy, the explanation being that in the north the openings for the comparatively lucrative *métiers* of commerce and industry are more inviting as well as more numerous, the north, moreover, attracting fewer candidates for the poorly-paid offices under Government, communal, or municipal. Veterinary surgery and agriculture draw few to their class-rooms, the former counting only 346, the latter 273. For the whole Italian kingdom (mainland and islands) the University students all told amount to 24,038, besides the 1491 who attend the "Istituti di Studî Superiori" like that of Florence; or the "Accademia Scientifico-Letteraria" of Milan; the "Scuola di Applicazione" of Rome; the "Scuola Superiore Navale" of Genoa; or the "Scuola Superiore Politecnica" of Naples. The "University Schools" annexed to the Lycées of Aquila, Bari, and Catanzaro have 273 pupils and the superior institutions for the training of female teachers in Rome and Florence 293. In all, the student population in attendance at seats of learning throughout Italy for the academic year 1906–07 were 26,096, marking a considerable diminution on the numbers of previous "anni academici."

Sept. 14th.

# VIENNA.

(FROM OUR OWN CORRESPONDENT.)

### *Small-pox in Vienna.*

THE epidemic of small-pox mentioned in my last letter is not yet entirely checked although the number of fresh cases within the last fortnight has not been more than five or six daily. Altogether 130 cases have been notified and about 500 persons who had been in more or less close contact with the patients were removed for quarantine, but up to the present time only a few of them have shown symptoms of the disease. The recommendation of the sanitary authorities that everyone should be revaccinated has been well responded to and the ample opportunities offered by the public vaccination stations were freely made use of, so that from 25,000 to 30,000 persons were reported as having been vaccinated or revaccinated every day. In less than a month about 1,000,000 persons, or half the population of Vienna, had been vaccinated at these stations and the number of vaccinations performed by medical men in private practice is estimated at a quarter of a million, so that both the vaccinators and the establishments where lymph is produced were kept very busy. As yet the outbreak has been confined to two densely populated districts in the south-west of the city, but in order to prevent extension the opening of the schools has been postponed until Oct. 1st, by which time the disease will probably be under control. Although many of the cases have been of a mild type the mortality is already 10 per cent. of the persons attacked, 76 per cent. have either not been vaccinated at all or have not been revaccinated within the last 20 years, whilst the remainder came from the district where the disease was prevalent and had been infected before the protective influence of revaccination had time to be developed. Of the patients who succumbed none had ever been vaccinated. The age incidence was as follows: 66 per cent. of the patients were under 25 years of age, 25 per cent. were between 25 and 50 years, and the rest were above 50 years, the oldest being 58 years. 30 per cent. of all patients were children below five years of age, which shows well the necessity of early vaccination; the youngest child who was attacked was two months old and the case terminated fatally. The precautions taken were, and are, very extensive and are worth recording. All public institutions and theatres, all factories, workshops, general stores, drapery shops, banking houses, post offices, tramway companies, and railway companies had their employees vaccinated by specially appointed medical men, and the fact was notified in the newspapers so that the public might have no fear of infection from these quarters. Vaccination was, in fact, the only topic of the day. In spite of the mischievous endeavours of the "nature-cure" partisans to shake public confidence in the beneficial effect of vaccination, the attitude of the general population has been quite praiseworthy.

### *Old-age Pensions for Country Medical Men.*

Some months ago a kind of strike movement was initiated among the country practitioners as a protest against the inadequate fees paid for public vaccination. This agitation has borne good fruit, for it has now been resolved by the Diet of Lower Austria that all district and country practitioners shall be entitled to a pension of about £65 a year after 30 years of service and that half of that sum shall be paid to their widows, besides certain fractions of that sum for each child. If a practitioner is disabled or dies whilst on duty his family is entitled to the full pension without reference to the period for which he has been in the service. In return for these emoluments the country practitioners must undertake free public vaccination of the poor (this was the main point of controversy), free treatment of the poor of the parish, and certain services in the infirmaries. The cost of the pensions will be borne partly by the practitioners themselves, a deduction of 3 per cent. being made from their salaries, but the chief burden will be borne by the State which will have to pay about £5000 yearly under this heading. The new statute will come into force on Jan. 1st, 1908. The benefits conferred by it are insignificant considering the amount of hard work done by the country practitioners, but a beginning has now been made and further improvements in the position of these medical men are only a question of time.

### *Poisoning by Solutions of Caustic Potash.*

Dr. von Pirquet and previously Dr. Teleky have investigated the conditions attending fatalities due to the domestic use of solutions of caustic potash for cleansing purposes and the results of their investigations were discussed at a recent meeting of the Vienna Society of Practitioners. The poison could be obtained easily by children, as no legal restriction was put on its sale. The strength of the solutions in question varied from 7·75 per cent. to over 30 per cent. and the accidents were mostly due to the reprehensible custom of allowing children to drink from bottles. Sometimes the poison was contained in ordinary beer or wine bottles, so that a mistake was easily made, especially by children, who form the majority (80 per cent.) of the victims. In seven years these investigators collected particulars of 362 cases from the Vienna hospitals, with a direct mortality of 18·5 per cent.; 10 per cent. of the patients had to be operated upon. Of those who survived the injury or the operation, 93 per cent. suffered from stricture of the œsophagus, with fatal complications in 5 per cent. at a later stage. Treatment by thiosinamin proved beneficial in Dr. Teleky's hands, apart from surgical measures. In the discussion there was a general agreement to the effect that the unrestricted sale of the poison should be prevented and that registered druggists only should be permitted to sell caustic soda or caustic potash, in definite low concentrations, and only in vessels of a special pattern. The addition of a substance having a disagreeable odour as an indication of danger was also thought to be worth consideration.

### *Partial Removal of a Tumour of the Hypophysis Cerebri.*

In THE LANCET of June 1st, p. 1528 mention was made of a new operation by Professor Schloffer of Innsbruck, on a case of tumour of the hypophysis cerebri. The patient, who had been suffering from constant headache and drowsiness, improved to some extent after the operation, his pains disappeared, and his general condition was good. Death occurred ten weeks after the operation and eight days before the closing scene headache and giddiness reappeared for a short time. A similar attack occurred the next day, then a third five days later, and the fourth proved fatal. The terminal attack was accompanied by vomiting, bradycardia, and Cheyne-Stokes breathing. Respiration ceased first and the heart's action subsequently. The post-mortem examination showed that the size of the growth had been underestimated, as more than four times the quantity removed at the operation had been left in the brain. The tumour penetrated into the left lateral ventricle; it had caused chronic hydrocephalus, it had destroyed parts of the optic nerves and the corpus callosum, and the concomitant hypoplasia of the genital organs was perhaps also due to its presence. The wound on the base of the skull had healed perfectly with a solid scar of connective tissue, which proved that in special cases the transnasal method of access to the hypophysis is permissible. The operation, which resulted in improvement of the distressing condition of the patient, had undoubtedly been of benefit by the diminution of compression which followed removal of a fifth of the tumour and the escape of fluid. Death occurred when the growth of the tumour finally closed the foramen of Monro, thus causing an acute obstruction in the lateral ventricle. The principal lesson taught by this case is the possibility of operating through the nose on the base of the brain without producing meningitis.

Sept. 14th.

# Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Loch has been recognised as *privat-docent* of Experimental Pathology.—*Berlin:* Dr. Peter Bergell, Assistant in the First Medical Clinic, Dr. Victor Schmieden, Assistant in the Ziegelstrasse Surgical Clinic, and Dr. Heinrich Poll, Assistant in the Institute of Anatomy and Biology, have been granted the rank of Titular Professor.—*Bologna:* Dr. Arturo Lanzerini has been recognised as *privat docent* of Internal Pathology and Dr. Alfredo Filè Bonarrola as *privat-docent* of Children's Diseases.—*Bonn:* The title of Professor has been granted to Dr. Max zur Nedden, *privat-docent* of Ophthalmology, and to Dr. Rudolf Eschweiler, *privat-docent* of Otology.—*Budapest:* Dr. Ladislaus Rohrer has been recognised as *privat docent* of Medical and Physical Chemistry.—*Cincinnati (Miami Medical College):* Dr. William D. Porter has been appointed Professor of Midwifery.—*Göttingen:* The title of Professor has been granted to Dr. Alfred Schittenhelm, *privat-docent* of Medicine, and to Dr. Rudolf Staehelin, of the University Clinic.—*Greifswald:* Dr. Guido Fischer has been recognised as *privat-docent* of Odontology.—*Kharkoff:* Dr. S. Pêtin has been recognised as *privat-docent* of Histology.—*Königsberg:* Dr. Isfried Hofbaur has been recognised as *privat docent* of Midwifery and Gynæcology; Dr. Arthur Brückner of Würzburg has been recognised as *privat docent* of Ophthalmology; Dr. Kurt Goldstein as *privat-docent* of Mental Diseases; and Dr. Ernst Laqueur of Halle as *privat-docent* of Physiology.—*Kiel:* Dr. Leopold Heine of Greifswald has been appointed Professor of Ophthalmology.—*Montreal (McGill University):* Dr. J. L. Todd has been appointed Professor of Parasitology and Dr. Andrew McPhail Professor of the History of Medicine.—*Naples:* Dr. Vittorio Schaffidi has been recognised as *privat-docent* of General Pathology; Dr Giovanni Di Cristini as *privat-docent* of Internal Pathology; Dr. Eugenio La Pegna as *privat-docent* of Neurology and Psychiatry; Dr. Ernesto Sgrosso as *privat-docent* of Ophthalmology; and Dr. Giuseppe Cristali as *privat-docent* of Midwifery and Gynæcology.—*New York (College of Physicians and Surgeons):* Dr. William K. Draper, Dr. George B. Lockwood, and Dr. Van Horne Norrie have been appointed Assistant Professors of Medicine; Dr. Royal Whitman, Assistant Professor of Orthopædics; and Dr. James D. Voorhees, Assistant Professor of Midwifery.—*Padua:* Dr. Luigi Messedaglia has been recognised as *privat docent* of Internal Pathology.—*Pavia*: Dr. Ettore Fornaroli has been recognised as *privat docent* of Medical Pathology and Dr. Gino Acconci and Dr. Carlo Pinto as *privat-docenten* of Midwifery and Gynæcology.—*Pisa:* Dr. Alberto Marrassini has been recognised as *privat-docent* of General Pathology; Dr. O. Torri as *privat-docent* of Internal Pathology; and Dr. Guido Ferrarini as *privat-docent* of External Pathology.—*Prague (Bohemian University):* Dr. Johann Jansky has been recognised as *privat-docent* of Mental Diseases.—*Rome:* Dr. Giulio Galli has been recognised as *privat-docent* of Internal Pathology and Dr. Enrico Fossatoro as *privat-docent* of Traumatic Diseases.—*Rostock:* Dr. Reinmöller has been appointed Lecturer in Odontology.—*Tübingen:* Dr. Sellheim has been appointed Professor of Gynæcology in succession to Dr. Döderlein.—*Turin:* Dr. Carlo Foà has been recognised as *privat-docent* of Experimental Physiology; Dr. Girolamo Piccardi as *privat-docent* of Dermatology; Dr. Luigi Bobbio as *privat docent* of External Pathology; Dr. Stefano Santucci as *privat-docent* of Ophthalmology; Dr. Santi Pusateri as *privat-docent* of Otology and Laryngology; Dr. Camillo Palazzo as *privat-docent* of Odontology; Dr. Stefano Balp as *privat docent* of Demography and Medical Statistics; and Dr. Edoardo Audenino and Dr. Francesco Burzio as *privat-docenten* of Psychiatry.—*Utrecht:* Dr. F. H. Quix has been appointed Lecturer in Otology and Laryngology.—*Vienna:* Dr. Josef Meller has been recognised as *privat-docent* of Ophthalmology.

THE PLAGUE IN INDIA.—The prize for the best essay on the best methods of prophylaxis against plague, which was offered last April by our contemporary the *Indian Medical Gazette*, has been awarded to first class hospital assistant P. S. Ramachandrier, of the Mysore Medical Service, who until lately was a member of the Plague Research Commission, and is well known as the editor, in conjunction with Mr. Anant Santram Malve, of the

*All-India Hospital Assistants' Journal.* The competition, which was restricted to assistant surgeons and hospital assistants, produced no fewer than 14 essays, of which the majority were highly praiseworthy. The author of the second best essay is first grade civil hospital assistant Annanda Charan Sarcar, who is in charge of the dispensary at Jugdispur in the Shahabad district. According to our contemporary this gentleman's essay is particularly valuable on account of the personal experience of the writer who gives a very satisfactory account of the methods which have been found successful in his district for destroying rats. Other essays worthy of mention, continues the editor, are those by (1) assistant surgeon Guru Prasad Mitra, M.B., of Dibrugar, Assam, which shows a very careful study of the most recent literature of plague; (2) assistant surgeon S K. Vaidya of Mirpur Khas, Sind; (3) assistant surgeon Abdul Ghani of Bareilly; (4) hospital assistant Veeraswamy Raidu of Mandalay; (5) assistant surgeon S. C. Basu of Rawal Pindi; and (6) assistant surgeon U. Ray of Harda, United Provinces. The place of honour in the *Indian Medical Gazette* for August is accorded to Mr. Ramachandrier's prize essay, which is printed *in extenso.* In addition to adequate scientific equipment the writer possesses a thorough knowledge of the habits and customs of his native country and is, moreover, able to convey his meaning in clear and convincing if somewhat unconventional language. Mr. Ramachandrier's essay is a thoroughly practical document, well worthy of the attention of the authorities in India who are chiefly concerned in the repression of plague. His knowledge of the inner life of the people of India is invaluable, combined as it is with the will and the ability to place it at the disposal of the executive.

PUBLIC VACCINATORS' FEES.—Some time ago the Wandsworth board of guardians decided to adopt the minimum scale of fees for public vaccination. At the meeting of the board a month ago the practitioners affected sent a deputation and pointed out the inadequacy of the fee of 2*s.* 6*d.* for primary vaccination at a child's home. The guardians as a whole agreed and were willing to increase the amount to 3*s* 6*d.*, but a point of order was raised by an anti-vaccination member with the result that the subject had to be adjourned. At the meeting of the board held on Sept. 12th a letter was submitted from Mr. E. R. Badcock on behalf of the public vaccinators stating that they were prepared to accept the new fees with the exception of that for primary vaccination at the child's home. They suggested that 5*s.* should be paid as formerly in respect of every such vaccination, with a reduced fee of 2*s.* 6*d.* for the second and subsequent cases. A guardian raised a point of order—namely, that before the subject could be considered there must be a motion to rescind the resolution which adopted the reduced scale. This was conceded and the vice-chairman of the board gave notice of his intention at the next meeting to move the rescinding of the resolution referred to.—At a meeting of the Bodmin (Cornwall) board of guardians held last week a letter was read from the eight public vaccinators of the union stating that they were unable to accept the reduced scale of vaccination fees suggested by the guardians and adding that in the opinion of the writers the Order of the Local Government Board was evidently not intended to apply to such a scattered district as the Bodmin union. After some discussion the guardians referred the matter to the finance committee.

POST-GRADUATE WORK IN HAMBURG.—"D. J. G." writes to us as follows: "During a recent visit to the hospitals of Hamburg I have been much impressed not only by their excellent management but by the facilities they afford for post-graduate work. The general hospital at Eppendorf is a modern edifice built on the pavilion system and having accommodation for over 2000 patients. Its surgical department is under the care of Professor Kümmell, whose orthopædic work is well known, whilst Dr. Unna has charge of those wards reserved for cases of skin disease. There are many other pavilions, all of them airy, clean, and orderly; indeed, Hamburg may well be proud of this splendid hospital. Nearer the centre of the city, amid beautiful grounds, stands the Hospital of St. George, containing about 1000 beds. There is here a large and well-equipped pathological laboratory in which each of the assistant physicians and surgeons has his bench for research work. Post-graduate courses, each lasting for several weeks, are held yearly at those hospitals. The Eppendorf course is held in August and that at the St. George during March. One may then attend medical and surgical cliniques and receive practical instruction in ophthalmology, gynæcology, laryngoscopy, medical electricity, &c. Those who take advantage of the classes are for the most part German practitioners, and remarkably few English names are to be seen in the visitors' books of the hospitals. A course of a practical nature on tropical diseases is given twice a year at the Hamburg Seamen's Hospital and here also ship surgeons may be taught their special duties. To the doctor who has little time at his disposal but who wishes to see something of German methods and work one can have no hesitation in recommending Hamburg as a place of study."

SEAMEN'S HOSPITAL SOCIETY.—The inaugural address of the winter session of the London School of Clinical Medicine will be delivered in one of the lecture rooms of the school by Sir Richard Douglas Powell, President of the Royal College of Physicians of London, on Tuesday, Oct. 8th. The chair will be taken at 3.30 P.M. by Mr. Perceval A. Nairne, chairman of the board of governors. The school and hospital will be open for inspection and tea will be served after the address.

GREAT NORTHERN CENTRAL HOSPITAL: A CORRECTION.—The secretary of this hospital writes to inform us that the names of the staff of the hospital, as sent to us from the institution and published in the Students' Number of THE LANCET, are not given quite accurately. The staff is as follows:—Consulting Physicians: Sir S. Wilks, Bart., and Dr. R. Burnet. Physicians: Dr. E. C. Beale, Dr. C. E. Beevor, Dr. A. Morison, Dr. T. J. Horder, Dr. H. E. Symes-Thompson, and Dr. H. W. Willcox. Obstetric Physicians: Dr. G. F. Blacker and Dr. Cuthbert Lockyer. Physician for Skin: Dr. A. Whitfield. Surgeons: Mr. P. T. B. Beale, Mr. G. B. M. White, Mr. E. C. Stabb, Mr. V. W. Low, and Mr. Arthur Edmunds. Ophthalmic Surgeons: Mr. A. S. Morton and Mr. George Coats. Throat and Ear Surgeons: Mr. E. B Waggett and Mr. J. Gay French. Dental Surgeon: Mr. C. Peyton Baly.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At Wadebridge (Cornwall) on August 30th Mr. William Annesley Eden, L.R C P. Lond., M.R.C.S Eng., L.S.A., was presented with a silver rose bowl as a mark of respect and esteem on the occasion of his leaving the town.—At the meeting of the Long Ashton (Somerset) board of guardians held on Sept. 3rd, under the presidency of Sir Henry Miles, Mr. Frederick Weatherly, M.R C.S. Eng., L.S A., J.P., was presented with a silver tray, tea and coffee services, and kettle. On the back of the tray was the following inscription: "This tray, with tea and coffee services and kettle, was presented to Frederick Weatherly, Esq., J.P., in his eighty-eighth year, by past and present guardians of the Long Ashton Union and other friends, as a mark of their esteem and appreciation of his public services as vice-chairman and chairman of the board for a period extending over a quarter of a century."—Mr. Eleazar Davies, L.R.C P. & S. Edin., and Mrs. Davies have been presented by the inhabitants of Pantywaun, near Dowlais, with a silver tray (suitably inscribed), silver cruet, and a work-basket.

THE FUNERAL OF MR. TIMOTHY HOLMES.—Mr. Timothy Holmes, senior consulting surgeon to St. George's Hospital, who died on Sunday, Sept. 8th, was buried on the following Thursday at Hendon. Among those who attended the funeral, in addition to members of the families of Mrs. Holmes and of the deceased, were Sir William S. Church, representing the Royal Society of Medicine, Mr. Holmes having been formerly President of the Royal Medical and Chirurgical Society; Mr. J Warrington Haward, representing the Royal College of Surgeons of England, of which Mr. Holmes was formerly Vice-President; Sir Alexander Bruce, Sir Melville Macnaghten, and Mr. Clinton T. Dent, representing Scotland Yard, Mr. Holmes having for 20 years been chief surgeon to the Metropolitan Police; Lieutenant-Colonel Montefiore, representing the Charity Organisation Society; the Rev. A. G. Looke, representing the governors of St. George's Hospital; Mr. Herbert S Pendlebury, honorary treasurer of that hospital; Mr. M. P. Jasper, representing the London Sanitary Protection Association, of which body Mr. Holmes was chairman; Dr. G. F. Blandford, Dr. Frederic W. Hewitt, Mr. W. C. Bull, and

Dr. Arthur C. Latham, members of the consulting and active medical staff of St. George's Hospital; Dr. S. S. Sprigge, representing THE LANCET; Dr. C. Spencer Cobbold, Mr. Charles E. Underhill, Dr. A. J. Jex-Blake, Mr. G. E. Friend, Mr. Arthur Johnson, and Dr. R. S. Trevor. The first part of the service was held in the old parish church and both there and at the graveside the officiating clergyman was the Rev. F. W. Pakenham Gilbert.

LITERARY INTELLIGENCE.—Mr. H. J. Glaisher of Wigmore-steeet is publishing for the Ambrose Company "Anthropometrical Schedules" prepared by Mr. John Gray, B.Sc., Secretary to the Anthropometrical Committee of the British Association, and also a "Book of Instructions for Taking Anthropometrical Measurements" by the same author.

DONATIONS AND BEQUESTS.—Mr. William Richardson of Kingston-upon-Hull has bequeathed £2000 to the Hull Royal Infirmary, £1500 to the Hull and Sculcoats Dispensary, and £1000 to the Victoria Hospital for Poor Sick Children, Kingston-upon-Hull.—The Infants' Hospital, Vincent-square, Westminster, has received through the ladies' committee a donation of £500 from Mrs. Heron-Allen for the endowment of a cot.—Mr. Henry Finlay has given by will, among other bequests, £500 each to the Poplar Hospital; the Home for Incurables, Putney; the British Home for Incurables, Streatham; the Fever Hospital, Liverpool-road, N.; the Royal Sea Bathing Infirmary, Margate; the North London Hospital, Holloway-road; the Earlswood Asylum for Idiots; St. John's Hospital for Diseases of the Skin, Leicester-square; the National Orthopædic Hospital, Great Portland-street; the Hospital for Diseases of the Throat, Golden-square; the National Hospital for the Paralysed and Epileptic, Bloomsbury; the Asylum for Deaf and Dumb Children, Old Kent-road and Margate; the Hospital for Sick Children, Great Ormond-street; the Cancer Hospital, Brompton; the London Hospital; Guy's Hospital; St. Thomas's Hospital; and the Consumption Hospital, Victoria Park, E.

## BOOKS, ETC., RECEIVED.

FISCHER, GUSTAV, Jena.

Plasma und Zelle. Erste Abteilung. Allgemeine Anatomie der lebendigen Masse. Bearbeitet von Prof. Dr. Martin Heidenhain in Tübingen. Erste Lieferung: Die Grundlagen der mikroskopischen Anatomie die Kerne, die Centren und die Granulalehre. (Part 14 of "Handbuch der Anatomie des Menschen," edited by Prof..Dr. Karl von Bardeleben) Price to subscribers, M.16; to non-subscribers, M.20.

Handbuch der Technik und Methodik der Immunitätsforschung Herausgegeben von Prof. Dr. R. Kraus in Wien und Dr. C. Levaditi in Paris. Erster Band. Erste Lieferung. Price M. 15.

FROWDE, HENRY, Oxford University Press, London, New York, and Toronto.

The World's Classics. Price 1*s.* each net. CXXX. and CXXXI. Don Quixote. By Miguel de Cervantes Saavedra. Translated by Charles Jervas. Edited, with Notes and an Introduction by James Fitzmaurice-Kelly. In two volumes.—CXXXVI. Butler's Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature. Edited by the Right Hon. W. E. Gladstone. - CXLII. The Journal of a Voyage to Lisbon. By Henry Fielding. Edited, with Introduction and Notes, by Austin Dobson, Hon. LL D. Edin.—CXLV. The Works of Ruskin. Sesame and Lilies. The Ethics of the Dust.

OWEN, A., AND CO., 28, Regent-street, London, W.

Matter and Intellect: A Reconciliation of Science and the Bible. By Andrew Allan. Price 5*s.*

REID, ANDREW, AND CO., LIMITED, Newcastle-upon-Tyne.

University of Durham College of Medicine, Newcastle-upon-Tyne. Calendar for the Year 1907-08. Price not stated.

RICHARDS, E. GRANT, 7, Carlton-street, London.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F Z S. With Illustrations by Lilian M. Medland. In 20 parts. Part VII. Price 7*s.* 6*d.* net.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, Sixty-Sixth Street and Avenue A, New York, U.S.A.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume VI. 1907. Price not stated.

SAMPSON, LOW, MARSTON, AND CO., London.

On Stammering, Cleft-palate Speech, Lisping. By Mrs. Emil Behnke. Price 1*s.* net.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. (Secretary, Dr. WILLIAM D. HAGGARD, Nashville, Tennessee, U.S.A.)

Transactions of the Southern Surgical and Gynecological Association. Volume XIX. Nineteenth Session, held at Baltimore, Maryland, December 11th, 12th, and 13th, 1906. Edited by W. D. Haggard, M.D. Price not stated.

## Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DAVIDSON, GEORGE EDWARD, M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Shere District of the county of Surrey.

DERRY, BARTHOLOMEW GIDLEY, L.R.C.P. Lond., M.R.C.S., has been re-apppointed Medical Officer of Health for Bodmin Urban District.

DE SYLVA, E. M. J., L.R C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Scalloway District of the county of Shetland.

FOLEY, CORNELIUS, L R.C.P. & S., L.M. Irel., has been appointed District Medical Officer by the Ross (Herefordshire) Board of Guardians.

GRANDAGE, WILLIAM B., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Resident Medical Officer to Queen Charlotte's Lying-in Hospital

HARVEY, FRANK, M.R.C.S., L S A., has been appointed District Medical Officer by the St. Columb Major (Cornwall) Board of Guardians.

HENDERSON, G., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Coldstream District of the county of Berwick.

IMRIE, G. J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Levenwick District of the county of Shetland.

LAVERS, NORMAN, M.D. Brux., M.R.C.S., L.R.C.P. Lond., has been appointed Physician Superintendent of Bailbrook House, Bath.

RICHARDS, JOHN BARROW OSBORNE, L.R.C.P. & S. Edin., L.F.P.S. Glasg, has been appointed Medical Officer of Health for the Wadebridge (Cornwall) Urban District.

SHARP, P. J., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ollaberry District of the county of Shetland.

SINGER, H. DOUGLAS, M.D. Lond., M.R.C.P. Lond., has been appointed Director of the Psychopathic Institute of the State of Illinois in the Eastern Hospital for the Insane, Illinois, U.S A.

SKINNER, D., L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Lauder District of the county of Berwick.

STEWART, G. N., M.B., M.S. Edin., D.P.H. Cantab., Professor of Physiology in the University of Chicago, has been appointed Director of the Laboratory of Experimental Medicine, Western Reserve University, Cleveland, U.S.A.

TEMPLETON, WILLIAM, M.B., Ch.B. Glasg., has been appointed Extra Anæsthetist to the Glasgow Samaritan Hospital for Women.

## Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BIRMINGHAM GENERAL HOSPITAL.—Two Receiving-room Officers. Salary £150 per annum.

BRENTFORD UNION WORKHOUSE AND SCHOOLS, Isleworth, W.—Second Assistant Medical Officer, unmarried. Salary £125 per annum, with lunch and tea.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon. Salary at rate of £80 a year, with board, lodging and washing.

BUXTON, DERBYSHIRE DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CAMBERWELL HOUSE ASYLUM, S.E.—Second Assistant Medical Officer. Salary £150 per annum, rising to £200, with board, apartments, and laundry.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary 100 guineas per annum. Also Two House Physicians for six months. Salary at rate of £50 per annum, with board, washing, and residence.

CROYDON GENERAL HOSPITAL.—Senior and Junior House Surgeons. Salary of former £105, and of latter £60, with board, laundry, and residence in each case.

DORCHESTER DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100, with board and lodging

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £120, with board and lodging.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—Clinical Assistants

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's Buildings, Holborn Circus, E.C.—Resident Medical Officer. Salary £120 per annum, with apartments, coal, gas, and attendance. Also Honorary Dental Surgeon.

FIFE DISTRICT ASYLUM, Cupar-Fife.—Junior Assistant Medical Officer. Salary £120, with rooms, board, and attendance.

GLOUCESTER, GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, Assistant Casualty Medical Officer, and House Physician, unmarried, all for six months. Salary £20, with board and residence in the hospital in each case.

Hospital for Women, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

Infants' Hospital, Vincent-square, Westminster.—Honorary Medical Officer to the Nursing Staff.

Jersey Dispensary.—Resident Medical Officer. Salary £120, with furnished quarters and attendance

Leicester Infirmary.—House Physician. Salary £100 per annum, with board, lodging, and washing.

Liverpool Eye and Ear Infirmary, Myrtle-street.—House Surgeon. Salary £80 per annum.

London Hospital, Whitechspel, E.—Surgeon Dentist.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—Honorary Surgeon.

Manchester Royal Infirmary.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

Manchester, University of.—Senior Demonstrator in Physiology. Salary £150, rising to £200 per annum.

Newcastle-upon-Tyne, University of Durham College of Medicine.—Demonstrator of Physiology. Salary £200 per annum.

Norwich City Asylum, Hellesdou-next-Norwich.—Resident Medical Superintendent. Salary £400 per annum, rising to £600, with furnished residence, fuel, light, rates, washing, &c.

Paisley, Riccartsbar Asylum.—Assistant Resident Medical Officer. Salary £120 per annum, with board and apartments.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Prince of Wales's General Hospital, Tottenham, London, N.—House Surgeon and House Physician. Salaries £75 per annum each. Also Junior House Surgeon and Junior House Physician. Salaries £40 per annum each. With residence, board, and laundry in each case; all for six months.

Reading, Royal Berkshire Hospital.—Assistant House Surgeon for six months Salary at rate of £60 per annum, with board, lodging, and washing.

Royal Dental Hospital, Leicester-square.—Morning House Anæsthetist. Honorarium £50 per annum.

Royal London Ophthalmic Hospital, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 a year, with board and residence.

Royal National Orthopædic Hospital, W.—Honorary Dental Surgeon. Also Honorary Assistant Anæsthetist.

St. Marylebone, Metropolitan Borough of.—Medical Officer of Health. Salary £600 per annum.

Salford Royal Hospital.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Clinical Assistants.

Seamen's Hospital Society, Greenwich, S.E.—For Dreadnought Hospital: Two House Physicians and Two House Surgeons for six months. Salary at rate of £50 per annum, with board, residence, and washing. For Branch Hospital, Royal Albert Dock, E.: Senior House Surgeon for six months. Salary at rate of £75 per annum and additional £25 per annum for acting as Registrar, &c., with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Settlement of Women Workers, Canning Town Medical Mission Hospital.—Honorary Anæsthetist (female).

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Sheffield Union Hospital.—Locum Tenens.

Taunton, Taunton and Somerset Hospital.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

Tunbridge Wells, General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

West London Hospital, Hammersmith-road, W. — Assistant Physician.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board and lodging.

Worcester County and City Asylum.—Third Assistant Medical Officer, unmarried. Salary £140, rising to £160, and all found.

---

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Newcastleton, in the county of Roxburgh, and at Rothwell, in the county of Northampton.

# Births, Marriages, and Deaths.

## BIRTHS.

Lloyd.—On Sept. 10th, at Park-street West, Luton, Beds., the wife of Francis Seymour Lloyd, M.D. Lond., of a daughter.

Niblock.—On Sept. 12th, at Orton Rigg, Canford Cliffs, Bournemouth, the wife of Major W. J. Niblock, I.M.S., of a son.

McElwee.—On Sept. 13th, at Belsize-avenue, London, N.W., the wife of Fleet-Surgeon John McElwee, Royal Navy, of a son.

## MARRIAGE.

Williams—Freeman.—On Sept. 11th, at St. Stephen's Church, Lindley, Huddersfield, Alfred Williams, M.D., M.R.C.S., to Kathleen, elder daughter of Colonel and Mrs. C. E. Freeman of Oakwood, Edgerton, Huddersfield.

## DEATH.

Crowfoot.—On Sept. 11th, at Beccles, Suffolk, William Bayly Crowfoot, M.A., M.B., B.C. Cantab., aged 29 years, from appendicitis.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE PULVERMACHER INSTITUTE.

In the *Daily News* of Thursday, Sept. 12th, appears an editorial paragraph or an advertisement—there is nothing to show which—dealing with the Pulvermacher Institute. It is written, as is usual with puffs of quack appliances, in confidential, sympathetic style and gives a lurid picture of mental depression. After the reader has been brought to a properly anxious and miserable frame of mind he is incidentally told that if any reader of the *Daily News* feels interested in the matter a letter addressed to the superintendent of the Pulvermacher Institute will bring a book by return, and so forth. Now all this is part and parcel of the modern quack system, but what we do object to is the final paragraph which says that "it"—i e., the Pulvermacher treatment—"is recommended by the highest Medical Hygienic Authorities, including, among many others, Sir Chas. Locock, Physician to our (*sic*) Majesty, and 'The Lancet,' the leading medical journal." This statement we have no hesitation in saying is a deliberate lie inserted with the intent to deceive the public, and it is one of the worst kind of lies in that there is a modicum of truth therein. It is quite true that in the year 1856 we commented favourably upon the modification of the old-fashioned voltaic pile which was invented by Dr. Pulvermacher of Vienna, and it is quite possible that Sir Charles Locock, who has been dead upwards of 30 years, also expressed himself as favourably impressed with it, but the Pulvermacher Institute as at present constituted is simply a quack establishment presided over by a manager who, in December, 1906, was absolutely ignorant of any facts about electricity or its medical application. We interviewed this person at that date and an account of our interview with him will be found in The Lancet of Dec. 8th of that year. We showed that the institute was a purely quack establishment which exploited electricity and the writings of well-known authorities on medical electricity with a view to gulling the public and posing as being able to cure real or imaginary sexual and other disorders. We again charge the Pulvermacher Institute with deliberately making a false use of our name with the intent to deceive the public, and at the same time we may point out to the proprietors of the *Daily News* that by inserting this advertisement or editorial paragraph, whichever it may be, they are in any case assisting to deceive their fellow creatures and, if the paragraph should be a paid advertisement, they are profiting in pocket by the deception.

## SPITTING.

*To the Editors of* The Lancet.

Sirs,—Although the by-law prohibiting people from spitting in public places, under a penalty of 40*s.* and costs for each offence, was issued by the London County Council as far back as July, 1903, only one delinquent, to my knowledge, has been convicted and fined, and even he would no doubt have escaped punishment had he not aggravated the situation by the use of obscene language. In my opinion, it is nothing short of scandalous that those who persistently and defiantly indulge in the filthy, disgusting, and, above all, *dangerous* habit of spitting in public buildings, carriages, &c., should go unpunished, and their perfect immunity from interference by the London County Council themselves, railway officials, and the like, only shows what an utter farce the by-law against spitting actually is. I have repeatedly communicated direct with the London County Council on this important matter, and even gone so far as to offer them my services in getting notices affixed where they are needed, and to otherwise assist them in suppressing this abominable public nuisance, but have received no support or encouragement whatever. I have also made suggestions to railway and omnibus companies in connexion with this subject, but they have done nothing beyond acknowledging my letters, nor do they seem to care one iota whether the floors of their vehicles are covered with expectorations or not, and this despite the fact that the by-law against spitting is included in their schedules. If an important statute—such as the one in question—is drawn up for the general good of the community and in the interests of the public health, it should be enforced with callous austerity, otherwise its enactment amounts to nothing more than a mockery and can only bring ridicule and contempt upon those who are responsible for it.

I am, Sirs, yours faithfully,
Oscar Mouat Balthasar.

South Hampstead, N.W., Sept. 11th, 1907.

## "ELASTES" FOR AUTOCARS.

*To the Editors of* The Lancet.

Sirs,—Probably some of the readers of The Lancet who use autocars will be interested to hear my experience of "Elastes" filling for tyres. So far it is favourable. As regards comfort and freedom from vibration "Elastes" equals air as a filling for tyres. It entirely does away with the various troubles and delays incidental to pneumatics as ordinarily used. No change in wheels or rims is necessary, but the "Elastes" Co.

only fill new inner tubes and new covers. Cost is rather an important item, but the life of the covers is much greater with "Elastes" than when air filled. Further, when an outer cover is worn out the inner tube and "Elastes" filling can be used again. The increase of weight is considerable. My car is of seven horse-power, driving tyres 700 by 85 mm., weight of each wheel 56 pounds—this includes the brake drum. I have no financial or other interest in the "Elastes" Co. Any further information that I can give is at the service of your readers.

I am, Sirs, yours faithfully,

Roche, Cornwall, Sept. 7th, 1907. C. E. ABBOTT, M.R.C.S. Eng.

## A HINT TO PUBLIC VACCINATORS.

*To the Editors of* THE LANCET.

SIRS,—In these days of surgical cleanliness it is to be hoped that no vaccinator is guilty of ejecting the lymph by putting the tube to his lips, but where for any reason the ordinary ejectors are not at hand there may be a temptation to revert to this objectionable method. It is useful to know that the common black rubber nipple of an ordinary feeding-bottle makes an excellent lymph ejector. The tube is inserted from either end with the greatest ease, the ends nipped off, and the tube pulled forward nearly to the top of the bulb. The nipple is held as shown in Fig. 1. The index finger being placed on the open end, a gentle squeeze by the thumb and second finger will eject the lymph. It is also useful as a tube holder (Fig. 2) to enable the tube to be put down, while the arm and instruments are being prepared, without fear of breaking or contamination by the open ends of the tube touching anything. These nipples are obtainable almost anywhere and can be easily sterilised by boiling.

FIG. 1.

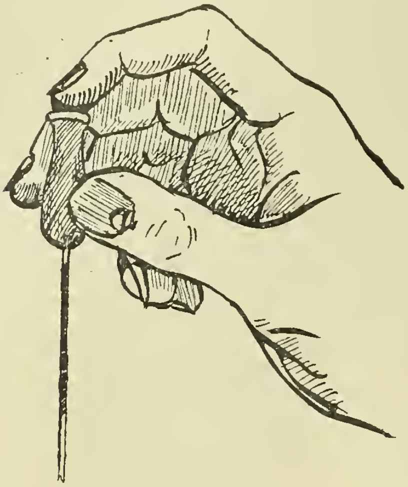
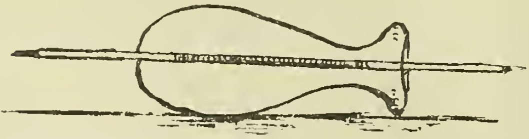


FIG. 2.



I am, Sirs, yours faithfully,

JOHN LAWRENCE, M.R.C.S. Eng., L.R.C.P. Lond.

Crewe, August 31st, 1907.

## THE REMOVAL OF POWDER STAINS.

*To the Editors of* THE LANCET.

SIRS,—In answer to your correspondent "A. F. H." in THE LANCET of Sept. 14th I append a process by which I have very successfully removed tatoo marks and think the same might apply. The formula is as follows: Make a mass, the consistency of dough, with salicylic acid and glycerine, apply to the marks, and confine with a compress and strips of plaster for from five to seven days. Then remove the layer of epidermis over the marks and apply salicylic acid and glycerine as before. It may be necessary to apply three times, but usually the second application removes the marks.—I am, Sirs, yours faithfully,

Sept. 16th, 1907. W. PEART-THOMAS, M.D. Edin.

## EAR PLUGS.

*To the Editors of* THE LANCET.

SIRS,—I should be very glad to know if any of your readers have ever used or recommended any kind of ear plug for effectually deadening sound at night. I have the misfortune to inherit a tendency to insomnia, which has doubtless been increased by the anxieties of a busy professional life. I have a wholesome dread of all sleeping draughts and am inclined to rely more on absolute quiet at night, though this is becoming increasingly difficult to secure. I have been recommended to try the gutta-percha ear plugs used, I believe, by divers, but they are very uncomfortable and I am afraid of their pressure on the ear-drums. Can any reader inform me if there is a more comfortable article to be obtained and where it may be had? Herbert Spencer is said to have used some apparatus of the kind very frequently.

I am, Sirs, yours faithfully,

Farnham, Sept. 15th, 1907. F. G.

## THE LATE DR. J. P. MAGUIRE.

*To the Editors of* THE LANCET.

SIRS,—Allow me to bring under your notice a distressing case that has occurred in this neighbourhood. In January last Dr. J. P. Maguire was seized with sudden and severe illness and succumbed to an attack of acute Bright's disease. He left a widow and a little boy (aged ten years) quite destitute and I am trying to get together enough money to pay for the widow's training as a midwifery nurse. The little boy we have a prospect of getting settled in a school near Dublin. So far I have only applied locally but the response has been so feeble that I am forced to appeal to a wider public—the charitable members of the profession. The following have already generously subscribed:—

| | | s | d |
|---|---|---|---|
| Mr. J. Hanharan, Hollymount ... ... ... ... | 2 | 2 | 0 |
| Dr M. Semple, Cong .. | 1 | 1 | 0 |
| Mr. A. Gill, Westport ... | 1 | 1 | 0 |
| Dr F. M. Golding, Headford ... ... ... ... ... | 1 | 1 | 0 |
| Dr. Corcoran, Ballinrobe | 1 | 1 | 0 |
| Dr. R Macaulay, Ballina | 1 | 0 | 0 |
| Dr. T. B. Costello, Tuam | 1 | 0 | 0 |
| Mr. J. McNulty, Killala... | 1 | 0 | 0 |

| | £ | s. | d. |
|---|---|---|---|
| Surgeon-General C. Joynt, Dublin ... ... | 0 | 10 | 0 |
| Dr. J. Hegarty, Clonbur | 0 | 10 | 0 |
| Dr. R B. Mahon, Ballinrobe ... ... ... | 3 | 3 | 0 |
| Donation from Royal Medical Benevolent Fund ... ... ... ... | 15 | 0 | 0 |
| Total ... ... ... ... | 28 | 9 | 0 |

Of this sum £4 have been disbursed for pressing necessities, leaving £24 9*s.* in hand. If this could be brought up to £50 it would enable us to place the widow in a position to support herself.

I am, Sirs, yours faithfully,

Ballinrobe, Ireland, Sept. 14th. R. B. MAHON.

## MISLEADING PRESS CUTTINGS.

*To the Editors of* THE LANCET.

SIRS,—May we ask you to state that the General Press Cutting Association, Limited, of Lennox House, Norfolk-street, did not supply the misleading cuttings referred to in your note in to-day's issue of THE LANCET? We think it necessary this disclaimer should be made, in view of the fact that a large number of technical and trade papers are on our books.—We are, Sirs, your obedient servants,

THE GENERAL PRESS CUTTING ASSOCIATION, LIMITED.
(H. C. GOODE, Manager.)

Lennox-House, Norfolk-street, London, W.C., Sept. 7th, 1907.

◆

*X. Y. Z.*—We have recently referred to the subject. During late years the position and emoluments of naval medical officers have been greatly improved, several wise arrangements for the practical efficiency of the Naval Medical Department having been inaugurated by the late Director-General, Sir Henry Norbury. Of course, in such a complex organisation as our Navy it must always be a difficult task to frame every regulation to the complete satisfaction of any one branch of the service, while preserving the relations of the different departments—gunnery, torpedo, engineer, medical, commissariat—in harmonious coöperation.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Sept. 19th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain-fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 13 | 30 12 | S.W. | ... | 80 | 73 | 55 | 56 | 57 | Foggy |
| " 14 | 30 14 | N. | ... | 104 | 66 | 56 | 53 | 57 | Overcast |
| " 15 | 30 33 | N. | ... | 96 | 62 | 50 | 50 | 53 | Fine |
| " 16 | 30 43 | W. | ... | 113 | 69 | 53 | 51 | 56 | Overcast |
| " 17 | 30 35 | W. | ... | 105 | 69 | 56 | 57 | 60 | Fine |
| " 18 | 30 44 | N.E. | ... | 91 | 66 | 52 | 53 | 56 | Cloudy |
| " 19 | 30 45 | E. | ... | 99 | 66 | 51 | 53 | 54 | Foggy |

**During the week marked copies of the following newspapers have been received:**—*Bury and Norwich Post and Suffolk Standard, Yorkshire Post, Glasgow Herald, Liverpool Daily Post, Warrington Guardian, Dumfries and Galloway Courier and Herald, Birkenhead and Cheshire Advertiser, Buxton Herald, Morning Leader, Belfast News Letter, Daily Telegraph, Daily Graphic, Daily Chronicle, Tribune, Glasgow Evening Citizen, &c.*

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

**THURSDAY** (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (28th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (23rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. X Rays.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P M: Dr. H. G. Adamson: Clinique. (Skin.)

**TUESDAY** (24th). POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. L. Guthrie: Clinique. (Medical.)

**WEDNESDAY** (25th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. X Rays. Dr. Robinson: Diseases of Women.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. L. Mummery: Clinique. (Surgical.)

**THURSDAY** (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. X Rays.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

**FRIDAY** (27th). POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W C.).—4 P.M.: Mr. S. Stephenson: Clinique. (Eye.)

**SATURDAY** (28th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. X Rays. Dr. Robinson: Diseases of Women.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | | | |
|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 |
| Six Months ... ... ... | 0 | 16 | 3 |
| Three Months ... ... | 0 | 8 | 2 |

| TO THE COLONIES AND ABROAD. | | | |
|---|---|---|---|
| One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## Communications, Letters, &c., have been received from—

**A.**—Monsieur F. Alcan, Paris; Ardath Tobacco Co., Lond.; Secretary of; Dr. Edwin Ash, Lond.; Mr. J. Astier, Asnières; Messrs. Allen and Hanburys, Lond.; Mr. E. Arnold, Lond.; Mr. Algernon Ashton, Lond.; Dr. Henry Russell Andrews, Lond.; American Academy of Medicine, Easton, Pa., U.S.A.

**B.**—Dr. A. T. Brand, Driffield; Dr. L. H. Bruce, Ferryhill; Messrs. Bedford and Co., Lond.; Mr. S. N. Bardhan, Singapore; Mr. G. Sherman Bigg, Lond.; Mr. T. B. Browne, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Mrs. Bernard, Buncrana; Mrs. Butlin, Lond.; Messrs. Begg, Kennedy, and Elder, Glasgow; Messrs. C. Barker and Sons, Lond.; Mr. C. Birchall, Liverpool; British Fire Prevention Committee, Lond.

**C.**—Mr. Joseph Cunning, Lond.; Mr. H. S. Clegg, Lond.; Messrs. Cadbury Bros., Bournville; Messrs J. and A. Carter, Lond.; Messrs Crossley and Co., Lond.; C. B. M; *The Canadian Journal of Medicine and Surgery* Toronto, Managing Editor of.; Dr. Myer Coplans, Leeds; Croydon General Hospital, Secretary of; *Canadian Nurse*, Toronto, Editor of.

**D.**—Mr. Howard Davies, Pontypridd; Derbyshire Royal Infirmary, Derby, Secretary of; Devonshire House, Buxton, Secretary of; Durham County Hospital, Secretary of; D. J. G.

**E.**—Dr. G. L. Eastes, Lond.; *Eastern Morning News*, Hull, Manager of; E. A.; E. G. G.; Mr. S. E. H. Everhill, Birmingham; Major P. Evans, R.A.M.C., Lowestoft; Dr. Alexander Edington, Edinburgh.

**F.**—Fife District Asylum, Cupar, Medical Superintendent of; Messrs. L. Foster and Sons, York; Mr. F. T. Fagge, Lond.; Mr. F. T. Fryer, Bristol; Major C. E. P. Fowler, R.A.M.C., Walton-on-Thames.

**G.**—Mr. W. Grisewood, Liverpool; Messrs. R. W. Greeff and Co., Lond.; Mr. S. H. Greene, Lond.; Mr. Henry Granger, Bournemouth; Glamorganshire Chamber of Agriculture, Cardiff; Mr. John Good, Knightwick; A General Practitioner; The Galen Manufacturing Co., Lond.; Messrs. Giddy and Giddy, Lond.; Gloucester General Infirmary, Secretary of; Dr. E. A. Gates, Lond.; Dr. A. H. Gerrard, Lond.

**H.**—Dr. P. W. Hampton, Douglas; Dr. Francis H. Hawkins, Reading; Mr. Charles Higgens, Lond.; Dr. T. Barrett Heggs, Sittingbourne; Mr. Henry J. C. Hardcastle, Lond.; Dr. Alfred Harris, Newcastle-on-Tyne; H. D. M. C.; Mr. T. H. Hewitt, Lond.; Mr. J. H. Hartley, Ferrol; Dr. T. R. Henderson, Lond.; Miss Jean Hastie, Lond.; Mr. M. Hayes, Limerick; Mr. K. Honig, Koog; Dr. W. N. Heard, Swanage; Dr. George Hall, Bishop Auckland; Dr. A. C. Haslam, Lond.

**I.**—Inspector-General of Civil Hospitals, United Provinces, India, Naini Tal, Isis.

**J.**—Sir Alfred L. Jones, Liverpool; Dr. W. M. M. Jackson, St. Leonards-on-Sea.

**K.**—Mr. R. C. B. Kerin, Lond.; Professor Henry Kenwood, Lond.; Kent County Asylum, Maidstone, Clerk to the; Messrs. R. A. Knight and Co., Lond.; Messrs. Kutnow and Co., Lond.

**L.**—Mr. H. K. Lewis, Lond.; Leicester Guardians, Clerk to the; Dr. A. G. K. Ledger, Darwen; Lancashire County Asylum, Winwick, Clerk to the; Messrs. Loxley, Clifford, and Co., Liverpool; Mr. H. H. Lacy, Warwick; The London (Royal Free Hospital) School of Medicine for Women, Council of; Liverpool School of Tropical Medicine, Chairman of; Locum, Lond.; Liverpool Eye and Ear Infirmary, Hon. Secretary of; Leicester Infirmary, Secretary of.

**M.**—Mr. W. Martindale, Lond.; Dr. R. B. Mahon, Ballinrobe; Dr. Hugh A. Macewen, Glasgow; Dr. D. M. MacGregor, Clayton West; Manchester Northern Hospital, Secretary of; Messrs. A. Mather and Son, Edinburgh; Manchester Royal Infirmary, Secretary of; Captain J. P. Murphy, R.A.M.C., Liverpool; M. C. W.

**N.**—Mr. A. W. Nuthall, Birmingham; Norwich Corporation, Clerk to the; Mr. J. C. Needes, Lond.

**O.**—Osborne Peacock Co., Manchester.

**P.**—Mr. Y. J. Pentland, Edinburgh; Prince of Wales General Hospital, Tottenham, Secretary of; Messrs. C. Pool and Co., Lond.; Mr. F. W. Payn, Stromsnes, Ulfsfjord, Norway; Mr. L. A. Paddon-Row, Mogok, Upper Burma; Dr. J. A. Pottinger, Port Elizabeth; Pharmaceutical Society of Great Britain, Lond., President of.

**R.**—Dr. Nathan Raw, Liverpool; Mr. W. C. Rivers, Northwood; Messrs. Rebman, Lond.; Messrs. Reynolds and Branson, Leeds; Mr. S. H. Rentsch, Birmingham; Dr. N. Rivellini, Pontelandolfo; Royal Photographic Society of Great Britain, Lond., Secretary of; Mr. R. Reid, Irvine; Mr. Herbert J. Robson, Leeds.

**S.**—Mr. C. Salpius, Berlin; Miss C. Spicer, Woodford Green; Messrs. G. Street and Co., Lond.; Society for the Study of Inebriety, Lond., President and Council of; Dr. Walter Summons, Carlton, Victoria, Australia; Sheffield Union, Clerk to the; Salford Royal Hospital, Secretary of; The Safety Non-Explosive Reservoir Co., Lond.; Miss Slater, Plymouth; Scholastic, Clerical, &c., Association, Lond.; Dr. S. G. Scott, Leeds; The "Sanitas" Co., Lond., Chairman of; Dr. E. I. Spriggs, Lond.

**T.**—Miss Alice Taylor, Edinburgh; Dr. J. Lewes Timmins, Lond.; Taunton and Somerset Hospital, Secretary of; Mr. B. H. Thwaite, Lond.; Mr. Frank C. Thomas, Stretford.

**U.**—Under Secretary to Government, United Provinces, India, Naini Tal.

**V.**—Messrs. J. W. Vickers and Co., Lond.

**W.**—Mr. J. T. Ainslie Walker, Lond.; Inspector-General Thos. E. H. Williams, R.N., Belford; Messrs. J. Wright and Co., Bristol; W. S.; Messrs. F. Williams and Co., Lond.; Messrs. John Wiley and Son, New York; Worcester County Asylum, Powick, Medical Superintendent of; W. H. M.; Messrs. H. Wilson and Son, Lond.; Dr. Arthur Waddell, Potters Bar; Dr. R. J. Willan, Newcastle-on-Tyne.

## Letters, each with enclosure, are also acknowledged from—

**A.**—Miss Anderson, Dundee; A. M.; A. Z, West Ealing; Dr. E. E. Allway, Reading; A. G. M.

**B.**—Dr. E. R. Bowen, Bargoed; Messrs. J. H. Booty and Son, Lond.; B. R., Kew Gardens; Mr. A. Baxendell, Aldershot; Dr. R. Bine, Heidelberg; Surgeon J. C. Bringan, R.N., Gillingham.

**C.**—Dr. J. Carruthers, Uddingston; Miss S. Campbell, Todgarh; Dr. J. Clarke, Dunoon; Dr. W. Cooper, Hereford; C. S; C. S. A.; Carlow District Asylum, Clerk to the; Messrs. Callard and Bowser, Lond.

**D.**—Messrs. Deacon and Co., Lond.; Messrs. A. De St. Dalmas and Co., Leicester; Miss Daniel, Reading; Douglas Park Medical Journal, &c., Club, Chicago, Secretary of; Mrs. D.; Dr. W. Dougal Pittenweem.

**E.**—East Suffolk and Ipswich Hospital, Secretary of; E. K. C.

**F.**—Mr. G. Fock, Leipzig; F. T.; Mr. W. J. Furnival, Stone.

**G.**—Mr. W. Gilbert, Huddersfield; G. A. S.; G. B.; G. B. M.; Dr. W. C. Gavin, Menai Bridge.

**H.**—Dr. W. J. Howarth, Derby; Dr. W. C. Hayward, Dundee; Messrs. Hastings Bros., Lond.; H. O. H.; H. S.; H. O. B.; H. M.; Mr. J. Heywood, Manchester; Messrs. Abel Heywood and Son, Manchester.

**I.**—Messrs. Ingram and Royle, Lond.

**J.**—Dr. A. H. James, St. Buryan; Mr. J. H. Jeans, Eastbourne; Jersey Dispensary, &c., Secretary of; J. G. T.; J. W. G.; J. R.

**K.**—Dr. Kenyon, St. Leonards-on-Sea; Kathiawar, India, Agency Surgeon of; Kurnool, India, District Medical Officer of.

**L.**—Mr. A. Lee, Woodhall Spa; Leicester Corporation, Treasurer of; Mr. A. Leckie, Lond.; Mr. C. A. Little, Hull; Miss Leech, Lond.; Lanark District Asylum, Hartwood, House Steward of.

**M.**—Mr. F. H. Moore, Prees; Dr. M.; Medicus, Harrogate; M. D., Grantham; M. C.; Messrs. MacMillan and Co., Lond.; Medicus, Sheffield; Messrs. H. Marshall and Son, Lond.; Messrs. C. Mitchell and Co., Lond.

**N.**—Mr. F. W. North, Grantham; Nurses' Co-operation, Lond., Secretary of; Mr. G. Newport, Lond.

**P.**—Mr. F. E. Potter, Lond.; Mr. E. W. Pilbeam, Brighton; Messrs. G. Philip and Son, Lond.; Messrs. P. Bhairaua Prasad Bros., Sanawar, India; P. S.

**R.**—Mr. J. A. Radcliffe, Leeds; Messrs. Reitmeyer and Co., Lond.; Mr. A. Roche, Dublin; Dr. W. Robertson, Bunbury; Messrs. Ryder and Bowyer, Southampton; "Roden," Rugby; Royal Berkshire Hospital, Reading, Secretary of.

**S.**—Dr. H. F. Shorney, Lond.; *South Wales Argus*, Newport; Mr. W. M. Schofield, Liverpool; Mr. J. H. Spreat, Bath; S. H. G.; Surgeon, Chiswick; S. D. S.; Surgeon, St. Helens; S. F. L.; Messrs. Savory and Moore, Lond.; Messrs. Sharland and Co., Lond.; Stretton House, Church Stretton, Medical Superintendent of; Southport Infirmary, Secretary of.

**T.**—Mr. H. Taylor, Llandovery; Messrs. Toler Bros., Lond.; T. J. F.

**V.**—V. D. M. H.

**W.**—Mrs. Wysard, Lond.; W. D. E.; Dr. W. N. West Watson, Birmingham; W. E. F.; W. B. K.; W. J. H. M; W. V. R.; West Herts Infirmary, Hemel Hempstead, Secretary of.

EVERY FRIDAY. PRICE SEVENPENCE.

# THE LANCET.

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 4 6 |
| | Every additional Line | 0 0 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris**

# An Address

ON

# SOME PROBLEMS IN CONNEXION WITH THE SUPRARENALS.

*Being the Address in Medicine delivered at the Meeting of the Canadian Medical Association at Montreal on Sept. 12th, 1907,*

By H. D. ROLLESTON, M.D. Cantab.,
F.R.C.P. Lond.,

PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

Gentlemen,—First let me express my sincere gratitude for the high compliment which you have paid me in asking me to give the Address in Medicine. The subject matter of an address in medicine must always be a source of some anxiety to those intrusted with the honour. It may either be on general lines and deal with the history, recent advances, future, and relations of medicine, or it may be more special and deal with a single subject. Each course has its own disadvantages, but after some consideration I have decided on a special subject and I must beg your indulgence for the following review of some problems in connexion with the suprarenal glands.

As is well known the suprarenals are composite glands consisting of two portions which are distinct from a developmental and from a physiological point of view—the cortex derived from cœlomic epithelium on the Wolffian ridge and closely related to the genital glands, and the medulla derived from the sympathetic and neuro-ectodermal in origin. These two portions are separated from each other in elasmobranch fishes, the cortical cells forming the single inter-renal gland and the medullary cells a series of paired bodies connected with the sympathetic (Swale Vincent).

### The Cortex.

The cortex is larger than the medulla and is composed of epithelial cells the structure of which suggests a high degree of functional activity; in Biedl's hands experimental removal of the cortex, the medulla being left intact, was followed by death of the animals; and it is stated that compensatory hypertrophy of accessory suprarenals, when this occurs after excision of the main glands, is solely cortical. These considerations strongly suggest that the cortex has some important function and that it is essential to life, but in what exact way is as yet unknown. The most certain point about the cortex is that it is quite unlike the medulla. Its cells contain fat and lecithin but do not give a green colour with ferric chloride (Vulpian's reaction) or a brown colour with chromic acid as the chromaffine cells of the medulla do. Physiologically extracts of the cortex are quite inactive and do not raise the blood pressure. Our knowledge as to the function of the cortex is very imperfect, but some arguments can be adduced in favour of each of the three following views—namely, that it may be concerned (1) with growth and development, especially of the sexual organs; (2) with neutralising poisons; or (3) in some manner with the internal secretion of the medulla—adrenalin.

1. *The relation of the cortex of the suprarenals to growth and development, especially of the sexual organs.*—It is now known that there is a definite group of cases in young children, the peculiar feature of the cases being that a primary tumour of the suprarenal body (hypernephroma, mesothelioma) (Woolley[1]) is associated with excessive development of the organs of generation, hair, and fat. Bulloch and Sequeira[2] have collected ten cases, all but two under eight years of age, two in males and eight in females, showing this precocious development in association with a hypernephroma which, in some of the cases at any rate, was derived from the cortex of the suprarenal; further researches will naturally be directed to determining whether hypernephromas of cortical origin are, as suggested here, specially associated with exaggerated growth, while hypernephromas arising in the medulla of the suprarenal show no such association. Bulloch and Sequeira have indeed collected 12 cases of hypernephromas in children who did not show any signs of premature development and in some of these cases the tumours, described as sarcomas or lymphosarcomas, were definitely regarded as arising from the medulla of the gland. It must, however, be noted that in adults cortical hypernephromas, which are probably more often seen in the kidney (renal hypernephromas or "adrenal rest" tumours) than in the main adrenal gland, are not associated with the notable genital development, hirsuties, and obesity seen in children. As rare exceptions to this rule attention may be directed to Thornton's[3] case of a woman, aged 36 years, who was covered all over with black silky hair and had to shave her face, and to a somewhat similar case in a female lunatic, aged 32 years (Richards[4]). In passing it is interesting to note the rarity of renal tumours of adrenal origin in children as compared with the incidence of these tumours in adults and with the incidence of hypernephromas in early life. But although excessive genital development and growth of hair in a child should always suggest the existence of a cortical hypernephroma, it must be remembered that these striking signs may exist without any such lesion in the suprarenals (Guthrie and Emery).[5] As bearing on the connexion between exaggerated cellular growth of the suprarenal cortex and the development of the genital organs, a few cases are on record in which suprarenal hyperplasia has been found in individuals with such excessive size of the clitoris that they were erroneously regarded as males. Further, enlargement of the suprarenals has been noted in animals during periods of sexual activity and pregnancy, and it has appeared to me that there is a close resemblance between the cells of the suprarenal cortex on the one hand and the luteal cells normally found in corpora lutea and exceptionally in luteal cysts on the other hand. This resemblance both histologically and morphologically has been insisted on by Mulon[6] who, from observations on guinea-pigs, speaks of the corpus luteum of pregnancy as a temporary cortical suprarenal. It is interesting to compare these developmental anomalies accompanying some cortical hypernephromas with acromegaly which is usually associated with hyperplasia or adenomatous change in the anterior lobe of the pituitary gland. For, as Schäfer and Herring[7] point out, the anterior lobe of the pituitary and the cortex of the adrenal are alike in several particulars—namely, in the glandular character of their epithelium, in the physiological inactivity of their extracts, and in ensheathing collections of neuro-ectodermal cells (the posterior or infundibular lobe, and the adrenal medulla) which, on the contrary, possess extremely active physiological extracts. As bearing in a somewhat remote manner on the relation of the suprarenal cortex to the growth of the body it may be mentioned that evidence is accumulating to show that primary malignant growths of the cortex, like primary carcinomas of the thyroid, have a special tendency to produce metastases in bone (Scudder).[8] This similarity to the thyroid is of interest in the light of the well-established influence of the thyroid on skeletal growth.

Conversely, hypoplasia of the suprarenals has been found in anencephalous monsters; but the relation between the two developmental abnormalities is doubtful, Zander[9] regarding the lesion of the nervous system as primary and Alexander[10] considering the suprarenal defect as primary. Very possibly, however, the failure of development is concomitant; in any case this association is not a strong argument in support of the influence of the suprarenal cortex on the growth of the body, for the hypoplasia of the suprarenals appears to affect the cortex and medulla equally and not to be specially marked in the cortex. Hypoplasia of the suprarenals has been met with in a few cases of retarded sexual development, and in their case of osteogenesis imperfecta Lovett and Nichols[11] found the internal organs normal with the exception of the small size of the suprarenals. The view has been put forward, but without any real proof, that mollities ossium is the result of suprarenal inadequacy.

---

[1] Woolley: Transactions of the Association of American Physicians, 1902, vol. xvii.

[2] Bulloch and Sequeira: Transactions of the Pathological Society of London, 1905, vol. lvi., p. 189.

[3] Thornton, K.: Transactions of the Clinical Society of London, 1890, vol. xxiii., p. 153.

[4] Richards, O. W.: Guy's Hospital Reports, 1905, vol. lix., p. 225.

[5] Guthrie and Emery: Transactions of the Clinical Society of London, 1907, vol. xl.

[6] Mulon, P.: Comptes Rendus de la Société de Biologie, Paris, 1906, vol. lxi., p. 272.

[7] Schäfer and Herring: Philosophical Transactions of the Royal Society, London, 1906, vol. cxcix., p. 27, Series B.

[8] Scudder, C. L.: Publications of the Massachusetts General Hospital, 1907, vol. i., No. 3, p. 82.

[9] Zander: Ziegler's Beiträge, 1891, Band xi., S. 145.

[10] Alexander: Ibid., 1890, Band vii., S. 441.

[11] Lovett: Brit. Med. Jour., 1906, vol. ii., p. 191.

There thus appears to be evidence that in some instances pathological changes in the cortex of the suprarenal glands, whether in the direction of hyperplasia or of imperfect development, are associated with similar conditions of growth generally and especially of the genital organs.

2. *The question whether the suprarenal cortex has the power of neutralising toxins* is a subject about which very little is known and on which it is dangerous though attractive to speculate. It was formerly thought that the suprarenal bodies destroyed effete blood pigment, but this conception has been given up for want of proof. That the cortex may exert antidotal properties is suggested by Myers's[12] observations that cobra poison after being mixed with an emulsion of the suprarenal cortex was no longer toxic, control experiments with emulsions of the suprarenal medulla and of other organs being negative. Experimental infections with various organisms, such as bacillus tuberculosis, slow diphtherial intoxication, and lead poisoning (Gouget[13]), have been found to give rise to hypertrophy of the cortex of the adrenal glands, thus suggesting increased functional activity. It may be mentioned incidentally that, according to Mulon,[14] the histological evidence of over-activity (*hyperépinéphrie*) of the cortex is increased pigmentation and diminished fat in its cells.

Adenomas or nodular hyperplasia of the suprarenal cortex are found in a certain number of necropsies. In 6200 necropsies at St. George's Hospital, London, adenomas were present in 11 cases, or 0·2 per cent. (Hodge), and at Guy's Hospital in 0·7 per cent. of necropsies (Richards). They are sometimes found in cases of chronic pulmonary tuberculosis, but special attention has been drawn to the association of cortical adenomas with granular kidneys and high blood pressure, and it has been pointed out that they are rare in cases of chronic nephritis with low blood pressure. There would therefore appear to be some relation between their presence and high arterial blood pressure; as the cortex does not contain any pressor substance it cannot be held that the cortical hyperplasia causes the increased pressure, and it has been suggested that the adenomas are evidence of an attempt on the part of the cortex to neutralise the toxins responsible for the high blood pressure (Aubertin and Ambard[15]). As bearing on this it may be mentioned that it is stated that experimental lesions of the kidney lead to hyperplasia of the adrenals (Darré[16]). The main interest of the speculation as to the existence of antitoxic function in the cortex of the adrenal glands is in connexion with the pathogenesis of Addison's disease. The low blood pressure and extreme asthenia in that disease can be satisfactorily explained as due to an absence of adrenalin or the pressor substance provided by the medulla, but the vomiting, gastro-intestinal disturbance, and the pigmentation suggest irritation of the sympathetic. This has, in the past, usually been attributed to invasion of the adjacent sympathetic by inflammatory changes and adhesions, or to mechanical stimulation of these nerve plexuses by tuberculous masses in the adrenal glands, but this explanation breaks down for cases in which the adrenals are only atrophied. To meet this objection it has been supposed that the absence of adrenalin leads, by perverted metabolism, to a toxæmic state, and that this toxæmia accounts for the irritative manifestations. On the other hand, Addison's disease might be regarded as the outcome of total suprarenal inadequacy—namely, of (*a*) medullary inadequacy which, by the absence of adrenalin, accounts for asthenia and low blood pressure, and of (*b*) cortical inadequacy, which accounts for the irritative symptoms by failure of an antitoxic function exerted by this part of the organ. It is conceivable that, owing to destruction or atrophy of the cortex, there is no longer neutralisation of toxic bodies and that these accumulate and irritate the sympathetic. In this connexion it may be pointed out that the widespread distribution of pigmentation is more readily explained by a general toxæmia than by a local irritation of the sympathetic. It may also be urged in favour of this hypothesis that it explains why suprarenal extract so commonly fails to cure Addison's disease in the same way that thyroid extract counteracts myxœdema; for although suprarenal extract provides the wanting adrenalin, the extract of the cortex, even when given, is not necessarily the equivalent of the activities of the living cells of that tissue.

3. *That the cortex is in some way concerned with the internal secretion of the medulla.*—Although it does not contain any pressor substance, it is conceivable that the cortex plays an essential part in the early stages of the formation of adrenalin and that the process of elaboration is completed in the medulla, in which part alone the full activity of the secretion is acquired. In favour of this hypothesis Schäfer and Herring[17] point out the analogy between the pituitary and the suprarenal glands. In both, the glandular epithelial parts (anterior lobe and cortex) are inactive, while the neuro-ectodermal parts (infundibular portion and medulla) yield a highly active extract. The close anatomical relation of the epithelial and neuro-ectodermal parts in the two glands suggests that their physiological relation may be equally close.

We have thus seen that three views at least have been put forward as to the function of the cortex: (1) that it is connected with growth, especially of the sexual organs; (2) that it is antitoxic; and (3) that it plays some part in the elaboration of the internal secretion of the medulla. *A priori* it would appear improbable that the cortex discharges all these three functions, but from experiments on animals Marrassini[18] has put forward the view that the three zones of the cortex—zona glomerulosa, zona fasciculata, and zona reticularis—have different functions; this is little more than a suggestion, but it shows the need of waiting for further investigation. The most definite point about the cortex would appear to be that it is co-related with sexual growth.

## THE MEDULLA.

The cells of the medulla provide a pressor substance—adrenalin—which acts on the sympathetic nerve endings. These cells, called chromophil or chromaffine from their affinity for chromic acid, are not confined to the medulla of the suprarenal glands but are found elsewhere in contact with the sympathetic, as Zuckerkandl's parasympathetic bodies, the inter-carotid gland which has been described as an accessory medullary adrenal (Mulon[19]), Luschka's coccygeal gland, and some collections of cells in the pituitary body. The medulla of the suprarenals therefore forms the most conspicuous part but not the whole of what has been called the hypertensive glandular system. The importance of this conception is that it explains why cases with destruction of the medullary portions of the adrenals do not always manifest the symptoms of Addison's disease, the remainder of the chromaffine system being sufficient to supply the required amount of adrenalin; conversely in some cases of Addison's disease in which the medulla of the suprarenals is not obviously affected. the hypertensive system, as a whole, may conceivably be deficient. The possible pathological relations of the internal secretion of the medulla may be divided into (I.) alteration in quantity, (*a*) absence, (*b*) diminution, and (*c*) excess; and (II.) alteration in quality.

I. *Alteration in quantity.*—(*a*) Complete absence of the internal secretion is met with in Addison's disease as is proved by the inactive condition of the medulla when tested physiologically. It has also been shown that the suprarenal medulla may be devoid of adrenalin in patients dying from chronic exhausting diseases, and that though there is often obvious naked-eye change in the glands this is not an invariable accompaniment of the loss of functional activity (Mott and Halliburton). As bearing on the interesting question whether there is normally an equilibrium between the pressor or hypertensive internal secretions of the medulla of the suprarenals and of the other collections of chromaffine cells on the one hand and the depressor internal secretion of the thyroid on the other hand, it may be pointed out that in Addison's disease a relative excess of the internal secretion of the thyroid might be expected on account of the absence of adrenalin. There is, however, no evidence of this in Addison's disease; there are no symptoms resembling those produced by overdoses of thyroid extract or thyroidism, and so far as this goes it would appear that if there be normally a balance between the internal secretions of the suprarenal and thyroid glands, this balance is partially maintained, possibly by diminished thyroid secretion or by some neutralisation of the active thyroid secretion by the tissues of the body, when the internal secretion of adrenalin fails entirely. There is, of course, one manifestation common to Addison's disease and exophthalmic goitre—namely, pigmentation—but it is very difficult, in the present state of our knowledge, to explain this as the result of one and the same process in the two diseases. It is much more likely that in both cases there is over-excitation of the sympathetic nerves, in exophthalmic goitre by an excessive and abnormal thyroid secretion and in Addison's disease by a toxæmia possibly depending on inadequacy of the hypothetical antitoxic function of the cortex of the suprarenals.

---

[12] Myers, W.: Transactions of the Pathological Society of London, 1898, vol. xlix., p. 368.

[13] Gouget: Comptes Rendus de la Société de Biologie, Paris, 1903, vol. lv., p. 1659.

[14] Mulon, P.: Ibid., 1907. vol. lxii., p. 905.

[15] Aubertin et Ambard: Mémoire et Bulletin de la Société Médicale des Hôpitaux de Paris, 1904, p. 175.

[16] Darré: Thèse de Paris, 1907, quoted by Beaujard, Semaine Médicale, Paris, 1907, p. 230.

[17] Schäfer and Herring: Philosophical Transactions of the Royal Society of London, 1906. Series B, vol. cxcix., p. 27.

[18] Marrassini: Archives Italiennes de Biologie, Turin, 1906, vol. xlvi., p. 73.

[19] Mulon: Archives Générales de Médicine, Paris, 1904, p. 2543.

(*b*) Diminution in the amount of adrenalin. This may be considered under the heads of (1) chronic inadequacy; (2) acute inadequacy; and (3) relative inadequacy. (1) Chronic inadequacy. The existence of cases of larval or frustrate myxœdema has now long been recognised; the condition has also been called benign hypothyroidism. The most convincing proof of its existence in a given case is improvement after the administration of thyroid extract. Similarly there is a condition of deficient adrenalin secretion. Possibly in some cases this defect of the adrenalin-secreting cells may be congenital; and it has been suggested that the status lymphaticus and hæmophilia are thus explained (Wiesel). A condition of deficient secretion of adrenalin, or partial medullary inadequacy, is probably more commonly acquired and the result of morbid changes in the medulla. These changes may be due to tuberculous, syphilitic, or cancerous invasion secondary to disease elsewhere in the body; or to toxins conveyed from other parts of the body—for example, the lungs in cases of tuberculosis may so act on the suprarenals as to produce degeneration and fibrosis; or, again, as the result of acute infections, such as staphylococcal or pneumococcal, the suprarenals may be permanently damaged and suprarenal inadequacy be established; this sequence of events is analogous to chronic nephritis after an acute attack of nephritis. To this condition of suprarenal inadequacy the name Addisonism has been applied by Boinet,[20] who in 37 cases of pulmonary tuberculosis manifesting Addisonism found the suprarenal bodies fibrosed in 30, infiltrated with small tubercles in four, and with caseous tubercles in three. This conception has some bearing on the pigmentation which so commonly accompanies advanced pulmonary tuberculosis and often raises the question as to the existence of Addison's disease. Everyone is familiar with these cases, but as the symptoms are not sufficiently marked to justify a diagnosis of Addison's disease, the tendency has been rather to put the factor of the suprarenals aside in attempting to explain the melanodermia of advanced pulmonary tuberculosis. Since it has been shown that the suprarenal medulla may be devoid of adrenalin in exhausting diseases (Mott and Halliburton) there appears to be reasonable ground for the view that Addisonism may here be present. Boinet recommends adrenalin in these cases; in order to determine whether there is or is not suprarenal inadequacy the effect of adrenalin on the arterial blood pressure should be estimated, for O. F. Grünbaum[21] has shown that in healthy persons suprarenal extract has no effect on blood pressure, but that a rise of blood pressure after the administration of suprarenal extract indicates suprarenal inadequacy. This method of diagnosis and treatment deserves further trial. But it must be borne in mind that though low blood-pressure and asthenia may be counteracted by adrenalin, the pigmentation has not been proved to depend on want of the internal secretion of the medulla, and hence it cannot be anticipated that the administration of adrenalin will remove the melanodermia, which may, indeed, depend on a concomitant lesion of the cortex. Just as numerous symptoms have been referred to benign hypothyroidism, so it is not illogical to suppose that various conditions, characterised by low blood-pressure and debility both of the involuntary and voluntary muscles, may depend on an insufficient supply of adrenalin. Thus it has been suggested, but by no means proved, that cyclical albuminuria and forms of neurasthenia associated with low blood-pressure are manifestations of adrenal insufficiency.

(2) Acute adrenal inadequacy. It occasionally happens that death occurs suddenly in patients suspected to be the subjects of Addison's disease on account of some abnormal pigmentation, but without any definite constitutional symptoms; or that persons previously in fair health and certainly not known to have any disease suddenly become acutely ill, often with convulsions, and die rapidly from collapse. In some of these cases tuberculous disease of the suprarenal bodies is found at the necropsy and death is perhaps certified as due to Addison's disease. Though this conclusion is in the main correct it does not explain the fulminating character of the termination. It is probable that this is due to some form of acute infection attacking the suprarenal glands and leading to suppression of their functional activity, and it can easily be understood that this will occur more readily when the amount of suprarenal medullary substance available has been previously curtailed. In many acute infections, especially in diphtheria, the micro-organisms or toxins produce acute changes, such as cloudy swelling, necrosis, and leucocytic infiltration, in adrenals previously healthy. In some instances the damage is so acute that hæmorrhage occurs into the glands. This acute condition of adrenal hæmorrhage has been specially studied in children, and it has been suggested on the one hand that rapidly fatal hæmorrhagic small-pox explains some of the cases; thus, of ten recorded cases seven were unvaccinated (Riviere[22]), and on the other hand that the condition is due to food poisoning or an acute toxæmia of unknown origin and is possibly a distinct disease (Dudgeon[23]). Acute adrenal hæmorrhage may also complicate various fevers such as diphtheria, enteric, pneumonia, and erysipelas. The hæmorrhages may be punctate, infiltrating or massive, unilateral or bilateral. The most characteristic symptoms of these adrenal hæmorrhages are sudden onset with fever, violent pain in the hypochondrium radiating to the loins, convulsions, vomiting, diarrhœa, and, later, tympanites, collapse, and death within 48 hours from the onset. No doubt damage is done to the adjacent abdominal sympathetic by the hæmorrhage, and thus clinical manifestations analogous to those of hæmorrhagic pancreatitis are produced. Cutaneous purpura is sometimes associated with hæmorrhage into the adrenals, as in variola, and it would, at any rate at first sight, appear probable that the same underlying cause—toxæmia or bacteriæmia—is responsible for both sets of hæmorrhages. It has, however, been thought that the changes in the adrenals are primary and the purpura secondary (Loeper[24]), that purpura may stand in the same relation to acute destruction of the suprarenals as pigmentation does to chronic destruction (Dudgeon), and that the proper treatment is to give adrenalin. It is worth while to inquire to what extent the low blood pressure and circulatory failure seen in acute febrile diseases are the result of temporary suprarenal inadequacy, brought about by the action of bacterial toxins on the cells of the medulla of the suprarenal bodies. The action of toxins on the heart muscle cannot be questioned, but it is conceivable that some of the loss of vascular tone in fever is due to a want of adrenalin and that it is not entirely the result of the direct action of toxins on the vascular system. This question is of practical importance as bearing on the advisability of giving adrenalin in acute diseases with threatened failure of the circulation. That the amount of adrenalin in the suprarenal glands may be greatly diminished by acute disease has been shown by testing the glands physiologically (Mott and Halliburton[25]). The medulla of animals poisoned by diphtheria is devoid of adrenalin, as shown by the colour reaction with chromic acid (Elliott and Tuckett[26]), and it had previously been found empirically that adrenalin was of great value in the cardiac failure of diphtheria. An obvious objection to the administration of adrenalin in such conditions is that if it increases the peripheral resistance it will of necessity give the failing left ventricle more work to do and so be harmful rather than beneficial. I have, however, for some considerable time been in the habit of

---

[20] Boinet: Archives Générales de Médecine, 1904, vol. cxciv., pp. 2324, 2525.

[21] Grünbaum, O. F.: Transactions of the Royal Medical and Chirurgical Society, London, 1907, vol. xc.

[22] Riviere, C.: Transactions of the Pathological Society of London, 1902, vol. lii., p. 368.

[23] Dudgeon: American Journal of Medical Science, Philadelphia, 1904, vol. cxxvii., p. 134.

[24] Loeper: Cliniques Médicales de l'Hôtel-Dieu, Paris, 1906, tome v., p. 90.

[25] Mott and Halliburton: Archives of Neurology, 1907, vol. iii., p. 123.

[26] Elliott and Tuckett: Journal of Physiology, London, 1906, vol. xxxiv., p. 332.

giving adrenalin by the mouth in cases of pneumonia in adults and in bronchopneumonia in children, and, I believe, with good results; it has appeared to prevent cardiac failure and has not given rise to any bad symptoms such as œdema of the lungs. Another objection raised against this use of adrenalin is that experimentally it produces arterial degeneration; as bearing on this I have examined the aorta in a few cases in which adrenalin had been given during life and have not found any recent changes. But I do not lay any stress on this for several reasons—my observations are quite insufficient, the amount and duration of the administration of adrenalin were not comparable with those employed in the experimental degeneration, and even if recent changes were found it might be argued that they were due to toxins of the disease responsible for death. While I believe that adrenalin is a valuable circulatory tonic in acute infections, especially pneumonia, I am anxious that this point should be more thoroughly tested, especially as I have found but little increase in the blood pressure of febrile patients showing apparent improvement while taking adrenalin.

(3) Relative inadequacy of the internal secretion of the medulla. By this is meant that if there be normally a balance between the effects of the pressor and depressor glands, any excessive secretion (depressor) of the thyroid should lead, the pressor secretion maintaining the normal mean, to a relative deficiency of the antagonising internal secretion. The question that arises here is whether the symptoms of thyroidism, of exophthalmic goitre, and the allied toxic manifestations which, as Sir Victor Horsley[27] points out, may sometimes be seen in ordinary goitre are in any degree due to a relative deficiency in the secretion of adrenalin. It is clear from Janeway's[28] summary that the blood pressure is not low in exophthalmic goitre, as might naturally be expected if the disease be regarded as due to simple hyperthyroidism, and that it may be very considerably raised as the result of psychical excitement. In the few cases in which I have taken the blood pressure with a Riva-Rocci sphygmometer it has been rather above than below the normal. It is true that in some cases of exophthalmic goitre improvement has followed the administration of suprarenal extract; I have seen this myself. But it must be remembered that exophthalmic goitre often improves both spontaneously and after widely different forms of treatment, and that it has not been shown that suprarenal medication is a certain means of counteracting the symptoms of exophthalmic goitre. We have therefore no evidence that an excess of thyroid secretion produces bad effects by means of a relative deficiency in adrenalin.

(*c*) Excessive secretion of adrenalin. Here, again, very little is known. The excess might conceivably be (1) due to an excessive secretion of adrenalin by the medulla, or absolute excess, or (2) be relative and depend on a diminution in the amount of the thyroid secretion. (1) Since the demonstration that atheroma can be artificially produced in animals by the injection of adrenalin (Josué,[29] Pearce and Stanton,[30] and others) the question has arisen whether high arterial blood pressure in man and its results—hypertrophy of the left ventricle, arteriosclerosis, atrophic changes in the kidneys, and so forth—may be due to an excess of adrenalin in the circulation. As it is generally believed that in renal disease a raised blood pressure is, within limits, useful, it might be assumed that this compensatory process is brought about by hyperplasia of the suprarenal medulla. Let us see how the evidence available bears on this question. From some experiments on animals Marrassini[31] concludes that interference with the renal excretion increases the functional activity of the medulla. A case of parenchymatous nephritis with great hypertrophy of the left ventricle and manifest hyperplasia of the medulla of the suprarenals has been reported (Vaquez and Aubertin)[32] and might be taken to support this view. But as regards this special form of renal disease this would appear to be almost an isolated observation. Wiesel[33] has recorded a number of cases of high blood pressure, arteriosclerosis, and granular kidney, associated with enlargement of the suprarenal medulla and also of the chromaffine cells in the solar plexus. Here it might at first sight be thought that the suprarenal change was the cause of the high blood pressure and of the structural changes, as in experimental atheroma. It has, it is interesting to note, been suggested (W. Russell)[34] that certain foods, especially proteins, may lead to increased secretion of adrenalin. It would thus be possible to construct a hypothesis of dietetic excess, absorption from the intestine of toxic bodies which stimulate the medulla of the suprarenals to increased functional activity followed by hypertrophy, and that subsequently the cardio-vascular changes are produced. But Wiesel believes that the cardiac hypertrophy precedes the hyperplasia of the suprarenal medulla and is not due to it. This relation between the sequence of events must be somewhat difficult to determine and the subject is in need of further study. At present there is no proof of the existence of any disease due to excessive adrenalin secretion and corresponding to exophthalmic goitre in the case of the thyroid, but on this point we must be content to wait for further information.

(2) Relative excess due to a deficiency in the amount of antagonising depressor internal secretion. It is conceivable that, as the result of the atrophy of the thyroid which so commonly accompanies advancing years, the equilibrium normally existing between the internal secretions of the thyroid (depressor) and of the adrenal medulla (pressor) would no longer be maintained and that an excess of adrenalin would therefore accumulate in the circulation and thus induce a correspondingly high arterial pressure. In other words, that the rise of arterial blood pressure as life advances is due to a predominance of the pressor internal secretions. In support of this it might be urged that in myxœdema it is common to find arterio-sclerosis and granular kidney, which may result from long-continued high blood pressure; but too much stress must not be laid on this, for the age of myxœdematous patients approaches that at which vascular degeneration is common, and in a certain number of cases of myxœdema the kidneys are healthy.

To return again to the question whether the hypothetical equilibrium between the depressor and pressor internal secretions may be upset by a deficiency of one, so that the other secretion has a paramount influence, Gioffredi's[35] conclusions are to the effect that normally certain organs and tissues—the liver, the blood, and to a less extent the voluntary muscles—transform adrenalin into an inactive product and so protect the body against the toxic results of an excess of adrenalin which might otherwise result. In order to effect this change the blood must be provided with oxygen and be alkaline, but those conditions are not necessary in the case of the liver and voluntary muscles. It is conceivable that such a compensatory mechanism might fail under the same conditions as those under which the thyroid secretion wanes, and that then a relative excess of adrenalin in the circulation would result. These considerations are highly speculative, but they may perhaps be forgiven because they bear in a somewhat remote manner on an important practical point—namely, the prevention and reduction of the rising arterial pressure of advancing years. For they suggest that the administration of thyroid extract might have this desired result and that it may prove to be the routine treatment. Iodides, which are so widely given in clinical medicine in order to lower blood pressure, have been shown to have no depressing effect on the heart or blood pressure (Stockman and Charteris[36]), but it is conceivable that they eventually lower blood pressure by stimulating the thyroid to an increased secretion.

II. *Alteration in quality.*—Of alterations in the quality of secretions very little is known if we except the gastric juice, but it is reasonable to believe that in the future this factor will attract attention and be shown to have most important pathological bearings. The adenomatous changes in the thyroid in exophthalmic goitre and in the pituitary body in acromegaly may safely be assumed to lead to an altered internal secretion, and so to have a causal bearing on the associated diseases. In the case of the adrenal medulla nothing is known as to any alteration in the quality of the secretion. It is somewhat wild speculation, but it may be mentioned for what it is worth, that possibly intestinal toxins may so act on the cells of the adrenal medulla as to produce an internal secretion of such an abnormal character that the normal process of transformation of any excess into an inactive body, as suggested by Gioffredi, cannot be carried out by the tissues. The excess of such an abnormal adrenalin might conceivably cause high arterial pressure, arterio-sclerosis, and the allied morbid changes.

---

[27] Horsley: Clinical Journal, 1904, vol. xxiv., p 29.

[28] Janeway, T. C.: The Clinical Study of Blood Pressure, New York, 1904, p. 200.

[29] Josué, O.: Presse Médicale, Paris, 1903, p. 798.

[30] Pearce and Stanton: Journal of Experimental Medicine, 1906, vol viii., p. 74.

[31] Marrassini: Archives Italiennes de Biologie. Turin, 1901, vol. xlvi., p 82

[32] Vaquez et Aubertin: Comptes Rendus de la Société de Biologie, Paris, 1907.

[33] Wiesel: Wiener Medicinisc Wochenschrift, 1907, vol. lvii., p. 674.

[34] Russell, W.: Brit. Med. Jour., 1904, vol. i., p. 1299.

[35] Gioffredi: Archivio de Farmacologia Sperimentale, 1907, p. 145.

[36] Stockman and Charteris: Brit. Med. Jour., 1901, vol. ii., p. 1520.

# An Address

ON

# THE PREVENTION OF MALARIA IN BRITISH POSSESSIONS, EGYPT, AND PARTS OF AMERICA.

*Delivered in Section VII. of the Fourteenth International Congress of Hygiene and Demography held at Berlin, September, 1907,*

### By RONALD ROSS, C.B., F.R.C.S. Eng., D.P.H., F.R.S.,

PROFESSOR OF TROPICAL MEDICINE, UNIVERSITY OF LIVERPOOL.

## I.—Preliminary.

Almost exactly ten years have now elapsed since the parasite of malaria was first detected in anophelines. This discovery, confirmed and amplified in many countries, suggested many methods for the prevention of the disease; but unfortunately, although science may indicate methods of prevention, local Governments are not always willing to undertake the trouble and expense required for the work. It is very advisable, then, to examine how much various Governments have actually done during this period in several parts of the world to preserve mankind from the vast amount of sickness and mortality occasioned by so widespread a malady and to consider what action may be taken to encourage more energetic efforts in the future. In attempting this task, however, I propose to confine my remarks to those countries in which the progress of events is best known to me—that is, principally to the tropics; but at the same time fear that I must give the history in considerable detail, without which my conclusions will not perhaps be as clear to others as they seem to be to myself.

In 1897-99 I was able to observe in several parts of India that numerous species of anophelines (in two of which I had previously cultivated the crescent-bearing parasites) breed mostly in natural collections of water lying upon the surface of the ground, and not, as many other common varieties of gnats do, in vessels and cisterns.[1] This fact at once suggested the full explanation of the laws known from the time of the ancients—that malaria is generally connected with terrestrial water, and may be reduced by drainage. But at the same time, while it re-established the old prophylaxis by drainage, it rendered it more simple, cheap, and yet precise. No longer driven to the expensive task of draining the whole expanse of a malarious area, we were now able to confine our operations, often with a great saving of money, only to those particular pools which are suitable for the larvæ of the insects, and which in many places I had already observed to be comparatively few and small. Consequently I did not hesitate to advise the Government of India (in a report dated Feb. 16th, 1899) to adopt this important measure in the principal malarious towns and military stations.[2 3] At the same time, as already empirically known, the use of mosquito nets during sleep was obviously a valuable means of personal prophylaxis. Shortly after writing this report I left India, and a few months later (July, 1899) proceeded with two colleagues, Dr. H. E. Annett and Mr. E. E. Austen, to the British colony of Sierra Leone, where we hoped to indicate more exactly the details of this perfected system of drainage-prophylaxis. We immediately ascertained by my methods previously elaborated in India that *Pyretophorus costalis* and *Myzomyia funesta* carry all the species of the parasites of man in that part of Africa; that these mosquitoes breed principally in small but numerous collections of water on the ground; and that it would be a comparatively easy task for the authorities, with all the resources at their disposal, to remove these breeding-places within the city of Freetown and thus to reduce the mosquitoes and the malaria together. In order to help them in this task we indicated for the first time the peculiar attitudes of the anopheline larvæ and adults which enable anyone to recognise them at sight; the special characters of the pools in which they breed; and the exact methods by which these pools should be dealt with; and we furnished them with a complete map of the principal breeding places. Our reports gave the original full exposition of the antimosquito prophylaxis of malaria, which since then has become the basis of all such work in many parts of the world.[4 5] Not being authorised, however, to undertake the work ourselves, all we could do was to advise, and we then returned to England hoping that the Government would act upon our suggestion.

In the meantime my Indian researches had been followed with enthusiasm in Germany and Italy. In the autumn of 1898 Koch and the Italian observers, who had made so many beautiful studies of the subject, were able to confirm and to extend the original investigations. They immediately suggested another great system of malaria-prophylaxis—that by quinine. It was argued that if all the persons in a community who suffer from malaria are sought out and efficiently treated with quinine the parasites will diminish so greatly within the community that the mosquitoes, however numerous they may be, will no longer become infected, and will so cease to convey the infection to healthy persons. Without delay, the Germans, led by Koch, and the Italians, led by Celli, sought to give practical effect to this logical suggestion. At the same time, Celli especially advocated the general protection of houses by means of screens of wire gauze.

It is not my function to-day to follow the labours of these distinguished workers. The problem in malarious British colonies, which are mostly tropical and inhabited by dark races, is not the same as in Italy—a fact which is often forgotten by academical sanitarians. Such races cannot easily be persuaded to submit to continued medication by quinine and are much too poor to provide screens for their houses, and even Europeans in the tropics frequently reject both measures with obstinacy. On the other hand, drainage-prophylaxis demands no such compliance from the public. As I have frequently pointed out,[6] local authorities can drain, or otherwise treat, anopheline pools without asking the consent of any one. The people are not required to take any drug for months, or to pay for expensive appliances to their windows. Moreover, mosquito reduction tends to remove yellow fever and filariasis as well as malaria, banishes a source of constant personal irritation, and, no less important, compels local sanitary departments to keep a close watch on all parts of the area in their charge. On the other hand, of course, we cannot expect drainage to be undertaken everywhere, in the open fields or the wilderness; it is principally applicable to towns—that is, to places where the money spent upon it is likely to benefit the largest number of people; for the camp, the farm, the plantation, the isolated house, and the petty hamlet the other measures must frequently be fallen back upon. As a rule, however, for tropical towns mosquito reduction where it is possible has always promised to be the most useful and, in the end, the most economical system of all; and, of course, the other measures may often be adopted, at least partially, in addition. Thus the ideal procedure for towns in the tropics consists (1) in the removal of mosquito-breeding waters; (2) in the treatment of old cases of malaria with quinine; and (3) in the protection, as an additional safeguard, of hospitals, barracks, jails, and as many houses as possible with wire gauze. To these we must add, as insisted upon by Stephens and Christophers, the principle of segregation for Europeans.

But however desirable mosquito reduction seemed to be, my proposals to adopt it were everywhere met at first with objections. One objection was that the breeding waters must be so numerous that their suppression would be too costly an undertaking, even in towns; and those who held this view forgot that to exsiccate a town would generally be a far less formidable engineering task than to give it a pipe water-supply or a sewerage system, while in dry climates it might prove a very easy task indeed. Another objection, and a still more extraordinary one, was that local mosquito reduction would be useless owing to the immigration of mosquitoes from outside. This is as much as to say that the population of an area would not be decreased by the abolition of the birth-rate within that area; but in spite of the unreasonableness of the objection it was repeated everywhere for years and did not disappear until it was dealt with mathematically, first by myself,[7] and then more fully by Professor Karl Pearson and Mr. J. Blakeman.[8] Repeated over and over again, in spite of the clearest disproof, these objections have done much to check anti-malaria work throughout the world and have also been often used, I fear, to cover the inertia or indifference of officials.

---

[1] Ross: Instructions for the Prevention of Malarial Fever, Liverpool School of Tropical Medicine, Memoir I., 1899; and Researches on Malaria, Nobel publication, 1902, Stockholm; German translation, Gustav Fischer, Jena.

[2] Ibid.: Extermination of Malaria, Indian Medical Gazette, July, 1899.

[3] Ibid.: The Possibility of Extirpating Malaria from Certain Localities by a New Method, Brit. Med. Jour., July 1st, 1899.

[4] Correspondent (Ross): The Malaria Expedition to Sierra Leone, Brit. Med. Jour., Sept. 9th, 16th, and 20th, and Oct. 14th, 1899.

[5] Ross Annett, Austen: Report of the Malaria Expedition to West Africa, Liverpool School of Tropical Medicine, Memoir II., 1900.

[6] Ross: Mosquito Brigades. George Philip and Son, London, 1902.

### II.—Campaigns in West Africa.

I will now proceed to describe briefly the progress of events as known to me. As already stated, in 1899 I visited Sierra Leone with two colleagues and advised the authorities exactly regarding the best means of reducing malaria in the capital, Freetown. Immediately after this visit the Liverpool School of Tropical Medicine despatched, on my advice, a number of gentlemen, Dr. R. Fielding-Ould, Dr. Annett, Dr. J. E. Dutton, and Dr. J. H. Elliott, to various West African Colonies (British Gambia, Sierra Leone, Gold Coast, Lagos, and Nigeria) in order to make similar studies. Later the Royal Society sent, also on my advice, Dr. J. W. W. Stephens and Captain S. R. Christophers, I.M.S., so that by 1901 a fairly accurate survey of the malaria was made in many towns along that deadly coast and measures for prevention were formulated.[9] In most cases it was comparatively easy to take these measures. Thus in Sierra Leone our suggestions of 1899 were not really difficult. The town contains only about 30,000 inhabitants; and though, owing to the large rainfall, to a rocky substratum to the soil, to numerous flat areas, and to the existence of many badly-constructed surface drains and gutters, there were many anopheline pools, yet almost all of these were so small that a little cutting or filling up with gravel or concrete, would suffice for their abolition. I suppose that £20,000 would have paid for the exsiccation of the whole town, with an annual maintenance expenditure of, say, £500; but a great deal of good could have doubtless been effected with much smaller funds. For example, many of the holes in the soil, which were the principal source of the anophelines, could have easily been filled up by small gangs of labourers working constantly under the local municipal engineering and sanitary departments, without any elaborate general drainage scheme. Considering that the whole prosperity of the place, long known as the "white man's grave," had been checked by the malaria, we had reason to hope that at least some serious consideration would be given to our suggestions.

For a year and a half after our departure, however, little appears to have been done. We heard that one man had been employed to treat the pools but that his services had been dispensed with later. At this time the objections to prophylaxis by mosquito reduction were being so loudly uttered by those who had not sufficiently considered the matter that I felt that the whole of this invaluable sanitary policy was in imminent danger of being lost to the world, in spite of all the arguments which had been used in favour of it. For example, so good an observer as Rogers[10] said in 1901 that "Very few authorities now consider it feasible to reduce malaria materially by the destruction of anopheles"; and even at the last meeting of this Congress[11] Celli remarked that while the laboratory experiments of himself and Casagrandi for the destruction of mosquitoes were encouraging, yet "in the wide field of practice the difficulties were such that we could scarcely by this means, unless in exceptional cases, obtain in our country the suppression of malaria." Fortunately at that moment (early in 1901) a Scotch philanthropist offered me £2000 to defray the expenses of giving an object-lesson in the methods of mosquito reduction. This generous gift, augmented by several friends to the cause, was accepted with gladness and gratitude, and I determined to return at once to Sierra Leone and to commence, myself, the measures which I had previously recommended. Of course it was not possible that with £2000 I could actually succeed in ridding Freetown of malaria, but I hoped at least to demonstrate the feasibility of the measures, and trusted that when they were once begun the local government would not hesitate to continue them. Accordingly in June, 1901, I left England for Freetown with Dr. M. Logan Taylor who was to carry out the work under my general instructions.

On arrival we found everything in nearly the same condition as when I had left the Colony two years previously. Scarcely any of the breeding-pools had been done away with; owing to faulty sanitation the backyards of the houses were filled with rubbish, such as broken bottles and old tins, in which innumerable mosquitoes were propagating; the hospitals were not protected with gauze; general quinine prophylaxis was not insisted upon, even among officials; and there were no trustworthy statistics to measure the actual amount of malaria present. Dr. Taylor attacked the work with great energy, employing occasionally over 50 men at a time, to which the local authorities contributed a gang of 12 men and carts and implements. A large number of breeding-pools were rapidly dealt with; innumerable cartloads of rubbish were removed from the houses; and the people were advertised of the dangers caused by mosquitoes. Although there is no known method for estimating exactly the number of mosquitoes within a given area, we felt ourselves justified in concluding from general observation that these measures had produced a marked diminution in the insects. Dr. C. W. Daniels of the London School of Tropical Medicine inspected the work shortly after its commencement and reported (Oct. 1st, 1901): "In my opinion, already your efforts have been crowned with a large degree of success, as there has been a noteworthy diminution in the number of the first two genera" (*Anopheles* and *Stegomyia*) "found in the houses. The number of breeding grounds has been enormously diminished."[12] Dr. Taylor continued the work for the whole of the next year under the varying conditions of the wet and dry seasons and used the money at his disposal to its fullest advantage. But, as I have said, with our limited funds, our attempt was intended merely as a commencement, which, it was hoped, would be followed up energetically by the local authorities with the much greater resources which they possessed—and I stated this clearly in my report on the affair. I have no doubt that if this had been done malaria would have been practically banished from the town from that date. Unfortunately, as Dr. Taylor's time grew to a conclusion, he was obliged to report unfavourably upon this point; and we therefore determined with regret to put an end to our efforts in that colony.[13] A year later the authorities roused themselves sufficiently to ask for a public inquiry into the whole matter; but as we objected that they had probably allowed all his work to fall into abeyance in the interval the proposal was quashed. At this time, moreover, the brilliant campaign at Ismailia began to develop, and there was no longer any need for private individuals to sacrifice their time and their health in the attempt to help those who were obviously not very anxious to help themselves.

In the meantime the new ideas had been gradually gaining ground, and public prophylaxis against malaria had been started with more or less vigour in several localities. Passing over, according to my intention, the German and Italian work, I will commence with that of Sir William MacGregor, M.D., Governor of Lagos, to whom belongs the honour of having been the first British governor to comprehend the full importance of recent discoveries and to act upon them. As early as 1900 he made a careful examination of the evidence upon which they were based; and, being himself a medical man well skilled in many sciences, became quickly convinced and then determined to take action at once. Lagos is an important town of West Africa, built in the midst of lagoons and marshes and possessing a large negro population. Ably seconded by his principal medical officer, Mr. W. H. W. Strachan, Sir William MacGregor commenced by instituting numerous public lectures on the subject, and by founding a ladies' league, the object of which was to reduce the large infantile mortality by quinine. At the same time he issued an order by which the prophylactic use of the drug was made compulsory for all public servants, and led the way by taking it with regularity himself. Efforts were then made to induce all the wealthier inhabitants to screen their houses, and most of the public buildings were shortly guarded in this manner, at least partially. Next, turning his attention to drainage-prophylaxis, he filled up marshes, and dealt with the shallow margins of lakes and lagoons in which the mosquitoes bred most readily. Similar measures were ordered along the line of railway into the interior, and when I visited the colony in 1901 I was a witness of the vigour and capacity with which the work was being conducted. Unfortunately his health now began to break down and his services were soon lost to the tropics, where his great knowledge and his warm enthusiasm for the high cause of sanitation had promised to do so much. At his departure that cause suffered a blow from which it has not yet recovered.[14]

---

[7] Ibid.: The Logical Basis of the Sanitary Policy of Mosquito Reduction, Congress of Arts and Science, St. Louis, U.S., 1904, and Brit. Med. Jour., May 13th, 1905.

[8] Pearson and Blakeman: A Mathematical Theory of Random Migration, Drapers' Company Research Memoirs, University of London. Dulau and Co., London, 1906.

[9] Various Authors: Liverpool School of Tropical Medicine, Memoirs II., III., IV.; and Royal Society Reports to the Malaria Committee, July 6th and August 15th, 1900.

[10] Rogers: Journal of Hygiene, October, 1901, p. 415.

[11] Celli: Thirteenth International Congress of Hygiene and Demography at Brussels, 1903.

[12] Ross: First Progress Report of the Campaign against Mosquitoes in Sierra Leone, Liverpool School of Tropical Medicine, Memoir V., Part I., Oct. 15th, 1901. With letter by Daniels.

[13] Taylor: Ibid., Part II., Sept. 15th, 1902.

Except in Lagos, little had yet been attempted in the other West African colonies, in spite of the surveys already mentioned. But when I revisited Sierra Leone in 1901 I was able to extend my tour not only to Lagos but also to the Gold Coast and to the Gambia, and to suggest in these latter colonies campaigns similar to that projected in Freetown. To start the work, in 1902 Dr. Taylor was sent to the Gold Coast[15] and Dr. Dutton to the Gambia,[16] so that in 1903 antimalaria measures were at least commenced in all these colonies; and I hoped that a few more years would witness the salvation of that rich but unhealthy land from the plague which had so long oppressed it. I may add that in 1904, by the generosity of King Leopold, Dr. Dutton and Dr. J. L. Todd were sent to the Congo Free State to investigate and to advise there also.[17]

Unfortunately, I cannot say definitely how far our hopes have been realised. The official reports and figures[18] are not sufficiently exact and copious to enable us to judge with certainty either regarding the measures which have been taken by local Governments or of the results, if any, which have followed. It is stated[19] that malaria fever has decreased among the British troops in West Africa during 1905. The admission-rate was only 59 per cent., against 84 per cent. in 1904 and an average of 139 per cent. for the eight preceding years; and the senior medical officer remarks that the improvement is "attributed to the anti-malaria measures adopted during the last three years." But it is characteristic of these very incomplete publications that we cannot even ascertain where exactly the troops were stationed. On the other hand, we hear frequently from merchants and travellers in West Africa that the general health of Europeans has greatly improved, as shown by the decrease of death and invaliding among employees, miners, &c. For example, there has been a remarkable change, to judge from statistics kindly furnished to me by Mr. F. Shelford, in the health of men working on the Lagos railway. In the past it frequently happened that the percentage of days spent on the sick list by men employed on railway construction in West Africa was as high as even 10 or more per cent. During 1905 and 1906, however, the figure has been down as low as 1·12 per cent. and was always under 2 per cent. (on the "extensions").

### III.—Campaign at Ismailia.

Let us now proceed to consider more decisive campaigns elsewhere. But first let me refer to that great scientific discovery which gave so much indirect assistance to the prevention of malaria—the discovery of Finlay, Carter, Reed, Carrol, Lazear, Agramonte, Ross, and others, that yellow fever also is carried by mosquitoes. It is true that, though both diseases are mosquito-borne, their prophylaxis is widely different owing to the different habits of the stegomyia and the anophelines, to the rapidity of immunity in yellow fever, and to its resistance to quinine. Nevertheless, the case of the one helped the case of the other. No sooner was the stegomyia definitely incriminated at the end of 1900 than the American Government of Cuba, under General Leonard Wood, himself a medical man, set to work with a promptitude, energy, and intelligence not always visible in other Governments to use the facts which science had just placed in their hands. Except for a slight recent recrudescence, which we hope will shortly be conquered, the disease was practically swept out of the island from that date. This event occurred in 1901, just at the time when Dr. Taylor and myself were commencing our attempts at Sierra Leone. Owing to the examples so set similar campaigns now began to be started in various parts of the world. Perhaps the most classical and brilliant one was that of Ismailia commenced in 1902, which gave a complete and perfect demonstration of the possibility of banishing malaria and mosquitoes together.

The town of Ismailia was founded by the great Ferdinand de Lesseps in 1862 at a little distance from the middle point of the Suez Canal and close to the Salt Lake, Timsa. Though built in the midst of the desert, which surrounds it everywhere with its ridges of white sand like the undulations of a vast snowfield, it has nevertheless now grown to contain about 8000 inhabitants, most of whom are employees of the Suez Canal Company. Supplied with fresh water by means of a canal from the Nile, it possesses many good houses, gardens, and well-appointed streets, kept in admirable order by the officials of the company under the able and energetic President, Prince Auguste d'Arenberg, who himself resides here for many months every year. Immediately after the construction of the freshwater canal in 1877 malaria appeared for the first time in the town, which had been previously noted for its salubrity. The cases gradually increased in number until in 1886 almost all the inhabitants suffered from fever. In 1901 the President, having recognised the new discoveries, determined to employ them against this troublesome epidemic and commenced by sending a member of his highly competent medical staff, Dr. A. Pressat, to Italy to study the subject. Early next year, however, shortly after the commencement of the operations at Freetown, he invited me to go to Ismailia to advise upon the best means of attacking the disease. I arrived there in September, 1902, with Sir William MacGregor, who did me the honour to accompany me, and with Dr. Pressat on his return from Italy.[20] On our arrival we found all the officials of the company keenly alive to the importance of the work. They had already detected the anophelines in the town, had urged the general employment of mosquito nets, and had commenced an active quinine prophylaxis. On the other hand, the town was still swarming with mosquitoes. Even in the house of the President, where we were lodged, there were multitudes of culex, which we showed were being bred in the well-constructed cesspit under the house; while abundance of anophelines were found in the houses of the employees and were evidently carrying the disease everywhere in spite of the mosquito nets and the segregation of the Europeans. I felt, therefore, that here, as in other places where I had studied the subject, we should have to introduce the radical method of mosquito reduction if we wished for complete results, and I reported strongly in favour of this course. As Dr. Pressat has said, we formed "the conviction that we should establish for Ismailia a plan of campaign sensibly different from that which we had seen followed in Italy, where the campaign against mosquitoes occupied only a secondary rank—so that this destruction appeared to us to be the capital article of our programme" ([21], p. 130). We found the larvæ of the anophelines at once in various collections of water, principally in some small brackish marshes in the sand and some waters of irrigation, but happily not in the main freshwater canal, where small fish destroyed them. The campaign, conducted with intelligence and energy, presented no great difficulty. The marshes were filled up with sand, the irrigation channels were deepened or treated with oil, while the cesspits were soon rendered uninhabitable for the larvæ of culex. As Dr.

---

[14] MacGregor: Notes on Anti-Malarial Measures now being taken in Lagos, Brit. Med. Jour., 1901. Also Strachan, Brit. Med. Jour., Sept. 17th, 1904.

[15] Taylor: Report on the Sanitary Conditions of Cape Coast Town, Liverpool School of Tropical Medicine, Memoir VIII., 1902.

[16] Dutton: Report of the Malaria Expedition to the Gambia, Liverpool School of Tropical Medicine, Memoir X., 1902.

[17] Various Authors: Liverpool School of Tropical Medicine, Memoirs XIV., XV., and XX.

[18] Colonial Reports, Annual. Wyman and Sons, London.

[19] Army Medical Department. Report for 1905, p. 138. Harrison and Sons, London.

[20] Ross: Report on Malaria at Ismailia and Suez, Liverpool School of Tropical Medicine, Memoir IX., 1903.

[21] Pressat: Le Paludisme et les Moustiques. Masson et Cie, Paris, 1905.

Pressat has said,[22] he was able to effect the preliminary work with a "mosquito brigade" of only four men, "qui a tout fait." Although hundreds of men were employed later for large permanent works, this was only after the mosquitoes had already disappeared "grace à notre brigade de quatre hommes." I may perhaps be pardoned for dwelling on this fact because it fully justifies the advice which I had given more than three years previously but which had been met everywhere with scepticism. The results were most striking. It should be remembered that as nearly all the inhabitants of Ismailia were employees of the Suez Canal Company, and as no other fever was prevalent in the town, exact statistics for many years had been possible. I give the following approximate figures from Dr. Pressat's works from the time when malaria first appeared in 1877 to 1905:—

| Years. | Cases of malaria. |
|---|---|
| 1877 ... ... | 300 |
| 1878 ... ... | 400 |
| 1879 ... ... | 500 |
| 1880 ... ... | 400 |
| 1881 ... ... | 450 |
| 1882 ... ... | 480 |
| 1883 ... ... | 550 |
| 1884 ... ... | 900 |
| 1885 ... ... | 2000 |
| 1886 ... ... | 2300 |
| 1887 ... ... | 1800 |
| 1888 ... ... | 1400 |
| 1889 ... ... | 1450 |
| 1890 ... ... | 1900 |
| 1891 ... ... | 2500 |
| 1892 ... ... | 2050 |
| 1893 ... ... | 1750 |
| 1894 ... ... | 1100 |
| 1895 ... ... | 1350 |
| 1896 ... ... | 1150 |
| 1897 ... ... | 2089 |
| 1898 ... ... | 1545 |
| 1899 ... ... | 1784 |
| 1900 ... ... | 2284 |
| 1901 ... ... | 1990 |
| 1902 ... ... | 1551 |
| 1903 ... ... | 214 |
| 1904 ... ... | 90 |
| 1905 ... ... | 37 |

For more exact figures I must refer to Dr. Pressat's works. Since 1904 nearly all the cases have been relapses among persons previously infected, and last year the company officially reported that "toute trace de paludisme a disparu d'Ismailia." Of course, the treatment of old cases has constantly proceeded parallel to the antimosquito campaign. But the fortunate inhabitants have been relieved not only of malaria but of the constant annoyance caused by the insects. In 1902 we were constantly being bitten in the houses. Now, as many visitors to Ismailia have testified,[23] one can sleep there without nets. This does not imply that the insects are absolutely unknown in the town, but only that their numbers have been very greatly reduced. Absolute extirpation is scarcely possible without bonification over a very wide area, but, as mathematically shown, reduction to a small percentage is much more feasible, and there are evident logical reasons for supposing that the amount of an insect-borne disease must ultimately vary *cæteris paribus* as the square of the number of the insects. The cost of the work has been officially reported[24] as being about 50,000 francs for the original drainage and filling up of the pools, with an annual expenditure of 18,300 francs for the mosquito brigade, oil, maintenance, &c. This amounts to an initial expenditure of about 6·25 francs and an annual expenditure of about 2·3 francs per head of population—a small price to pay for the benefits given.

It has been said by the opponents of mosquito reduction that the success at Ismailia was not real, but merely consisted in the statistical transfer of cases from the heading of malaria to that of other fevers consequent on better diagnosis. This is untrue as there is no other fever there. It has also been said that the success was due to the exceptionally easy conditions at Ismailia. True, the conditions are not so difficult as in places like Panama and Sierra Leone, but I have seen many areas where they were quite as easy as in Ismailia but where nothing whatever has been done. The success at Ismailia is absolutely unquestionable. It is due chiefly to mosquito reduction and also largely to cinchonisation. We owe it entirely to the intelligence and capacity of Prince d'Arenberg and his excellent staff.

## IV.—CAMPAIGNS AT KLANG AND PORT SWETTENHAM.

Commenced even before the campaign at Ismailia, as ably conducted and almost as decisive, the work at Klang and Port Swettenham in the Federated Malay States is an equally distinguished example of the radical method of malaria reduction. Klang is a town of 3576 inhabitants (in 1901), situated on the banks of the river of the same name in the State of Selangor, on a flat, swampy area lying between the river and a semicircle of low hills. In September, 1901, as the navigation of the river to Klang presented difficulties, a new port called Port Swettenham was opened five miles down the river from Klang on an area reclaimed from mangrove swamp. The population of the two settlements together was about 4000 in 1903, while that scattered through the surrounding district was about 14,000. The rainfall averages about 100 inches (three metres) a year. The full history of the campaigns in these two towns is given in the excellent papers by Dr. M. Watson, the district surgeon, and Mr. E. A. O. Travers [25], [26], [27], [28], the State surgeon. In the latter part of 1901 malaria became very serious in both towns and, according to Dr. Watson, perhaps not more than three houses in the whole of Klang escaped infection, while the workmen at Port Swettenham began to leave the place. Dr. Watson immediately set himself to collect statistics, to observe the local anophelines, and to take the preliminary steps for the campaign. Supported by Mr. Travers and the Sanitary Board and by the intelligence and liberality of the Government, he soon obtained realisation of the recommendations of himself and his colleagues made on the lines laid down by me ([26], p. 349). At Klang work was commenced in 1901 by extensive clearing of undergrowth, followed by drainage in the next year. The swamps in the town were rapidly filled in and a contour drain to intercept the inflow from the surrounding hills was cut. At Port Swettenham forest and mangrove swamp were felled and a complete drainage scheme, prepared by the State engineer, was carried out. In both towns, pending completion of the drainage, mosquito brigades were appointed; and their employment was extended subsequently under the name of "town gardeners." When the epidemic had already begun to subside (p. 353) wire gauze was supplied to many of the houses and an active quinine distribution was commenced. All the measures have been well maintained since then.

As regards cost, Mr. Travers and Dr. Watson state that at Klang it amounted at the end of 1905 to a total of £3100, with an annual expenditure of £210 for town gardeners and of £60 for clearing drains. For this money 332 acres (134 hectares) have been dealt with, including virgin jungle, dense secondary growth, and swamp. At Port Swettenham the total cost has been £7000 to the end of 1905, with an annual unkeep of £140. For this 110 acres (45 hectares) of mangrove swamp were drained, and a considerable area has been levelled, partly to provide building sites. The cost per head of population has therefore amounted to about £1 4*s.* up to the end of 1905—a very small charge considering the heavy rainfall and the dense vegetation of the country. These towns did not possess the exact statistics of Ismailia for a long period previous to the campaign. Great credit is therefore due to Dr. Watson for the care and skill with which he has determined the results of his measures.[27] The following table is compiled from the figures given by him:—

*Results of the Antimalaria Campaign in Klang and Port Swettenham.*

(From the *Journal of Tropical Medicine*, July 2nd, 1906, by Mr. Travers and Dr. Watson.)

Population of Klang and Port Swettenham about 4000 in 1901 and now largely increased. District population 14,000 in 1901. Antimalaria campaign commenced (only in Klang and Port Swettenham) in 1902.

1.—*Cases of Malaria admitted to Klang Hospital from the Two Towns compared with those admitted from District.*

| Years ... ... ... ... | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|
| Towns ... ... ... | 610 | 199 | 69 | 32 | 23 |
| District ... ... ... | 197 | 204 | 150 | 266 | 353 |

2.—*Deaths in Klang and Port Swettenham.*

| Years ... ... ... ... | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|
| Fever ... ... ... ... | 259 | 368 | 59 | 46 | 48 | 45 |
| Other diseases ... | 215 | 214 | 85 | 69 | 74 | 68 |

3.—*Deaths Registered in District, excluding Towns.*

| Years ... ... ... ... | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|
| Fever ... ... ... ... | 173 | 266 | 227 | 230 | 286 | 351 |
| Other diseases ... | 133 | 150 | 176 | 198 | 204 | 271 |

---

[22] Pressat: Prophylaxie du Paludisme dans l'Isthme de Suez, La Presse Médicale, 30 Juillet, 1904.

[23] Boyce: The Antimalaria Measures at Ismailia, Liverpool School of Tropical Medicine, 1904.

[24] Official Report of the Compagnie Universelle du Canal Maritime de Suez. Suppression du Paludisme à Ismailia, 1906.

[25] Travers: An Account of Antimalaria Work ...... in Selangor ......, Journal of Tropical Medicine, Sept. 15th, 1903.

[26] Watson: The Effect of Drainage and Other Measures on the Malaria of Klang, Federated Malay States, Journal of Tropical Medicine, Nov. 16th and Dec. 1st, 1903.

[27] Ibid.: Second Report, Journal of Tropical Medicine, April 1st, 1905.

[28] Travers and Watson: A Further Report ......, Journal of Tropical Medicine, July 2nd, 1906.

4.—*Infected Children in Towns and District.*

| | Klang. | Port Swettenham. | District. |
|---|---|---|---|
| November and December, 1904. | | | |
| Children examined ... ... | 173 | 87 | 298 |
| Children infected ... ... | 1 | 1 | 101 |
| November and December, 1905. | | | |
| Children examined ... ... | 119 | 76 | 247 |
| Children infected ... ... | 1 | 0 | 59 |

5.—*Sick Certificates and Sick Leave Granted to Government Employees.*

(Numbering 176 in 1901 and 281 in 1904.)

| Years ... ... ... ... | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|
| Certificates ... ... ... | 236 | 40 | 23 | 14 | 4 |
| Days of leave ... ... | 1026 | 198 | 73 | 71 | 30 |

To these figures Dr. Watson adds[27] that so great has been the reduction of the malaria that he has lost a large part of his private practice as District Medical Officer. Regarding the reduction of mosquitoes he remarks[27]: "A definite improvement in the health of Klang was evident when only the swamps nearest to the main groups of houses had been dealt with, and while other swamps within the town were still untouched. The mosquitoes from these did not appear to travel any distance, and there has been no evidence of dangerous immigration of anophelines from the extensive breeding-places which, until the middle of 1904, existed just outside the town boundary, and some of which still remain. Yet the species breeding in these swamps were identical with those breeding within the town."

The objection raised against the campaign at Ismailia—namely, that it possesses a dry soil and climate—cannot be raised against the well-conducted campaigns in the Federated Malay States, and the world owes a debt of gratitude to the Government of these States, to Mr. Travers, and especially to Dr. Watson, for the fine example which they have set.

## V.—CAMPAIGN AT HONG-KONG.

One of the earliest and best of the campaigns in British territory. The city of Victoria, usually called Hong-Kong, runs for nearly five miles along the north of the island of that name at the mouth of the Canton river in South-East China. The island, 11 miles long and from two to five miles broad, consists of a broken ridge of hills, rising to nearly 2000 feet, and the city is built on a hill sloping down to the water, some of the terraces and houses being 500 feet above sea level. There is also a large residential district on the mountains reached by a cable tramway. The soil is granitic. All along the face of the hill on which Victoria is built there are beds of streams, known as "nullas," which used to swarm with anopheline larvæ. The population of the colony was 377,850 in 1905, of which 10,835 were whites (nearly half belonging to the British army and navy). The rainfall is from 70 to 80 inches a year. Malaria has been always very prevalent here, and I remember that in 1881 the colony was cited as an example of the telluric miasma due to decaying granite. The first researches on the new lines were commenced as early as May, 1901, by Dr. J. C. Thomson,[29] who undertook an exhaustive study of the mosquitoes and their breeding-places. He examined over 32,000 specimens, of which he found about 4 per cent. to be anophelines, and in November advised an active antimalaria campaign by drainage, clearing of jungle, "training" of the nullas, the use of wire gauze, oiling pools, and quinine prophylaxis. As seen by his excellent papers,[30] his recommendations were not of a general nature, but were particular, practical, and exact. These recommendations were rapidly acted upon by the Government. Since 1901 all the nullas or water-courses within and near the city were "trained"—that is, rendered so smooth and even that the anophelines could no longer breed in them; and much similar work was done wherever most needed elsewhere by training water-courses, buying up rice fields, and so on. The details of the campaign are so numerous that it is impossible to give them here. They will be found in the publications given in the bibliography and in a good paper by Mr. J. M. Young,[31] who took part in the early stages of the work. The results are given in the annual sanitary reports of the colony and in a recent address by the medical officer of health, Dr. W. Francis Clark.[32] Dr. Thomson informs me that before estimating them it is necessary to remember that malaria can never become extinct in Hong-Kong owing to the fact that some 3000 to 4000 natives come and go from and to the country districts every day, and that a number of these will remain infected in spite of all local measures. Nevertheless the figures show a rapid diminution both in the admission and in the death-rates.

*Malaria Statistics of Two Large Hospitals.*

| Years ... ... ... | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|---|
| Admissions ... ... | 1021 | 865 | 780 | 1220 | 1294 | 752 | 568 | 433 | 419 |
| Deaths ... ... ... | 197 | 126 | 63 | 163 | 132 | 128 | 63 | 58 | 54 |

*Admission Rate of Police for Malaria.*

| Years... ... ... | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|---|---|
| Admission % | 32 | 25 | 19 | 31 | 42 | 44 | 19 | 18 | 11 | 12 |

*Deaths from Malaria.*

| Years... ... ... | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|---|---|
| Population | 239,419 | — | — | — | — | — | — | — | — | 377,850 |
| Total deaths ... | 533 | 554 | 530 | 546 | 555 | 574 | 425 | 300 | 301 | 285 |
| Deaths in city (Chinese only) | 290 | 302 | 280 | 218 | 242 | 281 | 189 | 152 | 90 | 87 |

The official sanitary reports give similar figures. The improvements have, of course, varied much in different localities. Thus in 1900 the western end of Bonham-road used to be one of the worst districts. Now in 1905 it is reported not to have sent a single case to the Government Civil Hospital.[33]

With regard to cost, Dr. Clark reports that up to the end of 1905 the Government had expended about £5000 on antimalaria measures, and estimates that £6500 would be spent by the end of 1906—a small amount to pay for the good that has been done. The campaign in such a thickly populated district must be difficult. A larger expenditure would probably have produced still more marked results and it would have been useful to estimate the endemic index in various parts of the area. I am much indebted to Dr. Thomson and also to Mr. J. Bell for the detailed information which they have been so kind as to send me but which I have no space to give more fully.

## VI.—CAMPAIGNS IN INDIA.

In 1898 I had hoped that India would have led the way in the matter of malaria prevention. Long previously the Government had done very well by issuing cheap quinine in malarious localities and by making several local inquiries. The disease existed more or less throughout the country and in some military stations caused an admission-rate of several thousands per mille, while in other places it was an extremely serious detriment to development. There were numbers of places as dry and easy to deal with as Ismailia, while few presented worse difficulties than the towns in the Malay States. The military stations were under the complete control of the authorities, and experienced administrators, sanitary officers, and engineers abounded everywhere. So far as I can ascertain, however, little or nothing was done for several years. The first active campaign seems to have been inaugurated in 1902 as an experiment at Mian Mir in the Punjab, but was most unfortunately a failure, at least at first.

*Mian Mir.*—This is a large cantonment or garrison town situated on the flat and hot plains near Lahore. Constructed in 1851–52 in the midst of what was then an arid and treeless desert, it was later well watered by irrigation canals. The result was that malaria began to prevail to such an extent that in 1879 the annual admission-rate for fevers rose to 3427 per 1000 of the troops and the place was called "the white man's grave." In 1901, however, Dr. Stephens and Captain Christophers of the Malaria Commission of the Royal Society were sent on my suggestion to India and investigated the mosquitoes of Mian Mir amongst other places.[34] In April, 1902, practical operations were commenced, evidently on the Sierra Leone model, by Captain S. P. James, I.M.S., and afterwards by Captain Christophers. The results, however, were not only negative but were stated in such a way by these observers as to suggest that mosquito reduction was generally a difficult if not impossible task.[35]

---

[29] Thomson: The Distribution of Anopheles and Culex at Hong-Kong, Brit. Med. Jour., 1901, vol. i., pp. 749 and 1379.

[30] Ibid.: Malaria Prevention in Hong-Kong. Official report, containing many letters, 1900–1903.

[31] Young: The Prevention of Malaria at Hong-Kong, Brit. Med. Jour., 1901, vol. ii., p. 683.

[32] Clark: An Address on the Prevention of Malaria in Hong-Kong. Noronha and Co., Hong-Kong, 1906.

[33] Reports on the Health and Sanitary Condition of the Colony of Hong-Kong, 1900–1905, p. 54.

[34] Stephens and Christophers and James: Royal Society, Reports to the Malarial Committee, 7th and 8th Series, 1902, 1903. Harrison and Sons, London.

[35] James and Christophers: Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. First and Second Reports of the Anti Malarial Operations at Mian Mir, No. 6, 1903, and No. 9, 1904.

The writers had evidently failed to grasp the subject, for they attempted an important work without adequate expenditure and made other mistakes. Their reports were exhaustively criticised by Giles, Sewell, and myself,[36] [37] but they nevertheless retarded Indian antimalarial efforts for some time.

Since then, to judge from accounts in the Indian sanitary reports[38] and from details very kindly furnished to me by Surgeon-General A. Scott Reid, I.M.S., and Colonel H. D. Rowan, R.A.M.C., wider measures have been attended with better results. Since 1905 the following measures have been adopted. The principal irrigation canal and its branches were closed within a radius of about 800 yards of the barracks and officers' quarters. The surface of the ground was everywhere levelled and the drainage improved so that even after a heavy fall of rain not a single collection of water will be found after 72 hours (except a large pit which is in course of being filled in). The whole cantonment was divided into six areas, each under a medical officer, and each area is visited once a week by a strong "mosquito brigade." All wells are protected and those used for irrigation purposes are oiled once a week. Quinine is administered twice a week on consecutive days from June to November under medical supervision. Residents are held strictly responsible for the condition of their compound (gardens). No undergrowth or rubbish is allowed, nor pits for the reception of sullage water; and other general sanitary improvements have been made.

In estimating the results Colonel Rowan remarks that the statistics of mortality in the civil population cannot be relied upon and that there are difficulties in connexion even with those of the troops. Since 1905 cases have been returned as malaria only when a microscopic diagnosis has been made and are otherwise given under the heading of simple continued fever (exclusive, of course, of typhoid or undulant fever); but he remarks that this is not quite fair amongst men who are getting quinine with such regularity. He thinks it best to take the admission-rates for malaria and simple continued fever together, and these show a considerable decline. For the five years 1898–1902, the average annual admission-rate per 1000 of the British (white) troops was about 900. In 1903 it was nearly 1100; but in 1904, 1905, and 1906 it fell to about 600, 400, and 460 respectively. The general admission-rates for all disease among these troops were 1950 in 1898–1902, 1800 in 1903, 1350 in 1904, 1350 in 1905, and 1240 in 1906. In a native cavalry regiment which has remained in Mian Mir for the whole of 1904, 1905, and 1906, the admission-rates for malaria per 1000 have been 242, 108, and 43 respectively. On the whole, he is satisfied with the success of the campaign, but thinks it too early to form an estimate of the full extent of the gains. I am told also that the fact that the troops have to serve frequently at Fort Lahore, a very unhealthy place, does much to distort the figures. But the measures are reported ([18], p. 231) to "have undoubtedly contributed to the decreased prevalence of anopheline mosquitoes and their larvæ during the year." Colonel Rowan tells me that culex are much less common and that anophelines "have become positively rare," although a native is specially employed to find them if possible.

*Progress of events.*—In January, 1902, a conference of medical men on the subject of malaria was held at Nagpur. It drew up an excellent set of rules for antimalarial sanitation, but so far as I can gather no general orders were issued to make the rules compulsory. Gradually, however, several stations began to adopt measures on a small scale, chiefly, I think, owing to the initiative of individual medical officers, though the results at Mian Mir were frequently used to discourage them. Apart from practical work numerous good articles on mosquitoes and their habits appeared.[39] [40] It is difficult to give any adequate account of the campaigns because the full facts are not obtainable, but I will refer briefly to the following.

Major W. J. Buchanan, I.M.S., Inspector-General of Prisons in Bengal, has been good enough to give me some details of his campaign at Buxor Central Jail. Buxor, in Bengal, is full of malaria, attributed to the large number of small irrigation canals. The jail is a good one, well situated and drained, but it has one irrigation canal entering it in order to supply water. In June, 1904, Major Buchanan had the canal banks close cut, cleared, and tarred, and gave similar treatment to certain tanks. All pools, puddles, and hollows were filled up and land in a neighbouring village was acquired for the purpose, while quinine was given every Saturday and Sunday during the malaria season. The results among the prisoners (averaging about 1400) were:—

| Years... ... ... ... ... ... | 1902 | 1903 | 1904 | 1905 | 1906 |
|---|---|---|---|---|---|
| Admissions for malaria | 2091 | 2455 | 1267 | 1207 | 1191 |

It should be remembered that prisoners are constantly being changed, new and infected criminals being frequently introduced from outside. Major Buchanan adds that he is adopting similar measures in all jails. It is difficult to find mosquito larvæ in any of the better situated ones. He approves of quinine prophylaxis in addition.

In the Madras Presidency Colonel W. G. King, I.M.S., the Sanitary Commissioner, early took interest in antimalaria work and commenced to organise mosquito brigades, and in 1904 the Government was reported to have taken active steps in this direction. It accepted Colonel King's scheme, suggested a suitable organisation, and advised municipal councils to meet the expenditure required.[39] I have not yet seen any description of the results.

Captain C. A. Sprawson, I.M.S., has been kind enough to give me many details of the work at Jhansi, a town of 12,457 inhabitants in Bundelkand. Operations appear to have been started at the beginning of the rains in 1906. The cantonment was divided into two areas, one for the white troops and one for the native troops, each division being placed under the appropriate medical officers under whom mosquito brigades were appointed. The native quarter was also looked after. Instruction regarding malaria was made public. The money allotted for the actual work, however, appears to have been rather small, as it was not allowed to exceed about £23 a year—less than a ½*d.* per head of population and 2*d.* per acre of land. As a matter of fact, the admission-rate for malaria seems to have increased rather than diminished, for it was 246·5 per cent. in 1906 against only 71·8 per cent. in 1905. The surrounding villages appear to have been left untreated and the cantonment itself is full of borrow-pits.

Although campaigns seem to have been at least commenced in many stations in India, I can gather only meagre and insufficient information about them in the official reports. At Jubbulpore and Dinapore considerable drainage and antimosquito works, combined with quinine prophylaxis, appear to have produced marked effects ([38], p. 16). Active, and so far as I can ascertain ([18], p. 230) enthusiastic, measures have been adopted in Peshawur, Rawal Pindi, Sialkot, Ferozepore, Karachi, Mhow, Kamptee, Deesa, and Saugor; and in Burma ([41], p. 6), in Akyab, Myitkyina, Monywa, Paletwa, Mogok, Kyaukpyu, and Maymyo. At Mogok Captain J. Good, I.M.S., reports a diminution of malarial fevers (diagnosed by the microscope) from 25·4 per cent. of admissions in 1905 to 16·4 in 1906. As a rule, however, neither results nor expenses are given in the official reports.

The total amount of malarial fever in India, with its population of about 300,000,000, is immense. There must be several millions of deaths directly or indirectly due to it every year. Among the troops and prisoners in jails the annual number of admissions into hospital for malaria equal between a quarter and a half of the total strength. It is therefore very necessary that all the antimalarial work throughout the country should be dealt with in a business-like manner and that the results obtained should be collected and published for guidance and study.

### VII.—Other Campaigns.

*Khartoum.*—This very interesting work was commenced in 1903 by Dr. Andrew Balfour, director of the Wellcome Research Laboratories of the Gordon Memorial College, and will be found accurately described in the two fine reports of the laboratories,[41] to which I must refer for details. After a preliminary survey of the local mosquitoes, a small brigade was started on the lines laid down by me and quickly attacked the breeding places. These in Khartoum were wells, pits, garden tanks and pools, sullage pits, river pools, and collections of water in steamers and barges. After heavy rain large pools which may last for some time form on the flat ground and used to breed many mosquitoes. All these waters were attacked by various methods, with the result that the larvæ were found in quickly decreasing numbers. Now, in his second report, Dr. Balfour remarks that, although mosquitoes have not been completely banished, yet "we are rid, and well rid, of the annoying stegomyia, the dangerous pyretophorus is kept in abeyance, and culex, the ubiquitous, has ceased to be a nuisance." He adds: "I have not seen a living, wild, adult anopheline in Khartoum for more than a year and a half, and I am always on the outlook for these insects." The effect on the amount of malaria could not be estimated owing to the absence of statistics and to the fact that malaria was never very prevalent there. If by accident the insects are allowed to recur, malaria reappears; and he tells me that since the date of his second report six primary cases have been caused in this way, though the outbreak was promptly suppressed. Owing to the assistance of Colonel R. H. Penton, R.A.M.C., principal medical officer of the Sudan, the work was extended. Surrounding villages are heavily infected, but excellent rules regarding irrigation are being introduced. Dr. Balfour and his colleagues are to be warmly congratulated on their work.

---

[36] Giles: Cold Weather Mosquito Notes from India, Journal of Tropical Medicine, April 1st, 1904.

[37] Ross and Sewell: Brit. Med. Jour., Sept. 17th, 1904.

[38] Annual Report of the Sanitary Commissioner with the Government of India, 1905. Calcutta.

[39] Indian Medical Gazette, January, 1905, p. 30.

[40] James and Liston: A Monograph of the Anopheles Mosquitoes of India. Thacker, Spink and Co., Calcutta, 1904.

[41] Balfour: First and Second Reports of the Wellcome Research Laboratories, 1904 and 1906. Department of Education, Khartoum.

Some years ago Colonel Penton asked me to go to the Sudan to advise regarding the prevention of malaria in the Sudan. I was unfortunately unable to accept the invitation, but he himself has carried out excellent work with considerable success in Kassala and El-Obeid, besides Khartoum.[42] In Port Said (56,000 inhabitants) an active campaign has been conducted by my brother Mr. E. H. Ross against the mosquitoes there.[43] The result is, he says in a letter dated last March, that there "has been almost complete absence of the pest in a year's work. No case of acute malaria has been admitted to hospital since August last. There has been a reduction in the death-rate. …… At Ismailia the results are well known. There is now a complete absence of mosquitoes and of malaria. But in some of the villages round there is much malaria and many anophelines, owing to the irrigation." In Cairo, in the district of Kasr-el-du-Barra, and Helowan, campaigns have been organised with success by my brother Mr. H. C. Ross. This Egyptian work has been carried out with the sanction and approval of Sir Horace H. Pinching, the distinguished head of the Sanitary Department of Egypt.

*Candia, Crete.*—The accounts of this excellent campaign, conducted in connexion with the British troops in Crete, will be found in successive numbers of the *Journal of the Royal Army Medical Corps*. The town of Candia, containing 21,000 inhabitants, is situated on the seashore of a semicircular plain bounded by hills. The rainfall is heavy and the ground is traversed by many streams which become torrents in winter and nearly dry in summer. Two of them have marshy margins near the sea. The houses of the town are of the Oriental type and contain many wells. The troops are accommodated in quarters to the west of the town and close to it and suffered considerably from malaria. Apparently as early as 1902[44] Lieutenant-Colonel J. V. Salvage, R.A.M.C., commenced to examine into the distribution of anophelines and to destroy the larvæ by drainage, or by closing or oiling the wells, or putting fish into them, and expressed himself hopefully regarding the result. In March, 1903, Major C. J. MacDonald arrived in Crete and continued the work.[45] He gives many very interesting details. Works of a permanent nature were attempted and quinine prophylaxis and mosquito nets insisted upon. The first results were as below:—

| Years | 1901 | 1902 | 1903 |
|---|---|---|---|
| Strength | 564 | 460 | 410 |
| Admissions | 1540 | 1084 | 227 |
| Rate per cent. | 273 | 236 | 55 |

The admissions include simple continued fever, together with malaria, in order to avoid error due to diagnosis. Major MacDonald attributes the fall to the measures taken. In 1905, Captain R. A. Cunningham, R.A.M.C., adds a third article,[46] in which he states that the fall in the malaria-rate had continued, and was only 30 per cent. in 1904 compared with the 55 per cent. of 1903. The mosquitoes were so few that it was almost unnecessary to use a net at night. In 1905 ([18], p. 103) there were 246 admissions, or a rate of 38·7 per cent. Many men become infected on guards and outposts.

*St. Lucia.*—A good account of this work has been given by Colonel F. P. Nichols, R.A.M.C.[47] British troops have long been stationed at Castries, St. Lucia. During 1902 and 1903 drainage works were carried out by Colonel Hodder of the Royal Engineers, but shortly afterwards the garrison was removed. Colonel Nichols has attempted to ascertain the effect of the operations on the health of the troops before they departed. He gives many interesting cases, and remarks: "The apparent effects were very marked, as noted by both officers and men, by Major Bent, R.A.M.C. (to whom I am indebted for many notes on the point), and by the other Royal Army Medical Corps officers, and as testified by the immediate drop in the admission-rate for malarial fevers, which began at once and has continued ever since." Colonel Hodder said: "At the present time (1904), in buildings which were formerly infested with mosquitoes of all kinds, scarcely a sign of one exists; but it has taken two years of continuous work to effect this result." Colonel Nichols gives and discusses many figures from among which I select the following:—

| Years. | Admission-rate per cent. | Years. | Admission-rate per cent. |
|---|---|---|---|
| 1895 | 339 | 1901 | 575 |
| 1896 | 417 | 1902 | 851 |
| 1897 | 314 | 1903 | 127 |
| 1898 | 256 | 1904 | 77 |
| 1899 | 141 | 1905 | 45 |
| 1900 | 100 | | |

The admissions include simple continued fever.

## VIII.—CAMPAIGNS AT HAVANA AND PANAMA.

*Havana.*—I have already referred to the great discovery of the mode of propagation of yellow fever and the subsequent campaign against that disease started in Havana in February, 1901. The result as regards yellow fever was decisive for several years, and although it reappeared in 1905 and 1906 it was again banished when the United States resumed control of the island last year. As regards malaria the general war against mosquitoes in Havana produced marked effects. Almost immediately after the commencement of the operations in February, 1901, this disease also began to decline, and the diminution has been steadily maintained. The details will be found in the full monthly statistics of the Board of Health,[48] but Dr. Charles Finlay, the distinguished originator of the mosquito theory of yellow fever, and head of the Health Department of Cuba, has kindly furnished me with the following figures of the deaths from malaria in Havana for a number of years:—

| Years | Deaths (malaria). | Years. | Deaths (malaria). | Years. | Deaths (malaria). |
|---|---|---|---|---|---|
| 1880 | 335 | 1889 | 228 | 1898 | 1907 |
| 1881 | 228 | 1890 | 170 | 1899 | 909 |
| 1882 | 191 | 1891 | 203 | 1900 | 344 |
| 1883 | 183 | 1892 | 202 | 1901 | 151 |
| 1884 | 196 | 1893 | 240 | 1902 | 77 |
| 1885 | 101 | 1894 | 201 | 1903 | 51 |
| 1886 | 135 | 1895 | 206 | 1904 | 44 |
| 1887 | 269 | 1896 | 450 | 1905 | 32 |
| 1888 | 208 | 1897 | 811 | 1906 | 26 |

The population of the city is about 250,000. Dr. Finlay tells me that it has been possible to carry out antimosquito work outside the city only occasionally when yellow fever or malaria threatened certain localities. On all such occasions a regular antimosquito campaign was started and ordered to be continued thereafter. This great work, due to Gorgas, Finlay, and the United States Government, constitutes an epoch in tropical sanitation.

*Panama.*—Perhaps even more remarkable is the work of the Americans under Colonel Gorgas on the canal zone of the Isthmus of Panama. As is well known, the attempt of the French to cut the canal through the isthmus was foiled principally by yellow fever and malaria, and I was told that their effort had cost quite 50,000 lives. The Americans took possession of the works early in 1904, at a time when the mode of propagation and of prevention of both diseases was well known, and they wisely determined to commence their labours with sanitation. Colonel Gorgas, assisted by a capable and enthusiastic staff, was put in charge and attacked the work with knowledge and energy. I visited the place at his invitation in the autumn of 1904 and was a witness of the skill shown in his dispositions. The country is one of the worst to deal with which I have ever seen. Hilly, with a great rainfall, a loose crumbling soil, a luxuriant vegetation, and innumerable small marshes and pools, it was evidently the very stronghold of malaria. Step by step, with the aid of numerous experts and hundreds of workmen, the Americans cleared the forests, drained the pools, and banished the stegomyia. The details and the results will be found in the monthly and annual reports of the work[49] and in a recent address by Colonel Gorgas.[50] Put briefly, the results are that in 1906 amongst 5000 white American employees the total death-rate was only 7 per mille, and of this only 3·8 per mille were due to disease. Last April the daily sick-rate of the total force of about 40,000 people was only 17 per mille. Colonel Gorgas says: "Among 6000 Americans in the employ of the Commission, including some 1200 American women and children, the families of these employees, we have but little sickness of any kind, and their general appearance is fully as vigorous and robust as that of the same number of people in the United States." These published statements are fully borne out by private communications from individuals living there. Colonel Gorgas adds: "I think the sanitarian can now show that any population coming into the tropics can protect itself against these two diseases (yellow fever and malaria) by measures that are both simple and inexpensive ......; and that again the centres of wealth, civilisation, and population will be in the tropics as they were in the dawn of man's history. ......"

---

[42] Penton: The Malarial Campaign in the Sudan, Journal of the Royal Army Medical Corps, vol. iv., p. 628, 1905.

[43] E. H. Ross: Measures against Mosquitoes in Port Said, Journal of Tropical Medicine, March 15th, 1907.

[44] Salvage: Preventive Measures against Malaria in Candia, Crete, Journal of the Royal Army Medical Corps, vol. ii., p. 566, 1904.

[45] MacDonald: Crete as a Station, &c., ibid., vol. iv., p. 31, 1905.

[46] Cunningham: Malaria Fever in Candia, ibid., vol. v., p. 274, 1905.

[47] Nichols: The Effects of Large Drainage Works on the Prevalence of Malaria, Journal of the Royal Army Medical Corps, vol. viii., p. 343, 1907.

[48] Informe Mensual Sanitario y Demografico, Habana.

In this great work of Colonel Gorgas and his colleagues I recognise the attainment of that ideal which was set before me when, ten years ago, I found the zygotes of the parasites of malaria in mosquitoes. I regret only that the honour of attaining it has not fallen to my countrymen, as might well have been the case. But we must none the less congratulate the Americans on the splendid achievement with which they have signalised their entry into the lists of the colonising nations of the world.

### IX.—REMARKS AND CONCLUSIONS.

Exigencies of space have compelled me to be very brief in my descriptions of the above campaigns. In addition to them good work has been commenced in the Andaman Islands, Ceylon, South Africa, Southern Rhodesia, British Central Africa, Sapele (West Africa), and Mauritius (which last-named place I hope to visit shortly on behalf of the British Government). Good work has also been done in connexion with many mines and railways in West Africa; but at present details regarding most of these campaigns are not available, or are either too meagre or buried in inaccessible local reports. The excellent antimosquito work of Doty and of Weeks and others in the United States, and of the French in Corsica and Algeria, is somewhat outside my province. I should have liked to describe the operations in Greece (which I was able to visit last year), but this will be done much better by my distinguished friend Professor Dr. Savas. For many papers on the prevention of malaria I must refer to the British medical press, especially THE LANCET, the *British Medical Journal*, the *Indian Medical Gazette*, and the *Journal of Tropical Medicine*.

From all the experiences collected and the discussions carried on during these ten years the following general conclusions are now I think, beginning to emerge:—

1. For tropical sanitation against both malaria and yellow fever (and probably filariasis) general mosquito reduction is by far the most practical, as it is the most fundamental, method, at least in thickly populated areas. In support of this proposition, originally advanced by Finlay for yellow fever and now by myself for malaria, it suffices to quote the greatest living authority on the prevention of both these diseases—Colonel Gorgas—who for more than six years continuously has been waging successful war against them, not on a small but on a large scale, and not in easy but in the most difficult possible conditions. Regarding yellow fever, he says[50]: "When we left Cuba after the disappearance of yellow fever, we were inclined to think that the results had been obtained principally by the destruction of the infected stegomyia, but further experience at Panama has convinced me that the important element is the destruction of stegomyia generally. I merely mention this as showing how practical work and experience entirely change well-grounded theories." Regarding malaria, after enumerating the various methods of prevention, he says[50]: "By far the most important of these measures is that of destroying the breeding places and this is successfully done by surface and subsoil drainage." So many people write on this subject without any real practical experience of it that we shall do well in future if we listen more attentively to such words as these of Colonel Gorgas.

2. Prophylaxis by quinine, by screens, and by segregation may be attempted, if possible, in addition to the fundamental measure, but, as regards tropical towns, must be looked upon only as adjuvants to it. As a rule, in the tropics general cinchonisation is feasible only for officials, troops, and bodies of workmen; and screening and segregation can seldom be used except for public buildings and the houses of Europeans. All should be advocated, but there is a distinct danger of wasting on the subsidiary measures efforts and funds which might be more usefully spent on the fundamental one, a thing which I have frequently observed to happen. For example, cinchonisation is being much advocated, and quite rightly so, for the troops in India; but at the same time irrigated fields are often permitted to remain in the close vicinity of barracks. Hence, while the number of relapses among the men may be reduced, yet probably just as many as before become infected from the surrounding untreated population and a false impression of improvement is given. It is constantly forgotten that for the individual quinine is, properly speaking, not a prophylactic at all—it does not exclude infection, but merely extirpates it (in some cases) after it has effected an entry. It is poor policy to substitute a possible extirpation for a certain exclusion. On the other hand, the subsidiary measures become essential where it is not worth while to attempt mosquito reduction, as in the case of camps and of many isolated houses, farms, plantations, &c.

3. There is no doubt that the mere knowledge of the fact that mosquitoes cause infection is producing a great improvement of the health of educated people in the tropics. This occurs in two ways: first, such people are more careful in the use of nets; and, secondly, medical men, without undertaking formal campaigns, do more than formerly to suppress breeding pools close to houses, barracks, &c. There is thus a kind of unconscious prophylaxis beginning to be adopted everywhere. The following figures, which I have collected from the Indian Sanitary Reports[38] give some evidence of this:—

*Admission Rates per 1000 for Malaria in India.*

| Years ... ... | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|---|---|
| Jail prisoners | 292 | 383 | 348 | 350 | 364 | 382 | 375 | 366 | 346 | 336 |
| Native troops | 292 | 363 | 355 | 277 | 335 | 373 | 286 | 256 | 201 | 180 |
| White troops | 253 | 420 | 427 | 245 | 321 | 300 | 254 | 247 | 177 | 114 |

These statistics refer to the prisoners and troops of the whole of India, and are, therefore, very reliable. It will be observed that the admissions among the prisoners have not decreased, owing to the fact that these people, drawn from the lowest classes of the population, are constantly being changed in the jails, so that sanitary improvements as regards malaria in these buildings can produce little effect on their fluctuating population. On the other hand, there appears to be a considerable decrease among the troops, all of whom have medical men in charge of them, while the white troops are provided also with mosquito nets or punkas. There has been a slight increase in the amount of simple continued fever diagnosed, but not nearly enough to account for the fall in the malaria rate.

4. But unconscious prophylaxis of this kind will not do everything, and State intervention is necessary if the fullest results are to be obtained. Here two great mistakes have been made.

The first mistake is to suppose that we can educate the general public by means of notices and pamphlets to protect themselves against disease—a mistake constantly made by inexperienced sanitarians. We may reach a few educated people in this way, but, as every practical health officer knows, the masses will not trouble to take the advice. It is ridiculous to suppose, for example, that a large native population will use nets, or take quinine, or destroy mosquitoes, simply because the "doctors" advise them to do so. Even among civilised nations hundreds of thousands reject so simple a precaution as vaccination. In other words, from a sanitary point of view the general public is a child which must have everything done for it.

---

[49] Reports of the Department of Health of the Isthmian Canal Commission, Monthly and Annual. Government Printing Office, Washington.

[50] Gorgas: Sanitation in the Canal Zone, Journal of the American Medical Association, July 6th, 1907.

The second mistake is to suppose that small local authorities, if left to themselves, will interest themselves greatly in sanitation. A review of the campaigns against malaria which I have discussed will show that all of them are due to the energy and intelligence of single persons. If a locality possesses a governor or a medical man of capacity the campaign is started and is continued as long as he remains there. If not, nothing whatever is done. The truth is simply that local officials are, as a rule, unwilling to take the necessary trouble. Secure of their pay and their pensions they easily avoid the obligation by pretending that the work is too difficult or too expensive. Now the only way to overcome this inertia is to use official compulsion from the higher authorities. But, strange as it may seem, I have not known a single case in which such action has been taken. The local authorities are allowed to go their own way quite uncontrolled and are not even compelled to collect statistics. At the same time nothing is done to encourage sanitary officials to bestir themselves in this line. I have not heard of a single instance in which anyone who has really done good work against malaria has received official thanks or reward for his pains; while, on the other hand, honours have been given to men who have actually retarded such work. There is often much pretence of action—conferences are held and speeches are made, but the years elapse and—the malaria remains as it was.

Besides local inertia there is another reason why local efforts against the disease are often so limited and that is the fact that medical men in the smaller colonies do not always possess the knowledge of how to use the colonial resources to the best effect. Ill-advised attempts are made and result only in failure, waste of money, and discouragement of other efforts.

### X.—RECOMMENDATION.

After consideration, therefore, I can only suggest—what I have fruitlessly suggested many times for many years—that the best way to encourage more vigorous action in the future is to centralise the antimalarial administration. Each principal government which presides over malarious countries or colonies should appoint a special commissioner to travel from place to place in order (1) to advise local authorities as to the best measures for dealing with malaria in each locality; (2) to report to the head government; and (3) to organise the collection of statistics. Such an appointment is perfectly practicable and is in fact nothing but the specialisation of the Indian system of sanitary commissioners or of the American Marine Medical Service system. It would gather the reins of antimalarial organisation into one hand; would help the willing authorities and stimulate the unwilling; and would save funds now often wasted on abortive efforts. At present, I think, the inhabitants of many malarious places have reasons to make serious complaint of the slackness with which modern discoveries have been followed up, and we can only hope that the next decade will show a more rapid advance in this respect.

### ADDENDA.

Since the above was written the colonial reports[18] for some West African colonies for 1906 have been published and give more detail on sanitary matters than previous reports have afforded. In Sierra Leone the sum of £2223 was expended on repairs to streets and on laying down concrete surface drains, and a scheme "for devising a proper system of drainage has been approved by the Secretary of State and will be carried out during the current year." The mortality and morbidity returns as briefly given in the report show no marked change during recent years. For Bathurst, British Gambia, it is stated that, "Bordered as it is on two sides by large swamps, there must, however, be a great deal of fever endemic in the place, and this it is impossible to prevent, though considerable improvement has been effected by the anti-mosquito sanitation measures which are vigorously prosecuted." In the report for the Gold Coast it is stated that "improvements were carried out at considerable expense in the towns of Cape Coast, Sekondi, and Kumasi." The deputy principal medical officer states: "I have no hesitation in saying that the health has improved," but I can find little trustworthy evidence of this in such figures as are given in the colonial report. Work done in Burma has already been mentioned but further details will be found in Colonel King's report on the sanitary administration of Burma for the year 1906, showing that active interest is now being taken in the matter.

Regarding the Federated Malay States, there was a great increase of malaria during 1906 in the district surrounding Klang and Port Swettenham, owing to a large influx of coolies, but in these towns themselves it has remained absent owing to the measures taken (supplement to the *Selangor Government Gazette*, 1907). Dr. M. Watson is urging energetic measures for dealing with the malaria of coolies in plantations. Great interest is shown in the country regarding the whole subject, and the medical department is happy in having the strong support of the British Resident, Mr. Conway Belfield.

At the meeting of the British Medical Association in July Major A. H. Nott, I.M.S., described an antimosquito campaign at Murshedabad in India, but I regret that I have not yet been able to see a copy of his work.

Owing to the efforts of Colonel Seely, M.P., and Mr. Hahnemann Stuart, the British Colonial Office promised last year to issue a report on the prevention of malaria in all the colonies in its jurisdiction, but the paper has not yet been published.

As many shipowners have taken interest in tropical medicine I sent a circular some months ago to most of the leading firms with sailings to the tropics asking them for information regarding the steps which any of them may have taken to prevent malaria on board their ships. Although the request was repeated only three firms have replied. The Booth Steamship Company (Liverpool, New York, and Brazil), which has done much for research work, informs me that quinine is given regularly to its crews while on the Amazon, and that the men are provided with mosquito nets and the ships' hospitals with wire-gauze fittings. They have few cases of fever. The Harrison Line (Liverpool, America, South Africa, and India) has never had many cases of fever on board its ships; but nevertheless quinine is given regularly "at malarious ports," and the men are supplied with muslin mosquito-bars. Messrs. John Holt and Co., who charter steamers to various tropical ports, strictly order the use of quinine and provide mosquito nets and sun-helmets for the men. Mr. Holt says that "the general effect of our instructions has been to lessen fever arising from malaria," but is disappointed that it has not been entirely banished. He is not a shipowner, but wishes that some owner would build (experimentally) a steamer fitted for excluding mosquitoes, and cannot conceive that such a thing is impossible to human ingenuity. He thinks that legislation should be passed to compel vessels visiting the tropics to adopt the necessary measures against malaria.

Liverpool.

---

# A NEW OPERATION FOR PENILE HYPOSPADIAS.

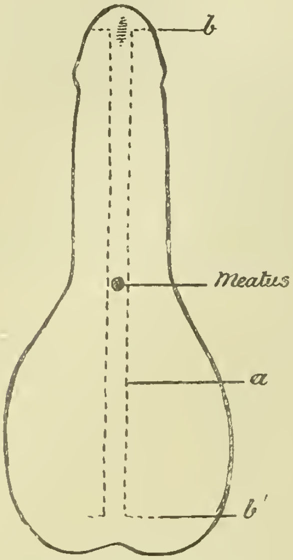
BY RUPERT T. H. BUCKNALL, M.S., M.D. LOND.,
F.R.C.S. ENG.,

ASSISTANT PROFESSOR OF CLINICAL SURGERY AT UNIVERSITY COLLEGE,
LONDON; ASSISTANT SURGEON TO UNIVERSITY COLLEGE HOSPITAL;
SURGEON TO IN-PATIENTS AT THE VICTORIA HOSPITAL FOR
SICK CHILDREN, CHELSEA.

THE following operation for the relief of penile hypospadias has not, as far as I am aware, been previously described. It has proved so successful, however, in the few cases in which I have tried it that I now venture to give an account of it, as I believe that in suitable cases it will be found to afford more satisfactory results than can be obtained by the various operative procedures now in vogue.

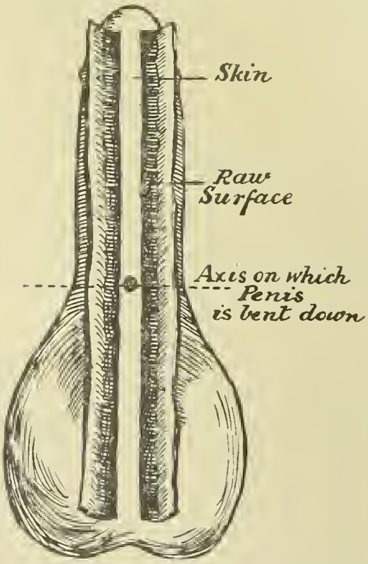
*Description of the operation.*—The penis is drawn up over the abdomen in the middle line and the scrotum is drawn down in the opposite direction between the thighs, so that the groove, usually present in such cases, on the under surface of the penis, the false meatus urinarius, and the scrotal raphé all occupy the median line (Fig. 1). Two similar incisions are now made on each side of the median line one-eighth of an inch from it and parallel to it. Each begins on the glans penis and is continued down the penis until opposite the misplaced urethra at its root. Each incision is now prolonged on to the front of the scrotum on each side of the scrotal raphé and parallel to it until the incisions on the scrotum measured from the level of the misplaced meatus are equal in length to those on the penis measured from the same point to the point of their commencement on the glans penis. When these incisions are completed a median strip of skin a quarter of an inch in width is mapped out, reaching along the upturned ventral surface of the penis and the front of the scrotum, with the misplaced meatus at its centre. From the extremities of the two incisions bounding this strip of skin others are now made outwards at right angles, each a quarter of an inch in length (Fig. 1 *b b′*). In this way two longitudinal flaps are marked out on either side of the median strip of skin throughout its whole length. These flaps are dissected up off the sides of the penis and front of the scrotum respectively, and rolled outwards away from the middle line throughout their whole length (Fig. 2).

FIG. 1.



Showing incisions (dotted lines).

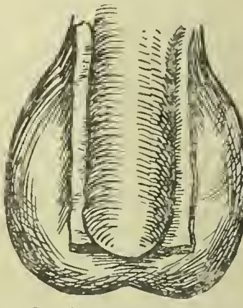
FIG. 2.



Showing flaps dissected up and everted.

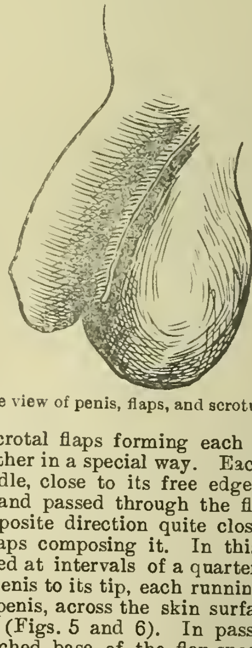
Two long strips, each presenting a raw surface half an inch wide, are thus produced on either side of the median strip of skin previously referred to, which is left undisturbed (Fig. 2). The flaps are held in the everted position with forceps throughout their whole length, and while in this position the penis is flexed down on to the scrotum in the middle line about a transverse axis passing through the misplaced urinary meatus (Fig 3). The median strip of skin on the ventral aspect of the penis and the raw areas flanking it thus come to lie on the corresponding median strip and raw surfaces on the front of the scrotum. The penile strip of skin will form a roof for the new urethra and the scrotal strip will form its floor. The raw surfaces on each side, when properly sutured, will cohere and grow together, fixing the penis to the scrotum and closing in the lateral aspects of the new urethral tube so as to render it watertight. The parts now present the following appearance. The penis lies on the front of the scrotum in the middle line like a complete web penis and on either side where they come together the opposed penile and scrotal flaps project so as to form a flange about a quarter of an inch in width, which extends from the root to the tip of the penis (Figs. 3 and 4).

FIG. 3.



Penis flexed on to scrotum with flaps everted.

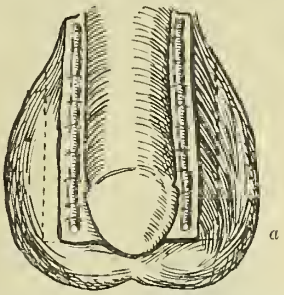
FIG. 4.



Side view of penis, flaps, and scrotum.

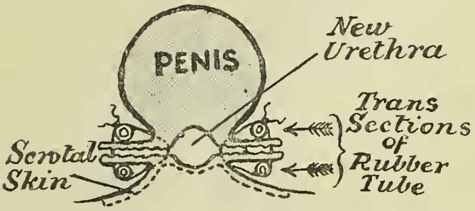
The penile and scrotal flaps forming each lateral flange are now sutured together in a special way. Each flange is transfixed by the needle, close to its free edge, and the needle is then reversed and passed through the flaps forming the flange in the opposite direction quite close to the attached borders of the flaps composing it. In this way a series of sutures are inserted at intervals of a quarter of an inch from the root of the penis to its tip, each running transversely to the axis of the penis, across the skin surfaces of the penile and scrotal flaps (Figs. 5 and 6). In passing each suture through the attached base of the flap special care is taken that the needle almost, but not quite, takes up the edges of the strips of attached skin, which will form the roof and floor of the new urethra, for it is important to approximate the epithelial margins without the suture projecting into the new urethral lumen (Fig. 6). All the sutures are passed before any are tied and before tying them two special manœuvres are carried out: (1) small rubber tubes are passed under the sutures on the front and back of each flange to avoid puckering of the skin and to keep up pressure over a broad area between the opposed raw surfaces of the flaps (Figs. 5 and 6); and (2) a small rubber catheter, with the eye cut off is passed along the track which will form the new urethra and pushed a short way down the previously formed urethra so as to drain off the urine without soiling the newly constructed portion. A suture at the tip of the penis fixes the catheter in place. The parts are dressed with lead lotion every four hours. On the fourth day the piece of catheter is removed and urine is allowed to pass down the new urethral tube. The sutures are all removed at the end of 14 days and the parts are ready for the second operation in from three to four weeks if the patient's condition is still favourable. Otherwise the second operation can be postponed indefinitely.

FIG. 5.



Shows penis fixed down on to scrotum and method of passing sutures through flaps over rubber tubes. The dotted line shows the outline of scrotal flap to cover in ventral surface of penis when dissected off the scrotum. *a*, Rubber tubes under sutures.

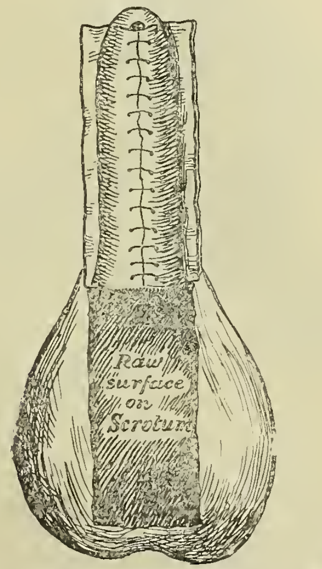
FIG. 6.



Scheme of suturing flaps round tubes to close urethra.

*Operation, second stage.*—The penis and new urethra are dissected up from the scrotum, lateral flaps derived from the scrotum being left attached on either side of the penis to close in the raw surface beneath it (Fig. 5, dotted line, and Fig. 7). Other flaps are formed on the scrotum; and by gliding them towards the middle line the raw surface on the front of the scrotum is easily closed (Figs. 7 and 8). If the lateral flanges used to unite the penis and scrotum in the first stage are seen to project too freely they can be trimmed off either now or later to improve the cosmetic result.

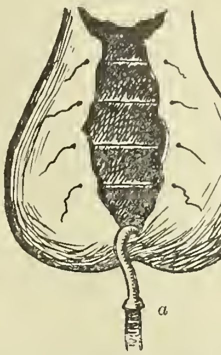
FIG. 7.



Penis raised from scrotum and flaps of skin sutured over.

I now propose to refer briefly to the cases in which I have performed this operation and afterwards to consider the advantages and disadvantages which the operation appears to possess.

FIG. 8.



Method of closing raw surface on scrotum after dissecting up penis and new urethra by dissecting up lateral flaps. *a*, Hook converting broad into narrow wound.

CASE 1.—The patient was a boy, aged four years. The misplaced urethral orifice was placed at the junction of the root of the penis and the scrotal raphé, the scrotum being uncleft. A well-marked median groove ran along the under surface of the penis, in the site where the urethra should have been. There was slight ventroflexion of the penis but no fibrous band tying it down. The false meatus was of good size.

CASE 2.—The patient, a boy, aged two years, presented much the same deformity as did the patient in Case 1, but the scrotum was slightly cleft above and the meatus was so narrow that a preliminary plastic operation had to be performed to enlarge it so as to admit of the insertion of a catheter at the time of the real operation and to obviate the possibility of a stricture at this spot when the new urethra had been completed.

CASE 3.—The patient, a boy, aged three years, exhibited a very similar condition to that described in Case 1. His physical state was not good and consequently the first stage of the operation was done *à deux temps*, the half of the penis near the root being dealt with at one operation and that nearer the tip being sutured down to the scrotum at another, and the whole tube being subsequently dissected up in the usual way at a later operation.

The first two cases were treated five years ago and the third two years ago. The first two were followed for three years and remained as satisfactory in every way as could be desired. All the cases healed without delay and there was never any leakage or tendency to stricture.

The advantages which may be claimed for this method of operating are as follows: 1. That it is performed in two stages, each of which can be rapidly accomplished. This lessens shock and enables the operation being done at an early age, the ultimate plastic result being all the better in consequence. 2. That the skin utilised to form the roof and floor of the new urethra is not dissected up or even touched, consequently it retains its vitality and does not tend to slough as when flaps are used for this purpose. 3. That no sutures project into the lumen of the new urethra. 4. That the skin of the roof and floor of the new urethra is respectively in continuity with the roof and floor of the previously existing one. There is in consequence no tendency to the formation of a fistula or subsequent stricture at the site of the false meatus as so frequently happens when other methods are employed. 5. No buried sutures are necessary and the apposition of the broad raw surfaces afforded by the flaps on either side, supported by the rubber tubes, prevents any tendency to leakage.

The disadvantages to be considered are two in number: (1) that the operation is only applicable if the scrotum is uncleft; and (2) that hair may possibly grow later on in life from the skin of the scrotal raphé which is used to form the new urethral floor. The former disadvantage is minimised by the fact that by far the larger number of cases of hypospadias are of the penile variety, and that should the scrotum be cleft as well the greatest trouble is not so much due to the deformity as to incontinence of urine which is incurable.

With regard to the possible growth of hair in the urethra leading to trouble there are several points for consideration: 1. If the strip of skin on the ventral aspect of the penis is cut wide so as to form the roof and sides of the new urethra, while that on the scrotum is narrower, so as to include little more than the raphé, it is evident that if hairs do develop they will be few, as the raphé grows few or none in ordinary circumstances. 2. If the operation is done early may not the character of the epithelium be altered by environment and hair fail to develop? 3. Would the growth of hairs lead to trouble: as in cases where the skin of the pubes is utilised to form the front of the bladder in extroversion? In the first place, operations for extroversion are done at a later age when the hair has started to grow; secondly, the growth of hair is more exuberant here than on the scrotum; and thirdly, the great trouble caused by the hair in extroversion is due to alkaline decomposition and phosphatic deposit, due to the ill-formed bladder leaking and becoming infected. In a properly repaired urethra no such leakage would occur and alkaline decomposition would, I venture to believe, be unlikely to arise.

Devonshire-street, W.

---

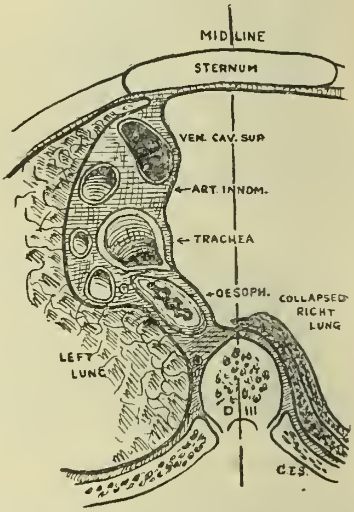
# ON THE DISPLACEMENTS PRODUCED BY PLEURAL EFFUSION.

BY G. ELLIOT SMITH, M.A. CANTAB., M.D., CH.M. SYD., F.R.S.,
PROFESSOR OF ANATOMY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE, CAIRO.

IN this communication I propose to describe the alterations in the topographical relations of the thoracic and abdominal viscera that may be produced by the effusion of fluid into the pleural sac. This is merely one part of a comprehensive study of the displacements of viscera that occur under physiological and pathological conditions which has engaged my attention for some time past. The discussion of the significance of "Grocco's triangle" which has appeared in recent numbers of THE LANCET has induced me to send these notes on the effects of pleural effusion as a contribution to the argument. I do not pretend to discuss the main points raised in the ingenious explanation of the physical signs of pleural effusion offered by Dr. F. W. Forbes Ross in THE LANCET of June 29th last, p. 1773, but the accurate record of the actual state of affairs in extreme cases of pleural distension cannot fail to be of value in such a discussion. As a rule physicians can form a mental picture of the topographical anatomy of the body cavity under pathological conditions only by inference from the physical signs, and anatomists are apt to draw conclusions as to what may happen when disease attacks the body merely from a study of the normal structure. In these notes I propose to describe what *actually* has happened in cases of pleurisy, when the patients have died untreated and the parts have been preserved and fixed in the positions which they occupied in life. Such an investigation has been rendered practically feasible only by the possession of such a fixative as formalin and by the opportunity of examining material which, in most countries, is available for such purposes only on the rarest occasions. In Egypt it is quite common for patients to pursue their ordinary occupations even when subject to the most serious diseases. Such patients are frequently brought into hospital in a moribund state after having been found in a helpless condition by the police and the unclaimed corpses of many of these people often find their way into the dissecting room. These frequent opportunities for studying the effects of disease on the anatomy of the body have been of the utmost value in teaching applied anatomy and many of the facts brought to light in conducting these classes seem to be of sufficient importance to impart to a larger audience. It will conduce to lucidity of exposition if, instead of describing what happens in a series of cases, I give a concise account of the condition found in one case of extreme distension of the right chest. From this it is easy to infer what happens in less advanced cases or in a lesion of the left side.

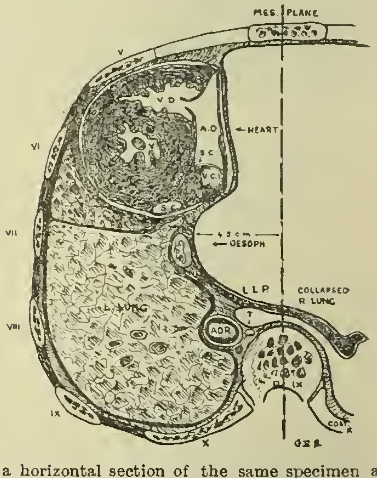
The patient was an adult Egyptian peasant who was brought to the Kasr-el-Ainy Hospital in a moribund condition and died without any treatment. My colleague, Professor A. R. Ferguson, has examined my specimens and tells me that this is a case of simple pleurisy with serous (non-purulent) effusion. The body was preserved within six hours after death (in mid-winter) by intravascular injection of 10 per cent. formalin. This fixed all the organs and tissues *in situ* and firmly coagulated the pleural fluid. The left pleura was almost universally adherent to the lung, which was healthy except for the presence of one very small caseous patch. The right lung was completely collapsed (Figs. 1 and 2) and was lying on the right side of the bodies of the vertebræ (from the third dorsal to the ninth dorsal inclusive). It extended so low only because an adhesion moored the lower end of the organ to the diaphragm. Apart from this collapsed cake of lung there was nothing whatever in the right half of the thoracic cavity, the heart and other thoracic viscera being pushed right over into the left half (Figs. 1 and 2) and the liver being depressed so far that no part of it remained within the costal cage (Fig. 3). Not only was this so, but the right pleural sac extended into the left side of the chest in the region between the second and sixth ribs (seen from the front, as in Fig. 3), and opposite the fifth costal cartilage or the ninth dorsal vertebra (Fig. 2) it reached 4·5 centimetres beyond the mesial plane, forming a pocket behind the pericardium. Behind and on the right side of the liver the right pleural sac pushed the diaphragm beyond the limits of the costal margin (Figs. 3 and 4) in the form of a large sausage-like roll (Fig. 4, post-hepatic pleural sac) bent into a U-shape. In exposing the pleura from behind this sac was seen to extend two centimetres below the last rib.

FIG. 1.



A horizontal section through the superior mediastinum at the level of the third dorsal vertebra in a case of distension of the right pleura. The collapsed upper and middle lobes of the right lung are seen.

FIG. 2.



Part of a horizontal section of the same specimen at the ninth dorsal vertebra. A O R, Aorta. A D, Right auricle. S C, Coronary sinus. V D, Right ventricle. T, Thoracic duct. V S, Left ventricle. L L P, Ligamentum latum pulmonis.

After this general account of the results of the distension of the right pleural cavity let us briefly consider seriatim its effect on the heart and great vessels, the trachea, œsophagus, the mediastina, the diaphragm, the liver, and the right kidney. The heart was shifted so as to lie wholly to the left of the mesial plane; in fact, the right edge of the right auricle formed a vertical line from the third to the sixth *left* costal cartilages about one centimetre to the left of the sternum (Fig. 3) instead of being on the right side of the right border of that bone. The apex of the heart was shifted downward to the extent of one intercostal space and outward to about the same amount. The transverse diameter of the organ was considerably reduced, chiefly by lateral compression of the right auricle (Fig. 2). The opening of the inferior vena cava in the diaphragm had moved across the mesial plane to the left side (Fig. 4). The vessel which it transmited opened into the right auricle opposite the tenth dorsal vertebra. The aortic arch was rotated to such an extent that the three large arterial trunks springing from it came to be placed at their origin in the same sagittal plane, which was more than five centimetres from the mesial plane (Fig. 1). To reach its destination the innominate artery crossed obliquely behind the whole extent of the manubrium sterni (Fig. 3). The dragging of the large muscular portion of the crura of the diaphragm towards the left (Fig. 4) had compressed the aorta (A O R) to a flattened tube. This must have offered a considerable resistance to the flow of blood. The vena azygos major (to the right of the thoracic duct, T, in Fig. 2) was reduced to a very small size in the lower part of the thorax; and in the aortic opening of the diaphragm and in the neighbourhood of the superior vena cava no trace of this vessel could be found. In the whole of its course the thoracic duct was placed well over on the left of the middle line (Figs. 1 and 2, T) and the descending thoracic aorta had undergone a corresponding displacement. The œsophagus was slightly shifted to the left, even at its entry into the thorax, and became more and more pushed aside (Figs. 1, 2, and 4) as it descended, until in the lower part of the thorax it was as much as five centimetres from the mesial plane. At the same time, it became dragged away from the vertebral column (Fig. 2) and lay close to the pericardium at the anterior end of the long, attenuated posterior mediastinum. Although the right side of the œsophagus was everywhere flatter than the rest and had obviously been submitted to great pressure there was nothing to lead one to suppose that the permeability of the tube had been in any way affected.

FIG. 3.

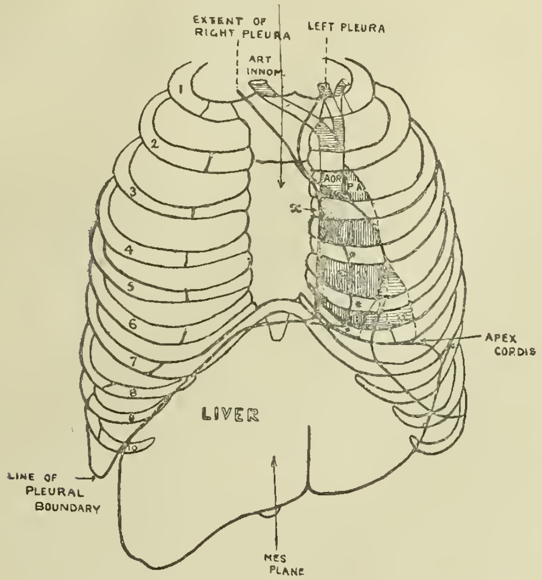


Diagram to show the lines of pleural reflection and the positions of the heart and liver. $x$ * * * shows the left limit of the post-cardiac recess of the right pleural sac.

FIG. 4.

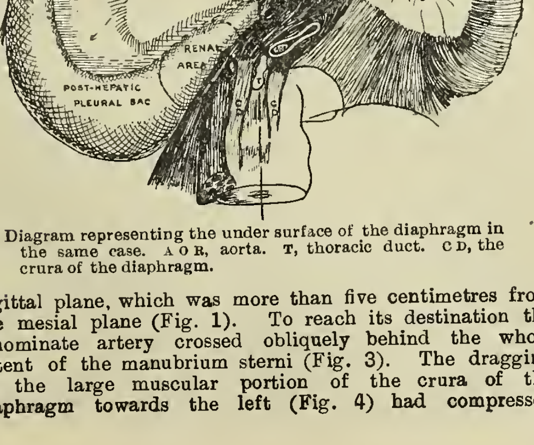


Diagram representing the under surface of the diaphragm in the same case. A O R, aorta. T, thoracic duct. C D, the crura of the diaphragm.

The trachea was not only pushed well over to the left but was also distorted (Fig. 1). The mediastinal spaces were all markedly compressed from side to side and were pushed bodily to the left with all their contents (Figs 1 and 2). The pushing forward of the heart resulted in a great antero-posterior elongation of the posterior mediastinum, which became in section (Fig. 2) a narrow band of areolar tissue passing obliquely from the vertebral column to the pericardium. The liver was pushed completely out of the right side of the thoracic cage, and its supero-antero border, which was also the uppermost crest of the organ, exactly coincided with the right costal margin (Fig. 3). The upper surface of the organ was flattened and formed a plane passing obliquely back from the costal margin toward the twelfth rib. The under surface of the corresponding area of the diaphragm is shown in Fig. 4. The liver was shifted downward and to the left; it passed further under the left wall of the chest than is normally the case (Fig. 3), but by far the greater part of its anterior surface was in direct contact with the anterior abdominal wall in the epigastric, hypogastric, umbilical, and right lumbar regions. The organ was pushed so far to the left that the gall-bladder was brought into the middle line. It was also displaced and slightly rotated forward by the extension downward of the pleural sac behind it (Fig. 4). One result of this was an undue prominence of the Spigelian lobe which formed a very large forwardly projecting boss on which the pyloric canal of the stomach was supported when the body was in the recumbent position. The left lobe of the liver came in contact with the spleen so that only a very small part of the stomach was actually in contact with the "gastric area" of the diaphragm (Fig. 4). The post-hepatic pleural sac pressing on the right kidney had pushed it downward and inward and had distorted its form. As the pleural cavity began to expand it left the posterior surface of the kidney and pushed its way down *in front of* the organ. At the same time the upper end of the kidney became truncated and moulded to the form of the angle between the right crus of the diaphragm (Fig. 4, C, D) and the pleural bag (Fig. 4, *renal area*). The right suprarenal capsule became wedged into the deep recess of the same angle and had become greatly compressed. The great splanchnic nerve (see Fig. 4, between the right crus (C, D) and the renal area on the pleural sac) was considerably larger than usual, as though it had become swollen by inflammatory infiltration. From the combined effects of stretching and the consequent disuse of the right half of the diaphragm the muscular tissue had undergone degenerative changes. Infiltration with inflammatory products might have had some share in causing this, for the hepatic and post-hepatic areas of the lower surface of the diaphragm were covered with a thick layer of lymph. The pericardium also contained more than the normal quantity of lymph, which is not surprising when we recall what a large area is exposed to the inflamed pleura (Fig. 2). In Fig. 3 the lines of pleural reflection have been shown and in addition a line (* * *) has been drawn from the point $x$ on the third costal cartilage outward and downward across the midpoints of the left fourth, fifth, and sixth costal cartilages to indicate (in relation to the anterior thoracic wall) the extent of the retrocardiac diverticulum of the right pleura. If a chart were drawn to show the relation to the back of this left extension of the right pleural sac it would be found to present a considerable resemblance to "Grocco's triangle." Its broad base would be found just above the twelfth rib and it would taper gradually up to the second dorsal vertebra.

That this is the explanation of "Grocco's triangle" I do not for a moment pretend; but that it may be a factor of some importance in producing left-sided dulness in right-sided effusions must be patent to everyone who studies the accompanying diagrams.

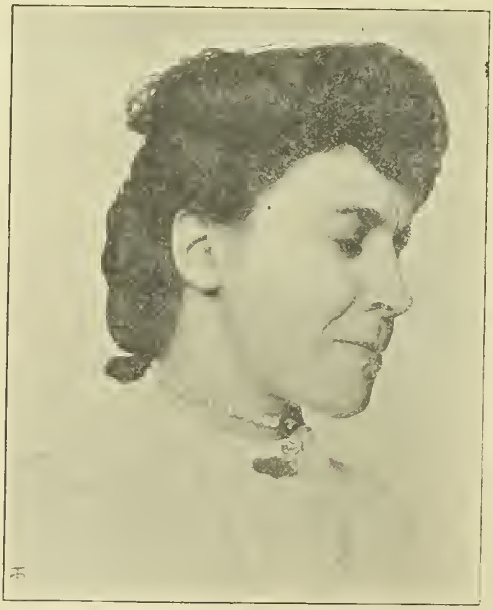
Cairo.

## EXCISION OF THE PAROTID GLAND WITH PRESERVATION OF THE FACIAL NERVE; ITS POSSIBILITY.

By T. CARWARDINE, M.S., M.B. LOND., F.R.C.S. ENG.,
HONORARY SURGEON TO THE BRISTOL ROYAL INFIRMARY.

AS far as I am aware there is no recorded attempt to remove the whole of the parotid gland with the preservation of the facial nerve. The following example, in which the operation was performed successfully, may encourage others to preserve the movements of the face in certain cases when removing the parotid gland. The question is rather an important one; for, unlike the conditions which obtain when the main trunk of the facial nerve is injured, there is no possibility of performing any kind of nerve anastomosis after injury to the ramifications of the facial nerve passing through the parotid gland. The distal filaments are too small to join with any other motor supply.

In 1905 a girl, aged 18 years, was under my care for a mixed tumour of the parotid gland which was shelled out so as not materially to damage the nerve. But it commenced to return two months afterwards and the patient came under my care again in May, 1906, with a tumour of the size of a large walnut. I proposed to her that I would make the attempt to dissect up the facial nerve and its branches first, and then to remove the whole of the parotid gland. By patient dissection with small sharp scalpels the nerve was successfully freed and held up by a loop of catgut, then the vessels were tied above and below, and the whole gland was completely excised. One or two distal filaments were accidentally ruptured, but the greater part of the nerve was preserved. Following the operation there was temporary facial paralysis, but in a couple of months the patient had twitchings at the angle of the mouth and kinæsthetic sensations. In about four months she had some movement of the facial muscles about the eye and mouth. A year afterwards she had good control of the facial muscles of that side, with very occasional slight twitchings. At this time very little inequality in the movements of the two sides of the face was discernible and the extent to which the patient could move the facial muscles of the side of the operation is depicted in the accompanying reproduction of a photograph which was taken during the phase of contracture.



Patient after operation, showing the extent of contraction possible in the facial muscles.

The operation requires the expenditure of considerable time and care but the cosmetic results repay the trouble.

Bristol.

## THE INCREASE OF DISEASES OF THE NERVOUS SYSTEM AND OF INSANITY.[1]

BY WILLIAM W. IRELAND, M.D. EDIN.

IT is a subject of common remark that in the present day there is a greater strain upon the nervous system, and this begins at an earlier period of life. The overtaxing at the schools, the increased amount of irksome study men have to go through in order to gain entry into the professions, the greater anxiety and hurry of life, the restlessness induced by the increased facilities of intercommunication, are all additional causes of irritation and depression. There is a craving for a variety of excitements and enjoyments, and a growth of artificial wants and a greater difficulty of earning sufficient wage and keeping up under incessant competition. The diffusion of education amongst all ranks, the struggles of aspiring persons amongst the poorer classes to rise in the world, the discontent and bitter wars of labour, entailing many disputes and frequent strikes and breaches of contract, the spread of the coöperative movement which is rendering the position of the private shopkeeper more difficult to hold, and the formation of big companies which crush out small businesses,—all these and some social antagonisms on which we have no time to dwell go to make this a harder and less agreeable world to many. At the same time the new conditions of our to-day life are not without their compensations. If we move about more we obtain more frequent amusement and change of air; if letters or telegrams too often claim our attention and disturb our repose, they often banish uncertainty and anxiety. Sounder views on dietetics have become known and drunkenness has become less prevalent. The decrease in intemperance in liquor amongst the middle and upper classes during the last half century has been very marked, and there is reason to believe that this decrease is extending to the lower classes. In general, we lead more secure lives than our fathers did, live under better laws, and have less to fear from injustice and oppression. There can be no doubt that during the last half century the condition of the working classes has greatly improved, their wages are doubled, while the purchasing power of money has increased for most articles, and they live under much better sanitary conditions. The result has been a notable diminution of the death-rate both in England and Scotland during the last quarter of the century. Nevertheless, it appears to me that the strain upon the nervous system is getting greater, at least for the middle and upper classes, and that therefore we may expect more nervous derangements and breakdowns. But to make a general opinion like this evident by exact inquiries is, on the face of it, very difficult.

Seven years ago I addressed to a number of medical men of experience and reputation the following queries: 1. Have you found since you began to practise medicine that there has been an increase in the relative frequency of diseases of the nervous system? 2. Have new forms come into prominence? 3. Have you observed any change in the type of old diseases? The answers which I received were far from settling the questions. Some physicians of great experience stated that they had noticed no increase in the relative frequency of nervous diseases; others were of opinion that nervous diseases had increased in frequency during the last 20 years. From all the answers which I have received I should judge that there has been no noticeable increase in nervous diseases in the country districts and in small towns, but there is some evidence that there has been an increase in those complaints in large towns, especially in functional disorders such as neurasthenia. Probably this increase affects some classes and persons of special pursuits more than others. Dr. Halliday Douglas, long physician to the General Post Office at Edinburgh, saw many cases of nervous derangements and failures of health among the employees, especially those who did their work under high pressure. The female clerks often required leave of absence from illness. I have learned from several sources that monotonous work demanding severe and unremitting attention is most trying for the nerves and assists in causing mental derangement. Thus nervous diseases and insanity are especially common with telegraphists, letter sorters, and persons who have to check mechanical labour. The employments of the present day tend more and more to replacing work needing strength for the watching and direction of the play of machinery. The wear of the nervous system replaces the wear of the muscles.

---

[1] A paper read at the International Congress of Psychiatry and Neurology, at Amsterdam, on Sept. 5th, 1907.

*The increase of the grosser forms of nervous diseases in Great Britain.*—In examining the statistics of the mortality from nervous diseases in the Register Office of Edinburgh, through the courtesy of the late Dr. Blair Cunynghame, and his successor, Dr J. C. Dunlop, one thing appeared to me at the outset—that those diseases of the nervous system which are assigned as causes of death are less frequent in Scotland than in England. To quote the Registrar's report: "While in Scotland in 1857 only 170 died of brain and nervous diseases in every 100,000, in England during the same year 273 deaths occurred in a like population from the same causes, and year after year the relative proportions remain somewhat the same in the two countries." The general death-rate for Scotland was in 1855 20·6 per 1000; in 1906 it was 15·993. In Scotland there died from brain and nervous diseases in 1855, 168 persons to every 100,000 of the population; in 1865, 179 persons; in 1875, 217 persons; in 1885, 231 persons; and in 1897, 221 persons, the increase from 1855 thus amounting to 53 persons, about one-third of the first number. The proportion of deaths in every 100,000 persons from diseases of the nervous system was: in 1855, 818; in 1875, 930; in 1885, 1210; and in 1897, 1109. In the report for 1897 we are told that from diseases of the brain and nervous system there were 9257 deaths, giving a mortality-rate for Scotland of 221 in every 100,000 and forming 11·79 per cent. of the total deaths. The rate for Scotland is exceeded by the principal and large town districts; the lowest fall in the insular and rural districts. One can only guess at the efficacy of the causes of nervous diseases in the gross. Drunkenness should be a potent factor, but there has been noted a decrease in the number of deaths from delirium tremens and chronic alcoholism in the last 30 years. And the excise returns of late years have shown a considerable diminution of the consumption of spirituous liquors. The number of deaths from diseases of the urinary organs has doubled from 1855 to 1897. Diseases of the circulation had also doubled during the same period. The mortality from pulmonary tuberculosis has during the last half century sunk by about one-half.

I did not make the same careful examination of the vital statistics of England, as this had been done in the book of Dr. A. Newsholme on that subject published in 1899. He showed that there is a great improvement in public health as indicated by a lower death-rate, commencing in 1872: it fell from 22·6 per 1000 down to 17·4 in 1897. Dr. Newsholme says that "it is doubtful if the increased strain of modern life exists in the community as a whole. Assuming, however, that over-pressure exists in certain stations of life—e.g., among city merchants, medical men, &c.—it cannot be said generally to exist among professional men; clergymen, lawyers, and civil servants are as classes long lived." But clergymen and civil servants generally lead easy lives and it is likely that anxiety and over-pressure may be felt less by the lawyers than by their clients. "Even assuming," goes on Dr. Newsholme, "that over-pressure exists throughout the whole of the professional classes, these do not form the mass of the community. The majority of the population of England and Wales belong to the wage-earning classes and the condition of these classes will therefore necessarily have the greatest influence on the total result." It is easy to prove that the working classes are now in a more prosperous condition than they were half a century ago. Dr. Newsholme, however, showed that there is a high death-rate from diseases of the nervous system amongst barristers and solicitors, railway stokers, and medical practitioners. Diabetes, a disease connected with disorders of the nervous system, has steadily increased, as also have renal diseases, which are high amongst medical men, lawyers, and innkeepers. Diseases of the nervous system show a death-rate per 1,000,000 of 1546 in 1861–65, and of 1600 in 1891–95. Dr. S. A. K. Strahan, in his book upon Suicide and Insanity (published in 1893) called attention to the fact that while the general death-rate for England and Wales has fallen 16·4 per cent. during the past quarter of a century, a rise, in some cases amounting to over 100 per cent., has taken place in the death-rates from hereditary and degenerate diseases. From a table compiled by Dr. Strahan it appeared that the death-rate in England and Wales in the 25 years between 1866 and 1890 had increased for nervous diseases by 10·2 per cent.; from diabetes, 103; from kidney disease, 63·4; and from heart disease, 65·9.

From these statistics it seems to me that it is not going in advance of the evidence to pronounce that the graver forms of diseases of the nervous system have increased in Great Britain, as they are said to have done in France and Germany, during the last 50 years. In Scotland there seems to have been some stoppage in the increase from 1885 to 1905, which, I hope, indicates that the rise of the death-rate from these maladies is not fatally progressive.

*Increase of suicide.*—Since the publication of Morselli's classical work "Il Sucidio" the attention of sociologists has been directed to the portentous increase of suicides in Europe and North America. This is most marked in large cities and seems to be progressing in every country in Europe save Norway. In the German empire the number of cases of self-destruction has risen from 10,510 in 1895 to 12,730 in 1905. According to statistics recently published by the Swiss Government there have been during the last 35 years 16,640 suicides in Switzerland, 323,600 suicides in Germany, and 274,000 suicides in France. It has been calculated that the yearly number in the whole of Europe amounts to 70,000. In Massachusetts it has increased in 30 years from 69·9 to 90·9 to the million living, and in Connecticut from 60·6 to 103·3 per 1,000,000. Dr. Charles Pilgrim,[2] the President of the New York Commission in Lunacy, tells us that Mr. Hoffman, statistician to one of the greatest insurance companies, made a compilation of the statistics of suicide relating to 50 American cities. From year to year the same sad story is told of an increasing propensity to self-destruction. In 1890 the ratio was 12, in 1900 it was 16, while in 1904 it had risen to nearly 20 per 100,000 of the population. In the British Islands the suicides have increased by 200 per cent. in 50 years and by 150 per cent. in 25 years. The following figures indicate the increase in England and Wales during the decade 1885–1904, inclusive:—

| | In 1885 | | 1904 |
|---|---|---|---|
| Men ... ... ... ... | 1529 | ......... | 2523 |
| Women ... ... ... | 478 | ......... | 822 |
| | 2007 | ......... | 3345 |

While some suicides are returned as having been drowned or killed by accident, few accidental deaths are registered as suicides. Altogether the stray errors and omissions in the registers are not sufficient to vitiate the general results. As the causes which tend to induce suicide are the same as those which go to produce insanity, greater sensibility and irritability and a lessened power of reaction, it is not surprising that those who have committed themselves by denying that insanity is increasing should be ready to question any rise in the number of suicides. Their position is incongruous, for as they advance that the increase in the number of registered lunatics is partly owing to the increased number of admissions of the early and milder cases of mental derangement they have to escape the awkward question, Why since many of these cases are of a pronounced suicidal character is there not a decrease instead of an increase in the gross number of suicides? The number of suicides committed under insanity have been variously estimated as between 20 and 30 per cent.; by others much lower. The number of attempts at self-destruction in an asylum is very large.

In Scotland the rise from 1865 to the quinquennial period of 1890–94 has been stated to be from a rate of 40 to a rate of 54, an increase of 35 per cent. From my own inquiries I have found that in 1881 there were 182 suicides in Scotland—131 males and 51 females—out of a population of 3,735,573, giving a proportion of 48·7 to the million. During the quinquennial period within the years 1881–85 the mean annual number of suicides was 202, equal to 52·05 to the million. In the quinquennium 1886–90 the mean number of suicides was 227, giving 56·4 per 1,000,000. In 1905 the number of suicides had risen to 305, being 65 to the million.

---

[2] American Journal of Insanity, January, 1907.

*Increase of insanity in England.*—The steady and progressive increase of the number of the insane throughout Europe has attracted popular attention. Much of this increase is due to the collection of lunatics in special asylums, and to their accumulation, owing to better care giving some of them a longer life; but this fails to explain the whole rise, and physicians like Koch, Kollman, Cettingen, Lunier, and Kraepelin, who have devoted much time and care to examine the statistics, have come to the conclusion that there has been a real increase in the absolute number of the insane. Unhappily the Commissioners in Lunacy for England long ago took a different view, and as the number of lunatics they had to deal with perversely kept on increasing, they have had much care to explain away their own statistics. There were always some men well acquainted with the subject to show that there was a real increase, and the phenomenal rises in the number of official lunatics in 1897 and 1898 opened many eyes. In 1897 there was an increase of 2919 registered lunatics in England and Wales and in the next year an increase of no fewer than 3114. The rise in the number of general paralytics was very marked. In 1859 there were in England and Wales 36,762 certified insane persons—one official lunatic to every 536 persons; in 1869 there was one to every 418; and in 1879 one to every 363. In 1889 there was one registered lunatic to every 337 persons, and in 1893 it was one in 302. In 1906 there was one lunatic to every 283 persons, the proportion being 35·31 per 10,000 of the population, whereas in 1859 it was only 18·64 to the 10,000. The increase since 1859, in proportion to the general population of the country, has been 231 per cent., while the increase of the population has only been 75·4 per cent.

The Commissioners in Lunacy have no means of ascertaining the total number of the insane in England beyond the census returns. They themselves observe in their report for 1904 that they have no detailed information of those pauper lunatics who are in workhouses or in receipt of outdoor relief or are residing with relatives. The admissions to lunatic asylums have risen from 4·71 per 10,000 of the population in 1869 to 6·56 in 1904. Unfortunately we cannot learn how many of these were readmissions.

*England.*

Census 1871 = 69·019 of the insane.
1881 = 84·503
1891 = 97·383
1901 = 132·624

Turning to the census returns we find a full confirmation in the increase of the number of insane persons in England and Wales. In 1871 there was stated to be one insane person to every 329 of the population; in 1881 there was one insane to every 307; in 1891, one to every 298; and in 1901, one to every 245 sane persons. The Commissioners observe that comparing the ratios in the census of 1891 with that of 1901, the increase in the ratio of the insane fraction of the population was 10·9 per cent. (males 12·2 and females 9·7) and they maintain that the growth of the insane was practically confined to the "pauper" class.

Dr. George H. Savage, in his third Lumleian lecture before the Royal College of Physicians of London,[3] gave as his opinion:

> "There is sufficient evidence to show that there is a steady increase in the numbers of the insane in England, Ireland, and Scotland, though in the most recent reports there has been shown to be a reduction in the proportion of insane recognised, but I shall point out reasons for the apparent reduction. Among the more wealthy in England particularly there is a growing disinclination to send their insane relations into asylums. There is certainly no change in relationship to the feeling against asylums and against certification. With the more educated the dread of the transmission of insanity is very great, but if the malady is called by any other name and treated by other than alienist physicians people are satisfied."

Dr. W. H. Bowes[4] agrees with the general impression that there is some increase in insanity, but not enough to create alarm. He points out that there is in a report on the high rate of lunacy in Yorkshire[5] a much larger proportion of insane to sane among the agricultural labourers than among miners and city dwellers. He shows that for 30 years the agricultural counties have shown most pauperism and most insanity. He thinks that marrying in and the poorness of the living and generally depressing vital conditions account for this.

*Increase of insanity in Scotland.*—The same steady increase in the number of the insane has been going on in Scotland as in England, and there was the same startling rise in 1897 and 1898 which distanced all arithmetical explanations. It is stated in the lunacy report for January, 1906, that since 1858 the number of lunatics under the jurisdiction of the Scottish Lunacy Board has increased by 200 per cent., while the increase of population during the same period has been 56 per cent. In their report for January, 1906, the Commissioners made the pleasing announcement that for the first time there was a retardation in the increase of insanity in proportion to the population during the last three years. In 1906 the number of registered insane (including some imbeciles in institutions) was 17,450; of these 2549 were maintained from private sources, 14,850 by parochial rates, and 51 by the State. This showed an increase of 209 from the preceding year, but allowing for the growth of the population the Commissioners claimed that there was no relative increase. In the proportion of private patients, which had been steadily but slowly rising, the rate of increase was also arrested. During these years the death-rate was considerably higher and there was a falling off in the numbers discharged recovered and unrecovered.

In assuming a decrease in the number of the insane the Commissioners take no note of the numerous patients admitted and treated in the new Glasgow observation wards from their commencement in June, 1904, till May, 1907. These are not certified as lunatics. It is difficult to bring the returns, as they have reached me, into one plane with the Lunacy Blue-book. Let us give an example: from June 15th, 1904, till May 15th, 1906, there were 1077 admissions to the new wards in the Glasgow parish hospital. Of these only 302 were certified and transferred to the asylum, leaving a total of 735 discharged (recovered, improved, or by death) and 40 remaining in hospital. But for the existence of these wards the 735 discharged would all, or almost all, have been certified insane at the very outset and sent to the asylum. The Commissioners' statistics would have been increased accordingly.

Making a wide allowance for deductions and eliminations it may be said that 320 of these patients would have been certified and have been included in the Commissioners' return. We may distribute these 320 patients as follows: June to December, 1904, 80; January to December, 1905, 160; and January to May, 1906, 80. We have also to count the uncertified patients treated in the Govan parish wards which were opened on August 29th, 1905. If these returns be included it is clear that instead of there being a retardation in the number of insane persons in Scotland the augmentation is still going on.

It is disappointing to know that in spite of all the money spent on buildings and furnishings, the care, medical skill and research, and official inspection, there is no increase in the proportion of recoveries in the British asylums and the death-rate is not diminishing. In some Scottish asylums receiving patients from large towns the rate of mortality has been rising, which is attributed to a worse set of cases coming in. The deaths from diseases of the nervous system for every thousand of the average numbers resident have been increasing in the Royal Asylum of Edinburgh for the last 33 years. During the past five years up to 1905 the mortality has been 65·8 and in the year 1906 it reached the unprecedented figure of 85·7 per 1000, or more than double the old proportion. The average number of deaths for the same kind of cases for the whole Scottish asylums is stated to be 33·4. As Dr. T. S. Clouston remarks in his able Annual Report for 1906: in Scotland "deaths from diseases of the nervous system are increasing in the general population in modern times; but that increase is small as compared with this increase of fatal nervous diseases sent to asylums from Edinburgh. No doubt it is one of the problems of modern life to keep the nervous machine going at high pressure and at the same time to prevent its breaking down prematurely."

*Increase of insanity in Ireland.*—The inspectors of lunatics have had to record an increasing number of the insane with a decreasing population. From the census returns from 1851–1901 the population of Ireland fell from 6,552,385 to 4,458,775—that is, 32 per cent., while the number of the insane rose from 9980 to 25,050, or 151 per cent., and the ratio of insane to population from 15·2 to 56·2 per 10,000, a rise of 267 per cent. The proportion per 100,000 of the population of patients in public asylums rose from 167 in 1880 to 410 in 1903. From 1884 to 1903 the average ratios of first admissions per 10,000 of population were for the four five-year periods 4·7, 5·3, 5·8, and 7·0 respectively, denoting an increase in the second quinquennium over that of the first of 12·7, in the third of 9·4, and in the last of 20·0. The death-rate in the Irish asylums is low.[6] Some of this increase is put down to the reduction of the population by emigration of the mentally fit and partly to the return of emigrants suffering from mental breakdown; perhaps some of these have not been allowed to land in America. It is too easy an assumption to say that the emigrants all belong to the mentally fit, for it has been observed that the proportion of insane among the Irish admitted into the State asylums in America is more than double those of other nationalities. The Irish Lunacy Blue Books give a powerful support to the belief in the absolute increase in insanity.

---

[3] As reported in Brit. Med. Jour., March 30th, 1907.

[4] Journal of Medical Science, April, 1899.

[5] In a report on the High Rate of Lunacy in Yorkshire, see Journal of Mental Science, April, 1899.

[After giving figures to show the increase of insanity in France, the Netherlands, and the United States, Dr. Ireland came to the following general conclusions:—]

*General conclusions.*—It has been argued in various journals that the increase of insanity is only apparent. With insular narrowness the writers confine their attention to the British Isles. They assign the increase of certified insane persons to the accumulation of chronic cases, to a diminished death-rate, to the straitened circumstances of relatives, to the greater readiness to grant admission to all cases of mental failure, aided by the 4*s.* grant from the Exchequer allowed 30 years ago to ease the poor-rates. Then they try to throw suspicions upon the census returns. To most of their objections no determinate value is assigned. They are magnified by rhetoric, and all pointed one way to bring out a case of not proven. All that they know is nothing can be known

It has been advanced by those who combat the belief that there is a real increase of insanity in Scotland that there is little addition to the number of private patients, the rise being mainly in pauper lunatics, but when one looks at the naked facts he sees that it could scarcely be otherwise. During the last 45 years the smaller asylums which took in those who could pay moderate boards have been squeezed out of existence. The few private asylums remaining are obliged to charge much higher, and the general expenses for the upkeep of the insane have much risen. For many years back it has been the custom that those bearing the burden of a lunatic relation who are anxious to pay what they can go to the inspector of poor who transmits it to the treasurer of the asylum. Thus, a considerable number of persons who would formerly have been private patients are now officially returned as pauper lunatics, although they are not really so. This no doubt makes it easier for people to get rid of the burden of supporting a lunatic dependent than formerly. Much stress is laid upon the greater willingness of the friends of lunatics to send them into asylums owing to the increase of confidence and the skilful and humane way in which asylums are now managed. This, of course, is an argument most pleasing to the superintendents of these institutions. It is capable of indefinite extension. A sudden leap upwards in the admissions only means that the public confidence in asylum stock had risen. I am far from insinuating that this increased confidence or lessened distrust is not what it should be, but I am doubtful of its extent and intensity. It is but a few years ago since, owing to a popular outcry of suspicion, the superintendents in England were shackled with a new Lunacy Act, bristling with galling restrictions and insulting returns. Few people know anything about asylums till some of their relations go mad and then they get them out of the house simply because they have become intolerable in it. What keeps them back from doing so is mostly the expense, which is assuredly not diminishing, for patients whose friends can pay. Moreover, the belief in the hereditary transmission of insanity and idiocy, so often reiterated by the medical press, has now fairly reached the popular mind. Nowadays the stigma of insanity is attached to the whole family, whereas formerly it was but attached to the individual. It is felt like an incapacity and a hindrance to marriages. Hence there is an increased unwillingness to make an admission of an ancestral taint by such an overt act as sending a member of the family into a lunatic asylum, with all the formal scrutiny and certificates required by the laws. That this has a considerable effect in keeping down the admission among the wealthier class I have no doubt. While granting something to all these explanations so ingeniously pleaded, it is the outcome of my inquiries that they fail to account for the whole increase of insanity. I should say that we have to deal with an advance along the whole line, an increase in nervous diseases, in suicides, and in lunacy.

In the well-known work "Psychiatrie," by Dr. Emil Kraepelin, I find a complete agreement with my views. I translate one passage: "On the other hand, regular census with us indicates with certainty a rapid increase of the insane which far overtops the general increase of the population. No doubt this rise is partly accounted for by the greater ease of the numeration and the better knowledge of insanity. Nevertheless, I believe we cannot any longer doubt that we have actually to reckon with a very considerable increase in insanity. This is proved, not only by the alarming increase in the number of the insane, but also by the simultaneous rise in the frequency of suicides and the contrast presented by the town and rural populations."

The learned professor observes that we are living in a time of transition and he hopes that coming generations will be able to enter on the stress and struggle of life with fresh strength and better weapons. We need not believe that this increase of diseases of the nervous system is destined to fatal progression; it may stop or it may retrocede ere long. It would be rash to assume that we are acquainted with all the causes, and the means of prevention are not entirely beyond our control.

Musselburgh.

# THE TREATMENT OF RHEUMATOID ARTHRITIS.

BY W. J. MIDELTON, M.R.C.S. ENG., L.R.C.P. LOND.

DURING the last six years, in treating rheumatoid arthritis, I have had recourse to counter-irritation of the spine by means of blisters applied in the neighbourhood of the cervical and lumbar enlargements and have found it a most useful therapeutic agent, perhaps *the* most useful, in dealing with this very intractable ailment. I have arrived at this conclusion, not only from the results which have been obtained in the treatment of some 20 patients of my own, but after personally examining a very large number of cases in London, Bath, Buxton, Matlock, and other places and comparing the results obtained there, following on the use of radiant heat, massage, diet, drugs, and mineral waters, &c., with my own.

This plan of treatment was recommended some years ago by Dr. P. W. Latham[1] of Cambridge, who bases his theory on the fact that "clinical experience has taught us that injuries to the spinal cord or even to the nerves of a limb will set up arthritic changes which cannot readily be distinguished from those seen in the earlier stages of rheumatoid arthritis." And secondly that "pathological facts appear to show that the trophic nerves of the bones and joints are found in the mixed nerve trunk, and that they issue along with the motor fibres from the anterior cornua of the spinal cord, where they are, like the muscular trophic fibres, connected with a group of large caudate cells," and that "it seems now generally admitted that both irritative and destroying lesions of the ganglion cells of the anterior horns of the spinal cord and their homologues in the medulla oblongata, pons, and crura, or of the efferent fibres which unite these cells with the periphery, may give rise to active atrophy of muscle."[2] From these pathological and clinical facts Dr. Latham infers that the changes in the joints and the muscular wasting which are characteristic of rheumatoid arthritis are due to irritative and destructive lesions located in the spinal cord and especially in the cervical and lumbar enlargements. With this theory as advanced by Dr. Latham I may not be altogether in accord, regarding the disease as I do as in some measure due to a cerebro spinal toxæmia. As to the beneficial effects, however, of this plan of treatment, when efficiently carried out, the notes of the following cases which have been under my care furnish ample and convincing evidence.

---

[6] Journal of Mental Science, January, 1907.

[1] THE LANCET, April 6th, 1901, p. 998. See also "Pathology and Treatment of Rheumatoid Arthritis," by P. W. Latham, M.D. Deighton Bell and Co. 1905.

[2] Ross: Diseases of the Nervous System, second edition, vol. i., p. 241.

CASE 1.—The patient, a married woman, 43 years of age, consulted me in December, 1900. Her family history was unimportant. She had always been active and sober. She had had no family. Many years ago she had typhoid fever. For some years she suffered from metrorrhagia. She underwent subperitoneal hysterectomy in 1897 on account of uterine fibroids. For several years she had had much anxiety on account of a sick husband, and was much weakened by the operation and all that had preceded it. About the middle of 1898 she began to notice tenderness in the feet, neuralgic pains in the limbs, and vague pains in the joints. About six months later she noticed distinct swelling of the wrists and knees, then of the finger-joints of both hands, and then of the ankles. By degrees every joint in the body became stiff and painful, including the intervertebral, temporo-maxillary, and sacro-iliac. 12 months later, notwithstanding treatment at Bath, Buxton, and elsewhere, she wasted to a mere skeleton and was unable to move hand or foot; she said her feet felt "dead" and she was provided with a water bed. She became very depressed and neurasthenic. Her digestion was bad, her skin was harsh and scaly, her fingers were wasted, and the skin over them was thin and glossy. She was unable to write or to do needlework and was pronounced by several medical men to be incurable. On March 18th, 1901, I persuaded her with some difficulty to try the effect of counter-irritation of the spine by means of blisters. Two were consequently applied, each 4 by 1½ inches in size, one on each side of the spine, the upper edges opposite the tenth dorsal vertebra, with a view to influencing the lumbar enlargement of the spinal cord. The blistered surfaces were kept discharging for 14 days by means of savin and resin ointments applied daily. On April 12th the patient said that the pain in the knees and legs was less and passive movements of the legs could be carried out with greater ease and thoroughness than before. On the 16th blisters of the same size were applied on each side of the cervical enlargement of the spinal cord. On the 19th she said that she had more sensation in her feet. The blistered surfaces were treated with savin and resin ointments as before and kept open for 14 days. On May 7th there was found to be all-round improvement. The patient wrote a long letter to a friend. It was the first time she had used a pen for over a year. On the 28th the knees were much less swollen. On June 19th she was much better and was allowed out of doors several hours daily. The digestion was better and she was gaining weight. On the 20th blisters were again applied to the lumbar region and treatment was carried out as before and afterwards to the cervical region. On July 18th the knees were much better; the right leg could now be straightened; it was much bent previously. On the 30th the patient was able to walk a little. On Sept. 16th she went to Buxton. "Chair patient." On Feb. 5th, 1902, she could do part of her own housework. In September she went to Buxton no longer a "chair patient" but saw several patients in chairs who had been able to walk the year before. The patient eventually resumed her household duties, even doing her own washing, and has kept well nourished and active ever since. I attribute this woman's recovery entirely to the action of the blisters.

CASE 2.—The patient, a married woman, had spent her early life in domestic service. When 30 years old her right knee swelled very much and was highly inflamed; this subsided under long-continued leeching and poulticing; it was probably of septic origin and was always stiff afterwards. The hip of the same side became painful but remained useful for many years. Later the opposite knee became gradually stiff and tender but was never much inflamed. By degrees all the joints assumed a rheumatoid condition until at last, at the age of 55 years, she was unable to do any work except a little light work about the house. On examination by me, on June 25th, 1905, the ankles, knees, and wrists were found to be much swollen, with ganglia on the tendons, and pouches of synovial swelling about the wrist. The finger-joints presented the characteristic fusiform swelling and the hands were much distorted. Pain was so great in the right hip that she was unable to lie on that side. She was just able to totter about. Her eyesight was very weak and she was obliged to wear spectacles. She had not been out of her bedroom for three years. She was treated by continuous counter-irritation to the spine as in the former case, and can now (August, 1907) go up and down stairs with ease; she walks out of doors and has gained considerable weight, can do needlework without spectacles, and says her health is splendid. No other treatment was tried in this case after applying the blisters, neither drugs nor special diet, as I determined to test what effect the blisters alone would produce.

CASE 3.—The patient, a married woman, aged 45 years, had had polyarticular rheumatoid arthritis following several attacks of rheumatic fever. She was obliged to give up her work as a charwoman. She was treated by continuous counter-irritation to the spine for one month from June 5th to July 3rd, 1905, and was cured. She resumed work and has kept at it for upwards of two years. She is now in excellent health.

CASE 4.—The patient, a man, aged 74 years, had polyarticular rheumatoid arthritis of several years' duration. He gave up all work at the end of 1905. He was treated by continuous counter-irritation to the spine for 24 days in March, 1906. He had no other treatment whatever. He was greatly benefited and resumed his work as a road-sweeper in May, 1906.

CASE 5.—The patient was a housemaid, aged 40 years. She first noticed rheumatoid symptoms 20 years ago. She was at last obliged to give up work on account of pain and weakness. She had tried practically every known kind of treatment at Bath and elsewhere, including Tallerman treatment, which produced little benefit. Normal perspiration even in summer had been suppressed during the last three years. Her skin was dry. Eventually she consulted me in January, 1907. She was treated by continuous counter-irritation to the spine for one month from February to March. No other treatment was tried. All pain and swelling disappeared and normal perspiration returned. She returned to, and is still at, work. She reported a short time ago (June 23rd) that her health continued to be satisfactory. She was able to walk several miles with ease.

In all my other cases except one the results have been very striking. They were not selected but taken just as they came, irrespective of age, condition, or duration of the complaint. Some authorities disapprove of blisters for patients in feeble health, but several of my patients were extremely feeble. In only one case, a patient much subject to dysuria, did strangury occur. It only lasted a few hours and yielded to copious water-drinking and the administration of hyoscyamus.

Finally, I would point out that beneficial results in these cases must not be expected from slight and transient counter-irritation. The irritation must be pronounced and prolonged *and applied at the right spots.*

Bournemouth.

# NOTES ON CERTAIN FATAL FORMS OF PHARYNGEAL DIPHTHERIA.

BY ALFRED HARRIS, M.B., CH.B. VICT., D.P.H. CAMB.,
ASSISTANT RESIDENT MEDICAL OFFICER TO THE CITY HOSPITAL FOR INFECTIOUS DISEASES, NEWCASTLE-ON-TYNE.

THERE are certain forms of diphtheria in which from experience a fatal ending can with certainty be predicted. The symptoms presented by these cases are as follows: 1. A greyish colour of the face, which in addition presents an anxious expression. 2. Vomiting. This seems independent of food and is not accompanied by nausea. It presents a similarity to cerebral vomiting. The vomited matter is yellow or green. 3. Abdominal pain. This is sometimes very severe. It is, however, nearly always present in these cases. It is referred to the umbilicus. No abdominal tenderness can be elicited. 4. Albuminuria. This is generally present and often to a large amount (from one-sixth to a quarter). There are no tube casts. 5. Suppression of urine is the rule in these cases. 6. Alteration in the rhythm of the heart sounds. This appears after the vomiting has set in. One of the sounds of the heart is reduplicated, thus giving an imitation of the sound to be heard when a horse gallops. The patients are generally very restless and consciousness is maintained until the end. The membrane on the throats in these cases is dark coloured and the smell of the breath is most offensive. During the last two years there have been eight of these cases admitted to the Newcastle City Hospital for Infectious Diseases. The patients were admitted at different periods of their illness but, as a rule, from the fourth to the sixth day. In Newcastle the patients rarely come into the hospital at an earlier period of the disease. Antitoxin has not the slightest effect on these cases. 6000 units were generally given.

CASE 1.—The patient was a boy, aged five years, who was admitted on May 28th, 1906, on the sixth day of illness, The characteristic symptoms developed on the 30th—i.e., on the eighth day of illness—and he died on the 31st. On admission he had the grey, anxious look of these malignant cases but the symptoms of vomiting and reduplicated heart sound did not show themselves until the day before he died. In him the apex beat was displaced downwards and outwards but this condition is not ordinarily present.

CASE 2.—The patient, a boy, nine years old, was admitted on August 4th, 1906, on the fourth day of illness. His mother looked after her children very well and so soon as symptoms of sore-throat developed she took him to her medical man who injected antitoxin and sent the boy into the hospital, where 8000 units of antitoxin were given on admission. At this time there was thick dark membrane, easily detachable and foul smelling, on both tonsils and uvula, and the cervical glands were much enlarged. On August 5th a large amount of albumin was present in the urine. On the 7th there was green vomiting, the pulse was slow and feeble, and the rhythm of the heart sounds was altered. The amount of urine passed was as follows: on the 6th, 20 ounces; on the 7th, 13 ounces; on the 8th, six ounces; on the 9th, four ounces; and on the 10th, two ounces. The patient died on the 10th. This case shows the uselessness of antitoxin even when injected early. In this patient the dangerous symptoms developed on the seventh day of illness.

CASE 3.—The patient, a boy, aged seven years, was admitted on the seventh day of illness with a nasal and pharyngeal diphtheria; the urine contained one-eighth of albumin. The dangerous symptoms developed on the fourteenth day of illness and he died on the seventeeth day. A well-marked symptom in this case was sighing, which was followed by a slight groan on expiration.

CASE 4.—The patient, who was six years of age, was admitted on the fourth day of illness and he died on the seventh day. The characteristic symptoms were present shortly after admission.

CASE 5.—The patient was aged six years and was admitted on the eighth day of illness. The characteristic symptoms appeared exceptionally late—namely, on the nineteenth day of illness. The patient died on the twentieth day.

CASE 6.—The patient was three years old and was admitted on the fourth day of illness with nasal and pharyngeal diphtheria. The dangerous symptoms developed on the seventh day of illness and death occurred on the thirteenth day.

CASE 7.—The patient was a girl, aged two years and five months. She was admitted on the fourth day of illness, when 8000 units of antitoxin were given. The dangerous symptoms developed on the eighth day of illness and she died on the tenth day.

CASE 8.—The patient was aged five years and was admitted on August 17th last, on the fourth day of illness. Vomiting commenced on August 20th (i.e., on the seventh day of illness) and on the 21st (i.e., on the eighth day of illness) the heart sounds were heard to be reduplicated and abdominal pain was complained of. The patient died on the 24th.

These grave symptoms can appear early in the disease. In one case they appeared on the fourth day of the disease.

Examination of the swabs from these throats shows large numbers of streptococci and staphylococci associated with the Klebs-Löffler bacilli, and some observers (Roux and Martin) have been led to regard such an association as unfavourable, and, in fact, the cause of the fatal termination. Against it is the circumstance that these symptoms never develop in other septic diseases, such as scarlet fever, for example. The striking feature is the uselessness of antitoxin in these cases. It is possible that there are several kinds of diphtheria bacilli which elaborate different toxins and such toxins will be only neutralised by special antitoxins. If such be the case it would be worth while to have antitoxins prepared from the bacilli derived from these cases and used for such cases. Streptococci which were at one time thought to be alike have now been found to represent a number of distinct organisms and the same may be found in the case of diphtheria bacilli.

I am indebted to Dr. Henry E. Armstrong, the medical superintendent of the hospital, for permission to report on these cases.

Newcastle-upon-Tyne.

---

**HOSPITALS AND TAXATION.**—Mr. P. J. Langdon, the secretary of the South Devon and East Cornwall Hospital, was summoned before the Mayor of Plymouth on Sept. 23rd for keeping a male servant without a license. The male servant was the hospital porter and the hospital committee accepted the responsibility of the case. After some discussion it was agreed that the duty should be paid, and the summons was dismissed. The supervisor of taxes applying for costs against the hospital, the mayor said that the bench regarded it as somewhat of a hardship that the hospital should be called upon to pay but at the same time he had no option and he would pay the costs himself; however, the supervisor of taxes remarked that he himself was in sympathy with the institution and agreed to the remission of the costs

---

# THE TREATMENT OF MAMMARY CARCINOMA BY THE LOCAL INJECTION OF PANCREATIC FERMENT.

By REGINALD MORTON, M.D. TOR., F.R.C.S. EDIN.,
MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT OF THE LONDON HOSPITAL;
AND
H. EMLYN JONES, M.R.C.S. ENG., L.R.C.P. LOND.,
CLINICAL ASSISTANT AT THE ELECTRICAL DEPARTMENT OF THE LONDON HOSPITAL.

DURING the last year or so much has been written and much more spoken concerning the use of trypsin in various forms for the treatment of malignant disease, some advocating its use and publishing results[1] which made it hopeful that at last we had an agent which, if unable to cure the disease, had at least a favourable influence on the course of it, relieving the pain to a great extent, preventing the progressive loss of weight, and in some instances actually modifying the morbid process itself. The results obtained at the Clinical Research Laboratories of the Middlesex Hospital[2] and the conclusions drawn therefrom (results and conclusions with which the following cases entirely agree) seem to make it doubtful whether any benefit whatever can result from such treatment.

The following cases are interesting in many ways, more particularly because it was decided to treat a certain number of typical cases of malignant disease of the breast in various stages by these methods, together with the application of x rays and comparing the results with those obtained by the use of x rays only. Four cases of carcinoma of the breast were chosen, three of which had been operated upon and one fungating atrophic scirrhus, considered to be quite inoperable. Of the three cases operated on there was slight local recurrence manifest in two, and in the other no recurrence except a small and very questionable lump in the axilla. The applications of x rays were given through tungstate two or three times a week at intervals of two or three days, according to whether any dermatitis was present or not. The duration on each occasion was 30 minutes. For the first few injections Allen and Hanbury's sterile trypsin was used, followed afterwards by the same firm's trypsin co. (trypsin and amylopsin). Doses of 15 minims were commenced with, gradually working up to 30 minims. Fresh bottles were used on each occasion and strict aseptic precautions were observed in each case. The prick of the needle was always dressed afterwards with cyanide gauze soaked in collodion. The injections were usually made into the skin and subcutaneous tissue near the site of the growth, but occasionally into the arm. Excepting for slight relief of pain for about a week in the atrophic case and some improvement in the general condition of Case 3, especially as regarded the appetite during the period of the first six injections, no good whatever resulted either as regarded the disease itself or the general condition of the patient. In Case 2 very rapid dissemination and cachexia have occurred and already within a few months of operative treatment the patient is continuously confined to her bed. Comparing this with exactly similar cases, in which x rays were used alone, we cannot help thinking that the injections were the cause of the rapid dissemination. After a few injections the pain was in every case increased, and afterwards, when larger injections were used, inflammation and occasionally suppuration occurred, exactly the results obtained at the Middlesex Hospital.

Dr. Benjamin Moore in 1905[3] pointed out, and it is now generally recognised, that there is a diminution of the gastric hydrochloric acid in almost all the cases of carcinoma not only of the stomach itself but of practically all other organs, and Dr. S. Monckton Copeman[4] suggests that the cachexia, loss of appetite, and general ill-health of patients suffering from the disease are consequent on the chyme which enters the duodenum from the stomach after a meal being insufficiently acid to stimulate an adequate amount of pancreatic secretion necessary for proper digestion, and that any good in the shape of improved appetite, &c., which may result from the use of trypsin does so by supplying this deficiency. Case 2 seems to uphold this but in none did we find any prolonged good influence either on the pain or any other symptoms of the disease, and without doubt compared with these the cases treated by x rays alone are in a much better condition at the present time.

---

[1] Nature and Treatment of Cancer, by Dr. J. A. Shaw-Mackenzie. London: Baillière, Tindall, and Cox. 1906.

[2] Archives of the Middlesex Hospital, vol. ix., Dr. Walter Ball and Mr. E. J. Fairfield Thomas.

[3] On the Absence or Marked Diminution of Free Hydrochloric Acid in the Gastric Contents in Malignant Disease of Organs other than the Stomach, Royal Society, March, 1905.

[4] Recent Research Work in Cancer, Practitioner, August, 1907.

CASE 1.—The patient, a female, aged 69 years, was admitted to the x ray department of the London Hospital on June 12th, 1907. Her previous health had been good and there was no history of tubercle or of cancer. Commenced eight years previously with retraction of the left nipple. The breast and nipple had gradually been drawn upwards to the left axilla. The only treatment which she previously had had was boric lint and powders. The chief symptoms complained of were pain along the arm, which was worse at night, swelling of the arm at times, and the fœtid smell from the breast, all of which had been getting worse during the previous three months.

On admission there was a large cancerous mass consisting of breast and glands all drawn up towards the axilla, with a deep fissure along its surface, at the bottom of which was a fungating mass. The whole condition was atrophic and smelt horribly. The patient was considered to be quite inoperable and was treated by x rays and hypodermic injections of trypsin co. She had had 22 applications of x rays three times a week on alternate days and 23 injections of trypsin on the same days, commencing with doses of 15 minims for five doses and gradually working up to 30 minims, which she had on the last nine occasions. During the period after the first few injections she had some relief from pain, but after every subsequent injection the pain increased, the swelling of the arm became greater and the sleeplessness worse than ever, so much so that she continually required morphine. The wound was daily irrigated with hydrogen peroxide (ten volumes) which improved the smell and fungoid state, but otherwise the condition was much worse, other enlarged glands having appeared in several places. The swelling of the arm was less than it had been a few weeks previously owing to careful bandaging from the elbow upwards to prevent or lessen the œdema. The condition is spreading and the appetite extremely bad, as it has been all during the injection treatment. In this case no actual suppuration occurred, but there were lymphangitis of the arm and local acute inflammation on several occasions.

CASE 2.—The patient, a female, aged , was admitted on June 12th, 1907. The family history was good and her previous health had been good. The left breast was removed on April 8th, 1907. The usual scar was present; there was a recurrence in the axillary glands with some slight swelling and œdema of the arm. The patient complained of great pain when lying on the left side. She was given 20 applications of x rays and 15 injections of trypsin co. She experienced a great increase of pain after every injection. There was induration each time, with frequently a slight rise of temperature and the appearance of an impending abscess which generally resolved. The appetite was bad all through and did not improve in the least. During treatment the patient has become extremely ill, wasting rapidly, with a local and general dissemination, fresh nodules being evident in the scar, in the other breast, in the axilla, and on the surface of the abdomen, the back, and the legs. The only relief obtained was when under the influence of opium.

CASE 3.—The patient, a female, aged 71 years, was admitted on June 7th, 1907. She had been operated on for carcinoma of the right breast in November, 1906, and first noticed lumps in the skin in April, 1907. Five weeks before admittance the arm had begun to swell. On admission the arm was very much swollen and there were hard nodules in the skin around the scar and enlarged glands in the axilla and above the clavicle. She was given 20 sittings of x rays and 17 injections of trypsin co. For about the first three weeks she felt much better in herself and there was a great improvement in her appetite. She said that there was some pain after each injection but it was different from the pain which she had been suffering and she described it as if one pain killed another. This good effect soon passed off and the pain became worse than ever before, causing her to get practically no sleep at nights. There was generally a throbbing and burning pain after each injection, though no actual suppuration occurred. The condition is rapidly getting worse; the nodules were spreading in the skin around and the lumps in the axilla and above the clavicle are much larger and are increasing in size. The only rest which she is now able to obtain is by the aid of morphine.

CASE 4.—The patient, a female, aged 56 years, was admitted on May 23rd, 1907. The left breast had been removed. The usual scar was present but there was only one questionable lump to be felt in the axilla and this was difficult to distinguish from a thickened axillary fold in the scar of operation. She was given 15 sittings of x rays and 13 injections of trypsin co. in doses gradually worked up to 30 minims. The pain was increased on every occasion, sleep was prevented, the appetite did not improve a bit, and there was no good result. During treatment several fresh definite lumps appeared in the axilla. Since discontinuing the trypsin the pain in the breast and the arms has been less.

# A CLINICAL STUDY OF PARALYSIS OF SUDDEN ONSET AND WIDE DISTRIBUTION:

## FIVE CASES OF LANDRY'S PARALYSIS; ONE CASE OF ACUTE INFECTIOUS MULTIPLE NEURITIS; AND ONE CASE OF MYASTHENIA GRAVIS.[1]

BY J. W. PUTNAM, M.D.,
OF BUFFALO, NEW YORK.

I HAVE chosen this subject for presentation at this Congress because the symptoms and course of the disease present in these cases were to a great extent the same, but the interpretation of the symptoms from a pathological and etiological standpoint differed widely. In this series of cases I report two cases of Landry's paralysis with recovery, three cases of Landry's paralysis with death, one case of multiple neuritis, and one case of myasthenia gravis.

CASE 1.—I was called in November, 1905, by the family physician to see a patient, a man, aged 30 years, with a previous history of having had an operation some years before for the removal of the coccyx. He had been in good health ever since but had always observed that there was some slight discharge from the region of the wound. When I saw him he was in bed with total flaccid paralysis of all the muscles of the lower extremities, the muscles of the trunk, and the muscles of the upper extremities. His respiration was laboured, the accessory muscles of respiration in the neck being strongly contracted with each effort of inspiration. The effort of swallowing was accompanied by marked choking and the attempt was given up. His temperature was normal, his pulse was 84, his reflexes were absent, his sensation was perfect, faradic contractility was present, and the diagnosis was made of Landry's acute ascending paralysis. As all treatment which has heretofore been tried in this disease has, as a rule, resulted in failure, I determined to give Credé's ointment of silver a fair trial. It was accordingly prescribed and it was rubbed into the spinal region night and morning until two ounces had been used. The only internal medication used was the fluid extract of ergot, one half-teaspoonful every three hours. The morning following my first visit the respiration was better, swallowing was more easy, and it was evident that the ascent of the disease had reached its limit. The further progress of the disease is best described by a gradual return of motion, first appearing in the distal muscles of the lower extremities and then involving the larger muscles. In two weeks motion had returned to all the muscles of the lower extremities and had begun to return to the muscles of the hand and forearm. In the third week contraction of the biceps was noticed. After six months the patient was walking and used his arms and hands with ease. At the time of writing the patient has no evidence of his previous disability with the exception of some atrophy of the muscles of the hand and an inability to stand upon his tip toes.

CASE 2.—I was called on Nov. 21st, 1905, by the family physician to see a little girl, aged four years, who had been in previously good health until the afternoon when she was suddenly stricken with paralysis of both lower extremities. So suddenly did the paralysis come on that the child, who was playing upon the floor a moment before, had in obedience to a call from her mother made an attempt to rise and found her legs were powerless. She was picked up, undressed, and put to bed, and the family physician was sent for. Before he arrived the paralysis had invaded both upper extremities. I saw her the same evening. She was conscious, suffering no pain, but had absolute paralysis of the four extremities. The reflexes were abolished and sensation was normal. The temperature was normal. There was no paralysis of the bowels or bladder. Faradic contractility was present. On the next day I saw the child again in the evening and noted that in addition to the paralysis of the four extremities there was a marked effort of the accessory muscles of respiration. In spite of any treatment the child died at midnight, 55 hours after the onset of the disease. No necropsy was allowed.

---

[1] A paper read at the International Congress of Psychiatry and Neurology held at Amsterdam from Sept. 2nd to 7th, 1907.

CASE 3.—On Nov. 16th, 1905, I was called by the family physician to see a patient, 16 years old, who had been in her usual state of health until Nov. 15th. At that time, without pain, she lost all use of her lower extremities. The paralysis rapidly ascended the trunk and upper extremities until she was totally paralysed in 30 hours from the time of onset. I found her seated in a chair, the trunk bent well forward, and the head supported by a nurse. She was breathing rapidly, but said that she felt no discomfort. I tested her reflexes and found them absent, found sensation present, and found that there was no loss of control of the bladder or bowels. Faradic contractility was present. She was ordered fluid extract of ergot and Credé's ointment rubbed in freely along the spine. She gradually failed from the loss of power of the respiratory muscles, which was preceded by paralysis of the muscles of deglutition, and she died on the 20th, five days after the onset. No necropsy was allowed.

CASE 4.—On Nov. 30th I was called by the family physician to see a patient, a man aged 50 years, who was in bed with total paralysis of all four extremities. The previous history was that the man had been in his usual good health until Nov. 30th, when he felt a weakness in his legs and rather a sharp pain in the muscles of the right calf. He walked to a barber's shop with difficulty and sat in a chair to be shaved. When this operation was completed he tried to get up from the chair but found that he had lost all power in the muscles of the lower extremities. He was taken home and the family physician was sent for. Paralysis advanced rapidly from the muscles of the lower extremities to the muscles of the trunk and upper extremities, so that when I saw him, 48 hours after the onset, he was totally paralysed in all muscles below the neck. There were no loss of sensation and no loss of bladder or bowel control and the reflexes of the knees were absent. The reflexes in the plantar surface of the feet were present. The man had previously had a slight cold and as a result of the paralysis of the muscles of expiration he had not sufficient expiratory power to expel the mucus, and there was a loud rattle to be heard during respiration. I agreed with the family physician in the diagnosis of Landry's acute ascending paralysis, told him of my experience in the use of the Credé's ointment in one case, and suggested that we should use it freely. An ounce was rubbed in the back, thighs, and axilla in the following 24 hours. The first morning after my visit it was evident that the spread of the disease up the cord had been arrested. Respiration was quiet and the difficulty in swallowing, which was quite apparent the night before, no longer existed. The treatment of ergot and unguent Credé was continued. Six weeks from the onset there was some return of power in the muscles of the feet and hands. At no time was faradic contractility lost. In three months he had good use of the arms and legs.

CASE 5.—In December, 1906, I was called by the family physician to see a patient with the following history. He was a young man, aged 28 years, in previous good health, whose occupation was office work. He had started three days before I was called to go downstairs and walk to his work and complained that his legs felt heavy and that locomotion was difficult. He returned to his home and sent for the family physician, who at that time examined him and found that there was no paralysis, that the reflexes were normal and sensation was normal, and he advised him that the trouble was transitory and would probably pass away in a day or two. On the next day the legs were still more affected. The man became frightened and hysterical. On the third day the arms became involved and breathing was difficult. At that time I was called to see him. When I examined him I found the man sitting up in a chair with his body bent forward and breathing with great difficulty. There was an anxious expression. His hands and legs were absolutely without movement; sensation was normal. Electrical examination showed faradic contractility in all the muscles of the four extremities. The reflexes were normal. There was control of the bowels and bladder. I attempted to give him water but the difficulty of swallowing was so great that alarming choking occurred. A diagnosis of Landry's paralysis was made, the symptoms of the disease being all present as high as the respiratory centre. On the evening of the fourth day the man died. No necropsy was allowed.

CASE 6.—In the fall of 1904 I was summoned to see a patient by the family physician. I found a stalwart young man, aged 30 years, single, with a previous history of urethritis for the past six weeks. There was nothing unusual about this urethritis. The history given by the patient was that 48 hours before I saw him he was starting to dress and found difficulty in standing on his right foot, but he managed to dress and walked downstairs and kept about during the morning. As he felt himself getting weaker he returned to his room but found himself unable to walk upstairs; he, however, managed to get up on his hands and knees and went to bed. On examination I found paralysis almost complete of the two lower extremities and great weakening of the muscles of the arms. In this case I found tenderness along the sciatic nerve trunks and along the crural nerves. There was also tenderness along the nerves of the brachial plexus. There was diminished sensation in the skin of the four extremities. A diagnosis of acute infectious multiple neuritis was made and a favourable prognosis was given. He was under treatment for a period of three months. During this time the reflexes were lost, sensation became more and more blunted, and the faradic contractility was greatly impaired. He was treated on the theory of some toxic principle having caused the widespread inflammation of the nerve trunks. I used inunctions of unguent Credé freely and subcutaneous injections of the normal salt solution every eight hours for a period of two or three weeks. At each injection I used from eight to 12 ounces. Sensation was normal and the reflexes all returned and he was entirely recovered at the end of six months.

CASE 7.—In December, 1904, there came to me a man with a history of a purulent venereal sore about six weeks before the onset of a paralysis which affected the muscles of deglutition. Before the onset of the paralysis he worked for an estimated period of 45 days in five weeks. At the end of this time the first evidence of paralysis was noticed in a change of the quality of his voice. This was followed by difficulty in swallowing. This paralysis rapidly increased until the swallowing became fraught with danger and there was no sound from the glottis. Respiration was difficult and was carried on almost entirely by the aid of the accessory muscles of respiration. There was marked weakness of the muscles of both arms and legs but there was no paralysis of any muscle or group of muscles in the extremities. The patellar reflexes were much diminished; the Babinski sign was absent. There was no anæsthesia but he complained of paræsthesia in the arms and legs. Disturbances of sensation were described by him as a feeling of numbness such as is observed when the feet and hands are cold. Examination of the muscles of the extremities by the faradic current showed that the faradic contractility was not lost. The onset of this case, following as it did purulent discharge, and also following severe physical labour with excessive number of hours and deficient sleep, causes me to hesitate between the diagnosis of myasthenia gravis and acute bulbar paralysis. I called two laryngologists in consultation and they reported to me that the glottis was in a cadaveric position and that the aphonia was due to organic disease and not to hysteria. Dr. William C. Krauss was notified to attend the case in consultation with me. He was of the opinion that we had to deal with acute bulbar paralysis, but after a period of three months the paralysis had gradually disappeared. The muscles that were first affected recovered first. At the end of six months the patient had recovered sufficiently to be allowed to go home. A year later he was a robust, vigorous man entirely recovered and able to perform his duties as before.

The diagnosis in this case, considering the severe and complete exhaustion after his heavy work, and the respective facts that there was no actual paralysis of the muscles of the arms and legs and that there never was any tenderness along the nerve trunks, made it probable that we did not have a case of either Landry's paralysis or of infectious multiple neuritis. The physicians who saw him could never be positive that it was not a case of acute bulbar paralysis, but because of the rapid recovery under the rest cure, with massage, faradic electricity, and large doses of strychnine, I have considered this case as one of myasthenia gravis.

In this series of seven cases the patients had many symptoms in common but they must be separated into different classes. The diagnosis of Landry's paralysis should be made in those cases in which the onset was sudden, in which the muscular paralysis passes from the lower extremities to the upper extremities, in which sensation is unimpaired, in which the nerve trunks are not tender, in which the bladder and rectum are not involved, and in which the electrical reaction is unchanged.

The diagnosis of acute infectious multiple neuritis was made in those cases in which there had been a previous disease, as in the case of paralysis following urethritis, in which the symptoms are general motor paralysis, disturbances of sensation, tenderness of the nerve trunks, atrophy, and change in the electrical reaction. I do not believe that it is always possible to make a positive differential diagnosis between cases of Landry's paralysis and acute infectious multiple neuritis, nor between myasthenia gravis and acute bulbar paralysis. It is only by the reporting of carefully studied cases, however, that we can hope some time to improve our classification.

## Medical Societies.

Brighton and Sussex Medico-Chirurgical Society.—A meeting of this society was held on Sept. 5th, Mr. H. H. Taylor, the new President, being in the chair.—The President showed a man with a Rodent Ulcer on the Eyelid.—Dr. C. F. Bailey showed radiographs of a Small Stone in the Kidney and also the stone after removal; also radiographs of an Unusual Deformity of the Hands, thought by him to be due to rheumatoid arthritis.—Dr. Walter Broadbent showed a Baby with only Two Toes on the Right Foot and an Angular Bend in the Tibia, possibly due to intra-uterine fracture.—The President read his inaugural address on "The Milk Supply." He said that, considering that milk should form the staple food of all children, too much attention could not be paid to the manner of its production and distribution. Children born healthy could nearly always be brought up to be strong men and women if properly nourished. The Inspector-General for Recruiting remarked on the deterioration of the working classes, about 30 per cent. of recruits having to be rejected as below the standard required, though that was a low one. Though great improvements had been made in housing, water-supply, and food generally, no improvements had been made in the milk-supply. In the ordinary cowshed the floor and walls were covered with dung, the udders of the cows were filthy, and the cans were often washed in well-water not thought good enough for drinking. The milk often stood for hours in a hot dusty station, and when it reached the town it was retailed to milk-sellers to hawk about the streets, and finally reached the houses full of every kind of germ and contamination. Preservatives ought not to be allowed, as they enabled stale milk to be sold as fresh. Adulteration was on the increase owing to the low standard of fat required by law. No reform would come among the farmers unless the public, by buying only from the cleaner farms, compelled them through their pockets, and the medical profession should instruct the public. Inspectors of cattle should be appointed by the Government and not by the local authority, since often the worst delinquents were county councillors who would find a means of dismissing any inspector who found fault with their cattle. It was possible that human tuberculosis was a modified form of bovine, and the slaughter of all tuberculous cattle would decrease the incidence of tuberculosis in man. He thought that the giving of certificates to approved dairies by the sanitary authorities of towns was a method which promised to promote improvement. In conclusion he proposed the following motion :—

> That the Brighton and Sussex Medico-Chirurgical Society views with grave concern the deplorable condition of the milk industry in this country, and urges upon the Local Government Board the prime importance of introducing into Parliament at an early date a wide and comprehensive measure for its reform.

—This was carried unanimously and it was forwarded to the President of the Local Government Board.

## Reviews and Notices of Books.

*Diseases of the Lungs.* By Robert H. Babcock, A.M., M.D., until recently Professor of Clinical Medicine and Diseases of the Chest, College of Physicians and Surgeons, Chicago. London: Sidney Appleton. 1907. Pp. 809. Price 25*s*.

This work on Diseases of the Lungs is "designed to be a practical presentation of the subject for the use of students and practitioners of medicine" and a careful perusal has assured us that the author has admirably succeeded in the task which he has set before him. Dr. Babcock explains in his preface that "the original contract between the publishers and the author called for a work of one volume which in approximately 1000 pages should cover the entire field of diseases of the chest." It was found, however, that such an arrangement would prove unsatisfactory, since it would necessitate too great a condensation to make the work of practical value. Consequently, the portion dealing with diseases of the heart and the arterial system was published in 1903 and we now have before us the second portion entitled as above.

The first chapter deals with bronchitis and in conformity with the general scheme of the work etiology, diagnosis, and treatment receive especially full and practical consideration. The remarks on the etiology of the disease are especially worthy of notice. A separate chapter is devoted to the discussion of pulmonary hæmorrhage. For the treatment of copious hæmoptysis Dr. Babcock speaks highly of the subcutaneous injection of $\frac{1}{50}$th or even $\frac{1}{25}$th of a grain of sulphate of atropine. Its effect is the speedy dilatation of the superficial capillaries, as shown by the redness of the skin throughout the body, and hence "the remedy bleeds the patient into his own vessels as it were." This is a logical method of treatment. A similar effect is produced by the inhalation of nitrite of amyl. Dr. Babcock does not mention this drug in this connexion but its administration in cases of hæmoptysis has yielded satisfactory results. We fully agree with Dr. Babcock's remarks on the use of ergot in pulmonary hæmorrhage; he is of opinion that notwithstanding its popularity it is not only irrational for bleeding due to erosion or rupture of a pulmonary artery but it is capable of doing harm. Ergot raises the blood pressure in the aortic system by contraction of the arterioles through stimulation of the vaso-motor nerves. Whether indirectly through its action on the aortic system or directly on the pulmonary vessels, ergot, therefore, raises the blood pressure in the lungs and defeats the purpose intended. Dr. Babcock realises that this drug is, and frequently has been, given for the relief of hæmoptysis and apparently with beneficial results, but he believes (and in this opinion we are in perfect accord) that it is in reality a matter of *post hoc*, not *propter hoc*. In other words, that if bleeding has ceased after the administration of ergot it has been in spite of, and not on account of, the drug. Another objection to this drug lies in the gastric disturbance which it so frequently creates. In concluding this subject Dr. Babcock speaks with no uncertain voice but he will doubtless be supported by a large number of physicians when he says: "From every standpoint, therefore, I feel compelled to raise my voice in protest against the use of this agent in cases of hæmoptysis."

No less than five chapters are devoted to the consideration of acute fibrinous pneumonia and these will well repay careful study. In discussing the etiology of the disease the influence of cold is duly dealt with. Dr. Babcock is of opinion that a sudden or prolonged chilling of the body cannot of itself produce pneumonia but it serves as the trauma which prepares the way for the subsequent action of the germs. In other words, it impairs or destroys the protective power of the bronchial or pulmonary epithelium by occasioning some chemical or biological change in the cells by virtue of which the pneumococcus is enabled to find suitable soil for its growth. This view is now held by many authorities to be the correct one. The symptoms and physical signs of the disease are well described and some suggestive remarks are made as to its duration. It is generally known that the course of the malady may be protracted by complications or by delayed resolution. The last-mentioned possibility, however, furnishes a fruitful theme for discussion. It was formerly taught that instead of resolution taking place within a few days or a week, as is usual, it might be retarded by factors which were not altogether understood. Dr. Babcock points out that the opinion now seems to be gaining ground that the persistence of dulness, bronchial breathing, and even of crepitant râles is to be attributed not to slow absorption of the exudate but to its conversion into fibrous tissue—that is to say, the exudate undergoes organisation and that portion of the lung becomes permanently indurated. There is pathological evidence in support of this assertion. It must also be borne in mind that some cases diagnosed as "unresolved pneumonia" eventually prove to be instances of empyema. The treatment of acute fibrinous pneumonia is most ably and fully described. After some preliminary remarks on "various proposed modes of therapy," the author arrives at the conclusion that "woefully inadequate as are our weapons against this terrible foe to mankind, we possess no better mode of therapy than what is known as the expectant or symptomatic plan of management."

We can recommend to our readers a perusal of Dr. Babcock's remarks on the "general management" of a case of pneumonia; much useful information will be gained thereby. He is eloquent on the importance of a full supply of fresh air. He says: "We have all seen pneumonia sufferers in rooms and wards so close and hot as to cause a person entering from the fresh air of the outer world to feel faint and half sick. ...... Can anything be more absurd than to see an oxygen apparatus in a room the windows and doors of which are closed and the atmosphere stifling from heat and foul emanations from patient and attendants? The notion that a pneumonia patient must be protected from cold air and draughts originated at the time when this affection was considered an inflammation of the lungs resulting from exposure. The modern view of its pathology renders ridiculous the fear that fresh, cold air is harmful. In my opinion, even a draught is less dangerous than is the lack of proper ventilation." These words show that Dr. Babcock has the courage of his convictions, and in insisting on light coverings for the patients and the absence of the "cotton jacket" and heavy poultices he is carrying out a form of treatment which is being more and more adopted. He naturally has a high opinion of the advantages of cold as an antipyretic and gives minute directions as to the manner in which it should be employed. We have not space to dwell further on this subject but we consider that Dr. Babcock's views are founded not only on a large experience but also on sound scientific principles.

The subject of pulmonary tuberculosis justly demands the most full consideration and eight chapters were found necessary in order to accomplish this. Although heredity in connexion with this disease does not occupy the prominent position in regard to etiology that it once did, yet we consider that Dr. Babcock's contentions go too far in the opposite direction. We find a little difficulty, also, in ascertaining his exact meaning. In discussing the "natural lack of tissue resistance," he says: "Whereas I do not any longer believe in congenital predisposition (i.e., tuberculous diathesis) as the main or even an important etiological factor, I do yet believe that not all individuals are equally prone to pulmonary tuberculosis." Then, further on, he remarks:—"I still cling to the view that by reason of an inherited or congenital weakness of constitution the descendants of tuberculous forebears are more liable to develop pulmonary phthisis than are children of a more rugged stock." Again, when giving a summary of his views, he says:—"Finally, the so-called tuberculous diathesis or inherited predisposition to consumption is a belief based on wrong hypotheses. The whole subject must be looked at from the viewpoint of infection and not hereditary tendency." The above statements are rather difficult to reconcile, for the difference between "tuberculous diathesis," "inherited predisposition," and "an inherited or congenital weakness of constitution" is so slight as to resolve itself into one of terminology only. The elaborate statistics evolved from the various life assurance societies bring out one cardinal fact, that is, that applicants who have lost near relatives from tuberculosis show an excessive mortality from this cause. There is certainly a tendency at the present day to decry the influence of heredity in connexion with tuberculosis but care must be taken that extreme views do not prevail.

With regard to another debateable point also Dr. Babcock asserts his strong belief in infection as being the main element in the spread of the disease, and that is in reference to "compulsory registration." He says: "The fact is that this measure is so fundamental that unless it be carried out no adequate prevention of this disease can ever be attained." This may eventually prove to be correct but there are serious objections to the enforcement of compulsory notification. There are many authorities who doubt its efficacy and who believe that as much can be done by a continuance of those measures which have already so materially lessened the mortality of the disease. The improvement of the dwellings of the working classes and the instruction given to patients and their friends by medical practitioners are most potent factors in combating the disease.

In conclusion, we can say that Dr. Babcock's work is one of the best manuals on diseases of the lungs which we have seen. His style of writing is pleasant and rivets the attention. In addition, the printing of the book is good and the illustrations are excellent. We cordially recommend the work to our readers.

---

*Foods and their Adulteration.* By HARVEY W. WILEY, M.D., Ph.D. With 11 coloured plates and 86 other illustrations. London: J. and A. Churchill. 1907. Pp. 625. Price 21*s.* net.

THE American Government promises to lead the way in regard to legislation having for its object the purity of foods and food products and the protection of the public against misrepresentation and adulteration. New measures are contemplated which if carried into effect will place severe but justifiable restrictions upon many manufacturers of food products. The issue at the present moment of this work by Dr. Wiley, who is the official chemist in Washington, is therefore of particular interest. Its contents no doubt reflect the experiences which the author has gained in the course of his onerous official duties. He takes, and very properly so, a high ethical view of the question, and no doubt he has been blamed by the representatives of some trades for exacting a high ideal; doubtless also he has been stigmatised by others as one who is needlessly interfering with legitimate trade practices and, by his official influence, threatening to inflict hardships upon certain food industries. For our own part, we are confident that Dr. Wiley has acted conscientiously throughout and that he has been jealous of the public health and the public good whilst anxious to avoid unnecessary interference with trade interests. We are certain that if the governments of all civilised countries would adopt a strong attitude in regard to suppressing the manipulation of foods with objectionable ingredients manufacturers would be forced to give way and to direct their energies to the supply of foods to which no objection could be taken either in regard to their description or to their particular mode of preservation. As the author says in his preface, honest and truthful practices of manufacture and labelling are to be promoted in every possible manner and in the end the true, the ethical, and the just in these practices will prevail.

The book before us covers a good deal of the ground but not all. We may anticipate, however, that the cordial reception which it is sure to receive will induce the author to proceed further. For the present we must be content with the foods now dealt with. After a chapter of generalisations Dr. Wiley proceeds to the consideration of meats and meat products. In this section he deals with the preparation of animals prior to slaughter, the composition of various kinds of flesh, the preservation of meats, the value of meat extracts, and so on. He refers to yeast extract as an adulterant of meat extract but apparently does not seem to be acquainted with a better method of determining yeast extract than that which depends upon the production of turbidity when zinc sulphate is added to a strong solution of meat extract containing yeast extract. In Part 2 we come to a consideration of poultry, eggs, and game birds, which is necessarily a short section. This is followed by a more important part dealing with fish foods, in which the composition of the edible portion of various fishes, including shell-fish and turtle, is given. Next he proceeds to discuss milk and milk products and this section is succeeded by a chapter of special interest on cereal foods. We find here some noteworthy observations on the effect of modern milling methods on corn products. These methods of preparing the flour, although so common, are not, the author says, to be preferred either by reason of palatability or nutritive properties of the products. The old-fashioned milling process, he adds, makes a more palatable and more nutritious diet and affords a higher degree of heat and energy. In regard to proprietary breakfast foods he says what we believe to be true, that people of limited means can be safely advised on the score of economy, palatability, and nutrition to prepare their own cereals for ordinary breakfast purposes. Then follows a section on vegetable condiments and fruits, which in its turn is succeeded by a section on vegetable oils, fats, and nuts.

It will be gathered that the book is designed not so much for the use of the analyst as for those readers who desire to have a knowledge of the value of foods. Nowadays, when such extravagant claims are made in favour of so many widely advertised foods, it is important that the public should have some knowledge of the composition of food and of the individual value of its constituents. Dr. Wiley has written his book with the excellent object of instructing the public and manufacturers on these points, and we are bound to say that he has presented his facts, both chemical and physiological, in a way which should be easily "understanded of the people." Common sense is written on every page. The following is a specimen taken from the introductory chapter. "We are all familiar," he says, "with the advertisements of foods to feed the brain or the nerves or the skin. It is hardly necessary to call attention to the absurdity of claims of this kind. One part of the body cannot be nourished if the other parts are neglected, and the true principle of nutrition requires a uniform and equal development and nourishment of all the tissues. It is true that many of the tissues have predominant constituents. For instance, in the bones are found large quantities of phosphate of calcium and in the muscles nitrogenous tissues dominate. In the brain and nerves there are considerable quantities of organic phosphorus. All of these bodies, however, are contained in normal food properly balanced." We can commend heartily Dr. Wiley's recent work and hope that he will pursue the subject further and will give us his views on malt liquors, wines, and spirits.

---

## LIBRARY TABLE.

*Some of the Clinical Aspects of Pneumonia.* By DONALD W. C. HOOD, C.V.O., M.D. Cantab., F.R.C.P. Lond. London: John Bale, Sons, and Danielsson, Limited. 1907. Pp. 117. Price 7*s.* 6*d.* net.—This book is largely a reprint of clinical lectures and demonstrations delivered at the West London Hospital, to the post-graduates attending the practice of the hospital, and as might be expected from this circumstance it is severely practical in character. Most of the numerous difficulties of diagnosis, prognosis, and treatment that may beset the general practitioner in dealing with the varied symptoms to which the name pneumonia is applied receive attention, and in many cases Dr. Hood gives illustrations from his hospital or private practice in support of his pathological teaching and therapeutic recommendations. He considers that the treatment of pneumonia resolves itself largely into the management of a patient suffering from the effects of a poison attacking a vital organ, and that this essentially toxic condition demands for its treatment an abundance of pure fresh air, dietetic treatment, and a few drugs when simple diaphoresis, tonic support, or purgation is required, among which he finds a place for alcohol. He is absolutely opposed to the use of the powerful synthetic remedies, preferring to trust to tepid sponging in pyrexia, with, perhaps, the assistance of quinine or alcohol. The general practitioner, especially the recently qualified man, will find this a very valuable little book, but the price demanded for it is surely somewhat high.

*Invertebrate Zoology.* By G. A. DREW, Ph.D. London: W. B. Saunders Company. 1907. Pp. 201. Price 5*s.* net.—This little manual has for its basis a set of laboratory directions prepared by a staff of instructors to meet the needs of the students at the zoological classes at the Marine Biological Laboratory at Woods Holl, Massachusetts. The author rightly suggests that few instructors will find it desirable at their own classes to compel their students to follow the whole procedure proposed in any handbook. Every teacher must exercise his individuality and the average needs of every class vary in detail, but we consider Dr. Drew's manual to be a particularly useful little work, for it is not only arranged in an orderly manner but the salient points are given proper prominence, so that the time of teacher and taught alike would be economised by following out the plan laid down.

*The Midwives' Pocket Register and Case book.* By R. J. BLACKHAM, L.R.C.P. Edin., L.M. Dub., D.P.H. Lond., Major, R.A.M.C. London: Henry Kimpton. 1907. Pp. 29 and tables.—This little volume has been prepared to provide practising midwives with a convenient substitute for the bulky official register. As Major Blackham points out in a prefatory note, midwives in practice are required to keep a register of cases, but the official book issued for the purpose measures 13 inches by 8 inches, dimensions which make it not easily portable. The Pocket Register, the dimensions of which are 5½ inches by 4 inches, provides space for keeping a complete record of the labour and puerperium of 50 cases, a number which is probably in excess of the average attended by a midwife in a year's ordinary practice. The little book also includes the rules laid down by the Central Midwives Board for regulating the practice of midwives, to which rules some valuable practical notes have been added by the author, together with some brief remarks on the care of infants arranged in the form of a decalogue which it is suggested that the mother might well learn during the enforced leisure of the latter days of her puerperium.

*Lessons in Disinfection and Sterilisation.* By F. W. Andrewes, M.D. Oxon. Second edition. London: J. and A. Churchill. 1907. Pp. 222. Price 3*s.* 6*d.* net.—Dr. Andrewes has done well to bring out a second edition of his practical little work—an expansion of a course of lectures to the nursing staff of St. Bartholomew's Hospital, which now includes an elementary course of bacteriological instruction as well as a scheme of practical experiments illustrating the processes of disinfection and sterilisation. The book has been written from the point of view, as is stated more than once in the text, that while a short practical course in the laboratory will do far more in teaching the principles of disinfection than the reading of many treatises, the average nurse cannot be expected to take out such a course. Consequently the experimental section which illustrates the lessons in bacteriology makes no demand on any familiarity with microscopic technique, but consists of what the author terms "naked-eye bacteriology" throughout. The result is a most useful little book; indeed, we quote these following words in a prefatory letter from Professor Klein on purpose to endorse them: "Every nurse and every person who is brought in contact with the sick room will from this book be able to gather a most useful, correct, and intelligible account of the manner of preventing contagion and of neutralising and destroying contagia."

*A Text-book of Plant Diseases Caused by Cryptogamic Parasites.* By George Massee. London: Duckworth and Co. 1907. Pp. 472. Price 6*s.* net.—The author of this book is the principal assistant at the Kew Herbarium, and his knowledge of cryptogams is shown by this interesting volume to be very extensive. The aim of the book, as stated in the author's preface, "is to enable those persons directly occupied in the cultivation of plants, and with but a limited period of time available for study, to determine the nature of diseases caused by parasites of vegetable origin"; and "to apply in the most approved manner those curative and preventive methods which experience has shown to be most successful in combating the particular form of disease under consideration." The author has also aimed at showing his readers how to include in the daily routine of horticultural work precautionary measures which, without being costly, would often prevent a slight disease from assuming the proportions of an epidemic. It will be seen that the work, which to our mind succeeds very exactly in its objects, has no direct medical application; but some of the disease processes described bear a curious resemblance to pathological results in the human subject, and readers who may not be interested from any sociological or selfish point of view in the knowledge that gigantic sums are lost to this country yearly through the ravages of vegetable parasites may none the less find Mr. Massee's book very suggestive. Those who are familiar with Mr. Jonathan Hutchinson's instructive views and remarks upon plant pathology will find in Mr. Massee's book material for advancing their knowledge along a most interesting path of research.

*Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature.* By Joseph Butler, D.D. Edited by the Right Hon. W. E. Gladstone. Oxford: University Press. 1907. Pp. 423. Price 1*s.*—Among many volumes of the World's Classics, the extremely valuable series of reprints which Messrs. Henry Frowde and Co. are now publishing at moderate prices, there is not one that we are more pleased to see in a cheap and convenient form than Butler's Analogy in the shape laboriously prepared by his earnest student, the famous Prime Minister of England. Butler's Analogy may be an old-fashioned work, but it remains a model of argument from its debateable premisses, and a monument of eloquent ingenuity. Mr. Gladstone, considering that the tissue of Butler's thought is closer than that of any of the ancient philosophers except perhaps Aristotle, came to the conclusion that the difficulty of mastering his ideas was seriously aggravated by want of references and cross-references, sectional divisions with their headings, and a good index. These defects he set himself to repair and the result was an edition of the great work of the famous bishop wherein it was easy for the ordinary student to find his way. It has been said that as Newton unfolded the system of nature so Butler explained the system of grace, and certainly Butler's work has always been a favourite one with scientific men, usually ready to regard theological disquisitions as the splitting of straws. Many of our readers may like to renew their acquaintance with the Analogy now that it is placed so easily within their reach.

*The Health of the State.* By George Newman, M.D. Edin. London: Headley Brothers. 1907. Pp. 199. Price 1*s.* net.—This little book is the second volume of the Social Service Series, an issue of authoritative manuals on topics of sociological importance now appearing under the general editorship of Mr. Percy Alden, M.P., who himself wrote the volume on "Housing" with which the series commenced. Dr. Newman has only attempted to deal in plain language with some of the more important problems of public health, having regard to the fact that he is addressing a lay audience, but the complete familiarity with every detail of his subject that he possesses is very exactly shown by his knowledge of what to insert and what to omit. It is in matters of State medicine that the layman and the medical man really meet in common conclave, and it is particularly important that those citizens who desire of their free will to render social service to the State should possess adequate knowledge which they can bring to bear upon public authorities for the proper control of the health of the community. Dr. Newman, the newly elected Chief Medical Officer to the Board of Education, has been medical officer of health to the borough of Finsbury and lecturer on public health at St. Bartholomew's Hospital. He has every qualification, both as expositor and first-hand worker, for writing a manual addressed to the people at large, and we congratulate him upon the result. He is not content with recording unfortunate conditions; he is ready to suggest remedies. At the end of the chapter dealing with the hygiene of childhood, for example, he appends a list of "musts" and "shoulds" with which all medical men will agree. He says that school children *must* be fed, medically inspected, and, if mentally backward, specially instructed; he says that the elements of temperance and domestic hygiene *should* be taught in properly drained and ventilated buildings, and that neglectful parents *should* be punished. A similar directness pervades a very valuable little book.

*The Birds of the British Islands.* By Charles Stonham, C.M.G., F.R.C.S. Eng., F.Z.S. With illustrations by Lilian M. Medland. In 20 parts. Part 7. London: E. Grant Richards. 1907. Price 7*s.* 6*d.*—The contents of the seventh part of Mr. Stonham's most interesting work include descriptions of the corvidæ—the jackdaw, the raven, the carrion crow, the hooded crow, and the rook; of the larks, the woodpeckers, the swift, the wryneck, the night-jar, the nutcracker, and several other rare or accidental visitors to our shores. As in the previous parts Mr. Stonham shows himself an excellent blend of scientific and field naturalist, while Miss Medland's illustrations continue to fulfil the sound promise of the earliest issues. She has two limitations to deal with—firstly, some birds, for example, the raven and the crow, have to be drawn to a scale reduced from life to enable their presentment to get into a page; and, secondly, the pictures are all in black and white. When these things are taken into account we consider the pictures admirable, while she has seized upon points mentioned by Mr. Stonham in the text and made her drawings illuminate his words. The picture of the night-jar, for example, shows very well the characteristic pose of the bird along the branch, the bark harmonising so truly with the ash-grey, brown, and bronzish markings of the plumage that the bird escapes notice effectually. Mr. Stonham's intimate acquaintance with his subject peeps out on every page, for there is hardly a bird on whose habits he has not some characteristic remark to make.

*Matter and Intellect.* By ANDREW ALLAN. London: A. Owen and Co. Pp. 224. Price 5*s.*—This is a little book the contents of which might be inferred from its claim to be a reconciliation of Science and the Bible, and might be more certainly deduced from its closing sentence: "I raise no altar to the Unknown God, for how can we worship That which we do not know? Yet there are only three things in this world in regard to which we possess positive, unquestionable, and first-hand knowledge. We know that the earth is beneath our feet—That is Matter: we know that the sun is shining—That is Energy; and we know that a stone unsupported falls to the ground—That is Law or Will. MATTER, ENERGY AND WILL—Three in One and One in Three—This is THE GREAT I AM." Those who think with the author will hardly need the book; those who do not hold his views, whether because their creed is more or less transcendental, are not in the least likely to be converted by the powers of argument which he displays.

*Health in the Home Life.* By HONNOR MORTEN. London: J. Clarke and Co. 1907. Pp. 170. Price 2*s.* 6*d.* net.—The obvious things are said in this book upon health in the home and upon what may be called domestic surgical and medical emergencies. There is no more originality shown in the directions given to the nurse than in those given to the public, but in her excursions into medicine Miss Morten occasionally tells us a thing or two of which we were in ignorance. The advice is given now and again "to send for the doctor," but it is difficult to gather exactly when, according to Miss Morten, domestic self-help should be relied upon and when expert assistance should be summoned. The necessity of calling in a surgeon is recognised in the treatment of hernia, fractures, and "convulsions," but the readers are apparently expected to be able to deal with the common dislocations, colic, "fits," and burns without professional aid. The information conveyed in the chapter on contagion and disinfection is too scrappy to be of much practical value and the author would appear to know more about schools for girls than schools for boys. We regret not to be able to give a warmer welcome to a book obviously written with the idea of raising the standard of health in the home by increasing the knowledge of the heads of households. The object is good and to some extent the book has done what is intended of it, but as a whole it is not successful.

*The Great Eastern Railway Company's Tourist Guide to the Continent.* By P. LINDLEY. 1907. Pp. 111. Price 6*d.*—The features of this practical little guide are an excellent series of continental maps and some useful particulars of new tours in Holland, in North and South Germany, and Belgium. The less known side valleys of the Rhine come in for interesting notice, while scraps of information, sometimes quite well illustrated by photograph or pencil, are given of such old Flemish towns as Ghent, Bruges, and Ypres. The object of this guide is to stimulate us to travel, and it can hardly fail to put its reader into the desired mood.

## JOURNALS AND MAGAZINES.

*The Haslemere Museum Gazette.* By JONATHAN HUTCHINSON, F.R.C.S. Eng., LL.D., F.R.S., assisted by E. W. SWANTON, Curator of the Haslemere Museum. Vol. I. 1906–07. London: J. Bale, Sons, and Danielsson, Limited. Pp. 622. Price 7*s.* net.—This volume offers a perfect feast of objective education and field-study. The illustrations include portraits of Cobbett, Albert Durer, Charlotte Corday, and Fénélon; the ova of a lackey-moth on a twig; Kit's Coty House; a currant leaf infested with the fungus *Cronartium ribicolum;* a rook's head with a malformed bill; and the list might be greatly prolonged, every example showing the wide range of subjects which has fallen under the learned notice of Mr. Hutchinson, the conductor of the *Gazette.* The literary matter rivals the illustrations in diversity, the idea of the conductor being to encourage the formation in as many centres as possible of educational museums similar in scope and object to the one which he has founded at Haslemere, and the underlying aim being to stimulate the public to first-hand observation of all sorts. Among the special headings under which the contents of the *Gazette* are ranged are extracts from expository lectures delivered in the museum at Haslemere; descriptions of specimens and notes of field natural history, astronomy, and geology; and portraits, under which heading especial attention has been given to the history of race and the conditions which influence alike physiognomy and character. There are particularly interesting notes scattered throughout the *Gazette* upon plant pathology, a subject to which medical observers might perhaps turn their attention more minutely, for the similarity between certain of the morbid processes to be found in the vegetable kingdom and those prevalent in the animal kingdom seems to promise valuable information as the reward of research. We trust that the skill and energy displayed by Mr. Hutchinson and Mr. Swanton in compiling this interesting volume will be repaid by the securing of a large circulation and by the creation of a general movement in favour of the establishment of such museums as the one at Haslemere in many provincial centres. But where are the provincial centres to obtain the philosophers to act as honorary curators of their museums and honorary editors of their records? Haslemere has Mr. Hutchinson, and Mr. Hutchinson's knowledge of men and things is without parallel in range, while his willingness to diffuse that knowledge is unstinted. We do not suggest that all the local centres should await the arrival among them of a Jonathan Hutchinson, for that would be to condemn the movement for the establishment of local museums *ab initio*, but a local museum of observation cannot be started, we fear, without the benevolent autocracy of a learned and generous philosopher, while the blend of wisdom and altruism required is very scarce.

# Reports and Analytical Records

FROM

# THE LANCET LABORATORY.

### SPERMINE (KALENICHENKO).

(AD SIEMSSEN, 3 AND 4, WATER-LANE, GREAT TOWER-STREET, LONDON, E.C.)

THIS extract is prepared in the laboratory Kalenichenko of Moscow under the personal supervision of medical men. It contains the peculiar principles of the extract of animal testicle and is regarded as a valuable therapeutical agent in the treatment of neurasthenia, impotence, and wasting diseases. More recently the extract has been used with, it is stated, good results in cases of diabetes mellitus. The fluid submitted to us was of a light sherry-like colour and is evidently an alcoholic extract, suitable flavouring agents being present also. Precautions are taken, it is said, to insure that the glands (bovine testes) are healthy. It would appear that in the preparation of this extract particular care is taken to obtain a pure and active material.

### MUSCATOL.

(FRANK A. ROGERS, 327, OXFORD-STREET, LONDON, W.)

Muscatol is described as a preventive of insect bites. We have tried it practically and it certainly seems to ward off the attacks of these irritating pests. Insects are a real source of trouble to sportsmen and others and the demand for a preventive is widespread. Muscatol appears to us to be a spirituous solution of certain essential oils. It is pleasant and its application is soothing.

### TABLOID GINGAMINT.

(MESSRS. BURROUGHS, WELLCOME AND CO., SNOW HILL-BUILDINGS, LONDON, E.C.)

This is a satisfactory formula when an effectual antacid and stomachic is indicated in the relief of certain dyspeptic symptoms. Each tabloid contains 5 grains of sodium bicarbonate, $\frac{1}{12}$th grain of ammonium bicarbonate, with gingerin, saccharin, and oil of peppermint. This combination is well known to influence favourably appetite and digestion and is of value also in relieving griping, while it excites a gentle stimulant effect.

### GLENDROSTAN WHISKY.

(ALEXANDER MACKENZIE, 43, CHURCH-STREET, INVERNESS.)

It is satisfactory to find that this whisky answers to both the test of the palate and of analysis in accordance with its description. It is a fully matured, all-malt, pot-still spirit. It is peculiarly "soft" as regards its flavour and also somewhat "dry"—characteristics which afford evidence that the spirit is thoroughly matured. The results of analysis show an amount of ethers practically equivalent to that contained in genuine brandy. Other by-products, aldehyde, furfural, and higher alcohols, were present in amounts coinciding with those invariably found in genuine old malt whisky. The colour is somewhat dark, owing doubtless to contact with the cask. The whisky conforms to the standard of genuine old all-malt whisky.

### CALYX CORNFLOUR.

(H. N. BATHGATE AND CO., ATLANTIC HOUSE, COLLEGE-GREEN, BRISTOL.)

We have already referred to the superior quality of this cornflour but it has since been modified in an important way as a dietetic product chiefly by the addition of milk protein. The procedure may be regarded as dietetically sound since it is well known that cornflour is an excellent vehicle for protein foods. The absorption of cornflour in the intestine is very complete owing to the easy digestibility of the starch. A mixture of this digestible carbohydrate with milk protein should prove, therefore, to be a valuable food. According to our analysis the milk protein occurs to the extent of 9 per cent., which is a judicious proportion. As a rule, the quantity of protein added to foods is in excess of physiological indications. This preparation also contains 2 per cent. of calcium phosphate which is, of course, the normal mineral ingredient of cereal foods. When prepared as directed the preparation affords an agreeable food possessing a slight malty flavour due to the addition of a small quantity of malt. Our analysis was as follows: moisture, 11·90 per cent.; milk protein, 9·0 per cent.; mineral matter, 2·10 per cent.; and starch, 77·0 per cent.

### INVALIDS' AND INFANTS' BISCUITS.

(S. PETERS AND CO., 59, PARK-ROAD, LEYTON, E.)

These biscuits are well made and are prepared from nutritious materials. These include eggs, besides milk and flour. Their nutritious value is accordingly satisfactory, the protein amounting to 14·11 per cent. and the mineral matter to 1·30 per cent. Egg fat was readily extracted. The mineral matter contained an abundance of phosphate. The biscuits are very palatable and are evidently carefully baked, their spongy character being due, of course, to the disengagement of gas during fermentation.

### GRAY'S TONIC.

(E. J. REID AND CO., 9, 10, AND 4, DUNEDIN HOUSE, BASINGHALL-AVENUE, LONDON, E.C.)

There is no secret about the formula of this preparation, while it is being introduced, it is stated, to the notice exclusively of medical men and not to that of the public. It is a combination suggested by a medical man in the United States, and is described as a combination of glycerine, gentian, taraxacum, phosphoric acid, sherry, and carminatives. The taste is pleasant and its administration is without unpleasant effect on the gastric functions. It is spoken of as a useful tonic in nervous exhaustion and general debility. It is free from iron and does not give rise to the disturbing effects of ordinary iron salts. It contains 11 per cent. of alcohol as a menstruum. The formula appears clinically to be a satisfactory one.

### CRESSIDI'S CIGARETTES.

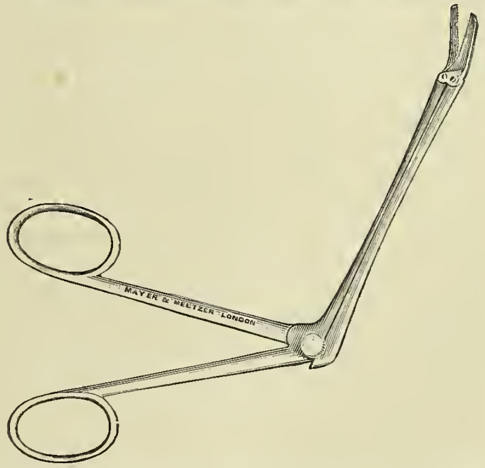
(CRESSIDI AND CO., 115A, QUEEN'S-ROAD, BAYSWATER, LONDON, W.)

Of a not particularly distinguished flavour, though they are very mild, these cigarettes are evidently made from a good quality Dubec leaf. The smoke is, comparatively speaking, unirritating and cool, whilst the tobacco itself is practically free from dust.

## New Inventions.

### A NEW PATTERN OF NASAL SCISSORS.

FOR the last six months I have been using a pattern of nasal scissors which has some new and, I think, useful points. The action is the same as the ordinary Grünwald's forceps but the cutting blades are placed at an obtuse angle with the shank and the cutting edges have slight saw teeth which prevent their losing grip of any hard substance. I have found them useful for removing the posterior ends of the inferior turbinates; to perform this they are passed as an ordinary Eustachian catheter, the blades opened, and then drawn over the end of the turbinate. They also can be used for removing the anterior end of the middle turbinate. They are made with the blades angled to the right or left. Messrs. Mayer and Meltzer have carried out my ideas with their usual skill and attention to detail.



Shrewsbury. C. G. RUSS WOOD, F.R.C.S. Eng.

---

NORTH-EAST LONDON POST-GRADUATE COLLEGE.—The opening lecture of the winter session of the North-East London Post-Graduate College and of the North-East London Clinical Society will be given by Dr. W. Hale White at the Prince of Wales's Hospital, Tottenham, N., on Thursday, Oct. 3rd, at 4 P.M. The subject of the lecture, to which all qualified medical practitioners who are interested are invited, will be the Various Conditions causing Enlargement of the Liver.

THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 28, 1907.*

## Medical Practitioners and Medical Referees under the Workmen's Compensation Act, 1906: The Legal Position.

We published last week a letter from Mr. A. Benthall who refers with approval to the regulations issued under the Workmen's Compensation Act, 1906, on the ground that they authorise the attendance of a medical practitioner on behalf of those whose cases under the Act are submitted, on dispute arising, to medical referees. The class of cases referred to is that in which a workman has been suspended or has claimed from a certifying surgeon a certificate of disablement in order to entitle himself to the benefits of the Act. The reference to the medical referee is to be ordered by the registrar of the county court on the application of the employer or of the workman when one or the other is aggrieved by the granting or the refusal of such a certificate. The medical man, therefore, who, according to our correspondent, will be able to appear before the medical referee and, so to speak, to make good his view of the patient's case on behalf of the employer or of the patient will be one who has examined the workman on behalf of the employer or who has treated him as his medical attendant. Possibly it is intended to be suggested that the certifying surgeon also may be present, as he too presumably would be interested in seeing his certificate upheld and in defending it. We can quite well understand that a medical man who has attended a workman or who has examined him on behalf of an employer should desire to be present in order that his opinion as to the case and as to the matters which he has observed should be fully considered by the medical referee, and it is from the point of view of the practitioner so situated that our correspondent has written. With regard to the certifying surgeon, we are inclined to doubt whether he would often have the time or the inclination to attend gratuitously even in order to defend his decision, and to do so would be inconsistent with his position. He is himself an independent judge whose decision has been appealed against.

With regard to the medical referee, the matter may to some extent be left to his discretion, but we are inclined to think that he will prefer to check personally and without assistance matters of observation recorded by others and submitted to him in writing. The question whether the presence of other medical men is desirable or not is no doubt one which may fairly give rise to discussion, but we are disposed to doubt whether the regulations are as clear in allowing it as is argued by Mr. Benthall. The regulations prescribe in detail the formalities to be observed by the employer or the workman according to their respective circumstances when aggrieved by the decision of a certifying surgeon. Those material to the question which we are discussing are as follows:—

> 9 (*a*). Any application under the foregoing regulations shall be made in writing and shall state the grounds on which the reference is asked for in accordance with the form prescribed in the schedule to these regulations, or as near thereto as may be. (*b*) The application shall be accompanied by the certificate, or a copy of the certificate, obtained from the surgeon by whose action the applicant is aggrieved, and by any available report or reports of any medical practitioner by whom the workman has been examined; and if the applicant is an employer by the notice of disablement or suspension served on him by the workman, and by an undertaking to pay any reasonable travelling expenses incurred by the workman in attending for examination by the medical referee. (*c*) The applicant shall also file with the registrar such copies of the application and other documents as aforesaid as may be necessary for the use of the medical referee and of the employer or workman, as the case may be, hereinafter referred to as the respondent, who, together with the applicant, is directly interested in the application.
>
> 14. The medical referee shall, on receipt of an order of reference duly signed by the registrar of a county court, together with copies of the documents required to be sent therein, fix a time and a place for a personal examination of the workman, and shall send notice to the employer and the workman accordingly. It shall be the duty of the workman, and, if the employer is the applicant, of the employer, or a person duly authorised by him, to attend at the time and place fixed by the medical referee, and in the event of failure on the part of the workman or employer, or both, to appear as required by this regulation, the medical referee shall decide on the matter referred to him forthwith upon such information as shall be available, and with or without a personal examination: provided that where the absence of the employer or his representative, or of the workman, is shown to the satisfaction of the medical referee to be unavoidable, or where the medical referee considers it necessary to apply for expert assistance as hereinafter provided, it shall be open to him to adjourn the inquiry on the reference and to resume it at such a time and place as he may fix, having given due notice to all persons concerned.
>
> 15. Except as otherwise provided by Regulation 14, the medical referee shall, before deciding on the matter referred to him, make a personal examination of the workman, and shall consider any statements made or submitted by either party.

In addition to these regulations the notice required to be given by a medical referee to a workman as to the holding of an inquiry contains the passage: "Any statement made or submitted by you shall be considered," which is also found in the notice to be given to an employer, together with the following, to be used when the employer is the appellant: "You, or some person duly authorised by you, are hereby required to attend at the above time and place."

Referring first to the last-quoted sentence, and to the passage in the regulations bearing upon it, there seems little doubt that under it an employer might choose to be represented by a medical man, but it is unlikely that he would be allowed to gain any advantage thereby not within the reach of the workman. Turning to the other passages quoted it would appear that their meaning is that written statements of the conditions found to exist in the workman made either by his or by the employer's medical man can clearly be laid before the medical referee who thus will be aware of the questions at issue in the case before him. It is, however, no doubt intended that he should give a decision so far as possible his own after forming an independent opinion free from bias and from the influence of others. If it had been intended that a medical man should or might be present on behalf of the employer or of the workman, or of both, the Home Office authorities would have said so in plain terms. This they have not done and it seems a little doubtful whether the language used should be construed so as to bear such a meaning. Perhaps it may give to the medical referee discretion to have present a medical practitioner or practitioners and to hear what they may have to say on either side, but it must be remembered that the Act is designed for the benefit of the working man and is not intended to favour the longest purse. The position of a workman when not a member of an organisation capable of finding funds to pay his medical adviser might be prejudiced, or might be thought to be prejudiced, if a medical man appeared on behalf of the employer before the medical referee and if at the same time the workman was not similarly supported.

◆

## Poisonous Metallic Carbonyls.

A very interesting reaction discovered by Dr. Ludwig Mond is that which takes place between carbon monoxide and nickel or iron. In either case a volatile compound is formed termed respectively nickel or iron carbonyl. The reaction is utilised in the recovery of metallic nickel from its ore, the carbonyl formed decomposing on heating to 150° C. into nickel and carbon monoxide. In the commercial production of nickel in this way some cases of fatal poisoning amongst the workpeople have occurred owing to the escape of the nickel-carbonyl gas. The symptoms are giddiness, dyspnœa, and vomiting, these passing off as soon as the sufferers are brought into fresh air. After from 12 to 36 hours, however, dyspnœa returns, cyanosis appears, and the temperature shows a rise. Cough with more or less blood-stained sputum eventually appears. The pulse-rate increases but not in proportion to that of respiration. Delirium frequently occurs and death in the fatal cases takes place between the fourth and eleventh days. The chief changes found post mortem are hæmorrhages in the lungs, œdema of the lungs, and hæmorrhages in the white matter of the brain. The question as to what constituent of nickel carbonyl is responsible for the toxic effects has been studied by several observers and more recently by Mr. H. W. Armit in the Lister Institute of Preventive Medicine, an account of his work appearing in the July number of the *Journal of Hygiene.* It is conceivable that the carbon monoxide of the nickel compound is wholly or partly responsible for the symptoms or that nickel carbonyl is absorbed as such and acts toxically, or that the nickel of the compound produces the symptoms. As an alternative view may be considered the possibility of nickel carbonyl being absorbed as such, the nickel being set free later, acting toxically in the tissues. Mr. Armit shows that carbon monoxide is not the toxic agent because firstly in fatal poisoning from minimal doses the actual quantity employed is insufficient when combined with the hæmoglobin to produce more than 5 per cent. of saturation with carbon monoxide and this amount is harmless. Dr. John S. Haldane has shown that in connexion with mine-gas poisoning with less than 0·1 per cent. of carbon monoxide in the air the blood does not become more than 50 per cent. saturated, so that even a prolonged exposure does not cause a complete helplessness. With 0·2 per cent. the blood will become about 67 per cent. saturated and complete helplessness, with loss of consciousness, would doubtless occur. This percentage would, of course, in the prolonged exposure finally cause death. The second argument which Mr. Armit gives against the theory of pure carbon monoxide poisoning is that the blood of an animal saturated to the extent of 32 per cent. with carbon monoxide loses carbon monoxide during subsequent poisoning by nickel carbonyl. Thirdly, iron carbonyl is, he says, less toxic than nickel carbonyl, although it contains more carbon monoxide. It would thus appear that the toxic effect of nickel carbonyl is not produced by the carbon monoxide present; and, further, when the quantity of nickel carbonyl vapour inhaled is only just sufficient to kill, the total available amount of carbon monoxide is insufficient to influence the course of poisoning. The next point obviously to determine was whether nickel carbonyl in contact with the fluids and tissues of the body gives rise to a toxic product of decomposition, and the investigation of this part of the problem led to very interesting results. To begin with, nickel carbonyl in the presence of air and moisture decomposes and a deposit forms which is due to the dissociation of the compound and the formation of a hydrate or carbonate of nickel. Experiment demonstrated the fact that nickel carbonyl is more soluble in blood serum than in water, and its solubility in blood itself appeared to be the same. At the same time, however, there is dissociation of the nickel carbonyl, the product of dissociation proving also to be more soluble in serum than in water. Bearing in mind the influence of serum in keeping metallic precipitates in colloidal solution it is not improbable that the dissociation product exists in serum in colloidal form. The conclusion is thus reached that first of all the poisonous properties of nickel carbonyl do not depend, as was at first supposed, on the carbon monoxide of the compound but on the nickel, and that most probably this metal is deposited as a slightly soluble compound in a very fine state of subdivision over the immense area of the respiratory surface. It would be interesting to know whether iron carbonyl gives rise in the same circumstances to a similar dissociation product which, if it be physically similar to the nickel product—that is to say, in a fine state of subdivision or in a colloidal condition—might be expected to exhibit some analogy in regard to toxic effects. Iron carbonyl, however, is reported to be less toxic than nickel carbonyl, so that it may be assumed that the former either does not give rise to a dissociation product, or that, if it does, this product does not act as a colloidal or mechanical poison.

◆

## Child Labour and Public Health.

There are many probably of the present generation to whom "The Song of the Shirt" constitutes a reminiscence of the reading of their early days and was even then looked upon as telling of an evil condition of things belonging to a past age of society, one which modern prosperity and modern hygienic development had rendered impossible of repetition. To such perhaps the recent exhibition of sweated industries may have been something of a revelation. It seems barely credible that in these days of sanitary inspectors and health legislation, together with a marked increase in the general standard of living throughout the community, there should still exist a class of workers ground down by abject poverty and the greed of middlemen, living on a pittance scarcely adequate to maintain life, and working to earn this miserable wage for 14 or 16 hours a day with hardly an interval even for meals. That white slavery of this kind does exist among us is known but too well to those who work among the poorest classes in the East-end of London and a little book recently written by Mrs. ARCHIBALD MACKIRDY [1] gives a simple and unadorned account of the actual sufferings of some among them. It is beyond our province to deal with the social conditions which render it possible for such sweating to flourish as is here revealed—waistcoats made at 7*s*. 6*d*. a dozen, artificial violets at 1½*d*. a gross, and other work at similar rates, allowing a skilful worker to earn by unending toil some 6*s*. or 7*s*. a week. Nor can we discuss the remedies proposed, of which the one most hopefully regarded by the author is the fixing of a minimum wage for every industry, a plan already adopted with some success in that continent of social experiments, Australia. It is with problems of health that we have to deal and the sweating evil leads beyond question to serious violations of sanitary law.

The two main problems which strike the reader of Mrs. MACKIRDY'S book are the injury to the health of children by continuous work in the intervals between their school attendances and the dangers of spreading infectious diseases owing to the insanitary conditions under which much homework is carried out. How can we wonder at the miserable physique of many of our town dwellers when we find that children directly they come home from school are set down to some drudgery in the fœtid atmosphere of a crowded room, making paper boxes for sweets or crowns of flowers for candidates for confirmation, in order to help their mothers to earn the starvation wages by which they are barely kept alive? Often, indeed, they return home to find not only no rest but no food—to beg in vain for a crust of bread and then to go back again to school to have their starved brain-cells worried with more attempts at learning without the needed pabulum to maintain their activities. Nor is it only homework of this nature that is the lot of too many of the children in our elementary schools. Many act as errand boys and girls in their spare hours and are worn out with tramping the streets, often with heavy parcels to carry, during the time when they should be recruiting their energies by rest or play. To get up before daylight and to scrub an indefinite number of doorsteps before going to school is not a process conducive to health, and when we learn that this fate may befall a child of seven or eight years and realise the actual physical labour involved in carrying round the necessary implements and lifting buckets of water in the course of the operations we find it difficult to exult very loudly over the civilisation of the present age.

But there is another danger, that of the transmission of infectious disease by means of the articles manufactured by the sweated worker, which needs to be brought home to the other classes of society. In the crowded dens in which the workers live infectious diseases when they once break out must find a fertile soil. The overworked victims can offer little resistance to any morbid influence. Without food, without rest, without ventilation, they afford every essential condition for easy infection. And the materials on which they work are often well suited to convey contagion. The makers of cheap clothes habitually use the material which they make up for their own bedding. In one case quoted in the book before us a child with measles was lying covered with the stuff brought from the factory ready to be made into garments for others. In another instance the mother was lying on the bed with a child aged eight years who had "open tubercular wounds discharging," while the stench in the room was such that the visitor could scarcely endure to enter. All the other children were also suffering from tuberculosis. It is impossible to tell in what infection may lurk, for the proceeds of sweated labour are not sold only to the poor; they find their way into the houses of the rich. The ready-made garment, the neat card of hooks and eyes, the dainty paper box, the delicate artificial flowers, all alike are liable to bear the taint of their origin and to scatter seeds of disease. Truly—

> . . . . . . "medio de fonte leporum
> Surgit amari aliquid quod in ipsis floribus angat."

Is there actually no remedy for this state of things or is it merely that our politicians are busy with more showy legislation and our social reformers are engaged in the pursuit of visionary Utopias? One fact at least is clear, and that is that the aliens who flock to our hospitable shores are the worst offenders in the conduct of sweated industries. The alien who starts as a sweated slave contrives in time to save a few shillings and starts himself to sweat others whom he finds ready to his hand. Parasites upon our community, these alien sweaters displace our own workers and drive ever downwards the price paid for home work. Yet little is done to protect our people against the invasion that is constantly in progress, and what little is done in a lucid moment by one Government is undone in a fit of sentimentalism by the next. The evil has been pointed out over and over again, yet it is still rampant in all our large towns and the misery which it causes is apparently increasing. If modern society—not only the society of the rich who too often care little for those beneath them, but also the trade union society which thinks only of its own members and the shop-keeping society a section of which grows rich on the proceeds of sweated labour—is too selfish to alter this system of slavery from moral motives, yet when the danger which it runs from the disease bred in the sweater's dens is made clear perhaps we may hope that self-interest may be sufficiently enlightened to insist on the removal of such plague spots from our midst.

---

OPENING OF AN ISOLATION HOSPITAL.—On Sept. 18th Colonel H. Lewis, the chairman of the Glamorganshire sanitary committee, formally opened, in the presence of a large gathering, a new isolation hospital which has been erected at Blackmill for the districts of Ogmore, Garw, and and Gilfach. The building, which is situated about a mile from the village, has been built at a cost of £7211, exclusive of £600 which have been spent for furnishing. The institution will provide accommodation for 12 patients.

---

[1] Baby Toilers. By Olive Christian Malvery (Mrs. Archibald Mackirdy), author of "The Soul Market." London: Hutchinson and Co. 1907. Price 2*s*. 6*d*.

# Annotations.

"Ne quid nimis."

## THE ANARCHICO-REGICIDE: HIS MEGALOMANIA.

"La Monomanie Vaniteuse" or "Ambitieuse" of the older school of French alienists has now (writes an Italian contributor) been replaced by the term "Megalomania," of which, perhaps, the most typical examples are provided by Italy. A recent visit of Dr. Giuseppe Dominione to the great Manicomio Giudiziario of Montelupo in Tuscany enables that legal expert to give several illustrations in point. In a series of brilliant articles contributed to the Milanese *Secolo* he invites the medical readers to a "march past" of the criminally insane, beginning with Giovanni Passanante, the "cuoco-filosofo" (philosopher-cook) of Salerno who, in the November of 1878, attempted the life of King Humbert. His Majesty had been some ten months on the throne and in company with Queen Margherita, his little son the Prince of Naples, and his Prime Minister, Benedetto Cairoli, was making a royal progress through the capital of the ex-kingdom of the Two Sicilies when suddenly from among the cheering crowd a young man leaped on the carriage and resting one foot on the step dealt a blow at the King with a stiletto, which missed its object but penetrated the thigh of Cairoli. The wound was not fatal and both the King and Cairoli exerted themselves to save the frantic aggressor from the mob which would have given him short shrift. He was instead conducted under a strong escort to prison, whence after the usual delays he was removed to solitary confinement and thereafter to penal servitude in the "ergastolo" of Portoferraio (Island of Elba). Ten years of this life developed such signs of insanity that he was transferred to the Manicomio Giudiziario of Montelupo, where Dr. Dominione the other day found him a shrivelled old man of 57, with snow-white hair and face intersected like a map with lines of "longitude and latitude." So enfeebled that he could stand only with the aid of a stick, the "agile tiger" of 1878 responded to questions in a tremulous, scarce audible voice, hovering always round his *idée fixe* that in that year he was to be "the greatest of men," diffusing from the pedestal of his regicidal act theories that were to rehabilitate humanity. All throughout his 29 years of confinement, solitary or penal, he employed himself at every available hour in writing out his schemes for regenerating his fellow man, supplementing his manuscript with "illustrations," some of them modelled in bread or chalk or whatever material came to hand—manuscripts and illustrations alike deposited in the museum of Montelupo for the benefit of the psychological student. Among his last words to Dr. Dominione were, "I want to speak to the delegato (the sub-sheriff); I must descend the stairs ......," till cajoled by Dr. Codeluppi, the director of the Manicomio, he tottered back to the corner of his cell and threw himself sighing, if not sobbing, on his mattress. "He cannot hold out long," was whispered to Dr. Dominione as he took his leave; "after the pneumonia from which he made a poor recovery some months ago, he is declining fast." From this typical, pathetic figure of the "megalomaniac" Dr. Dominione was conducted by the director to several others, all presenting dramatically interesting traits, till they paused before the cell of Pietro Acciarito. This man—he was a youth then—was convicted of the second of the three attempts made on the life of "Humbert the Good." During the race week of the Italian Derby in April, 1897, he had ensconced himself behind a hedge to waylay the King as His Majesty was driving from Rome along the Via Appia Nuova to the grand stand, but before he could reach the carriage he was collared and arrested. Put on his trial he was passed from one prison to another, the last being the Manicomio Giudiziario at Montelupo. His mental symptoms more than justified the transfer, as Dr. Dominione discovered after a brief interview with him. The heavy bolts of the cell door having been withdrawn a furious voice demanded: "Signor Direttore, questa famosa carta, questa penna, quest' inchiostro, quand' è che me li date?" (Mr. Director, this much-talked of paper, this pen, this ink, when are you to give me them?) "Keep quiet, Pietro," was the answer; "to-morrow." The would-be regicide was a fine specimen of a young man, glossy black hair and beard forming a frame to his handsome features. "This paper," insisted Acciarito, getting more and more furious. "I will let you have it, don't doubt it," replied the director, who, turning to the visitor, remarked: "He worries over this. The sheets I give him serve only for a hundredth or thousandth protest on his part." He, too, was a would-be regenerator of society, beginning, as his brethren of the same apostolate always try to begin, by taking the life of the most conspicuous of his compatriots. Foiled in his attempt, the self-flattery of the megalomaniac sustains him even in his cell and perhaps explains his yet vigorous physique which will stand him in longer stead than his poor neighbour, Passanante's. Presently the midday bowl of pasta-soup flavoured with tomatoes was handed to him. This sufficed to break off the interview, as he retired to the corner of his cell. "His mind," says Dr. Dominione, "has already taken flight like a sparrow from its cage, but his body will make a good fight against the horrors of segregation." Another case, not, however, in Italy, though that of an Italian, may put the finishing touch to Dr. Dominione's experiences. In Switzerland Luccheni, who, in the August of 1898, stabbed the Empress of Austria as she was entering the steamboat at Geneva, is as typical a specimen of the megalomaniac as any country has yet produced. When the gratified self-esteem that had borne him elated through the trial and through the first weeks of imprisonment had died down he was found by the director of the prison in a dejected condition, in which he remained till a few questions were cautiously put to him with a view to his disclosing what confederates he might have had in his crime. The creature brightened up immediately. "Oho!" he exclaimed, "the newspapers are still talking of me!" and with these words he seemed to become another man. So pronounced a case of megalomania has, it is understood, made a deep impression on the legal mind, Swiss and Italian, counselling a different mode of procedure. No publicity; no "pomp and circumstance" of a thronged law-court; no "advertisement" of the megalomaniac by newspaper reports and pictorial illustrations. Such in future it is proposed should be the conditions under which the Passanantes, the Acciaritos, the Lucchenis should be brought to trial and carried through it. Megalomania would thus lose one of its chief attractions and incentives for the disordered minds in which it has taken root.

## A CANCER EXHIBITION AT BRUSSELS.

A cancer exhibition will be a feature of the International Surgical Congress which is to be held at Brussels in September, 1908. All objects connected with cancerous disease may be entered for exhibition—namely: (1) macroscopic or microscopic cancer specimens which are either instructive from a surgical standpoint, or of special interest on account of their localisation or method of dissemination; (2) anatomical specimens or drawings illustrating operations for cancer; (3) anatomical preparations of the lymphatic vessels and glands; (4) statistical wall-charts illustrating the frequency of primary cancer and its metastases; (5) statistical charts dealing with the spread of cancer in different countries, exact plans of so-called cancer "nests" and genealogical trees of families in which cancer has existed for several generations; (6) plans of cancer institutions and hospitals; and (7) proposals as to the means by which a knowledge of the importance of the early diagnosis of cancer may be brought home to the public. Exhibits should be forwarded between August 20th and 31st, 1908, to the general secretary of the International Surgical Society, Professor Dr. Depage, 75, avenue Louise, Brussels, who will take charge of the exhibits, will arrange for their exhibition, and at the close of the congress will return them to their owners. The programme of the congress will be so arranged that exhibitors can demonstrate their specimens to the members during its progress.

## INSANITY AND MODERN WAR.

A RECENT issue of the *Allgemeine Zeitschrift für Psychiatrie* (Band LXIV., Heft 2) contains an extremely interesting article on the cases of insanity which occurred amongst the troops of Russia during the recent war between that country and Japan. The author, Dr. Awtokratow, was intrusted with the difficult task of organising the system for segregating and treating these cases and subsequently had charge of the Central Asylum for Insane Soldiers established at Kharbin, so that he was exceptionally well placed for obtaining authoritative information on the subject. In view of the terribly severe strain on the nervous system of the combatants which is involved in warfare under modern conditions it might reasonably have been anticipated that in an army so large as that engaged in the Manchurian campaign a considerable number of cases of mental disease would be likely to occur. At the outset, however, this very obvious probability was not apparently perceived by the Russian military authorities, and no special provision was made for the treatment of the insane who were accordingly detained in the ordinary field hospitals to their own detriment and that of the other patients. When the futility of this method had been sufficiently demonstrated in practice a more rational system was devised, and all cases of mental disease, after a preliminary period of observation in a sort of psychiatric ambulance, were sent to the central asylum at Kharbin. From Dec. 15th, 1904, when this asylum was opened, to March 18th, 1906, when it was closed the total number of patients received was 1349, of whom 275 were officers and 1072 belonged to the rank and file. As regards the relative frequency of the several forms of mental disease the two classes showed some curious differences. Amongst the officers chronic alcoholism was the commonest variety of insanity, occurring in 34·58 per cent. of the total number of cases, the other groups of numerical importance being neurasthenic insanity (11·2 per cent.) and general paralysis (10·4 per cent.). In time of peace, it may be remarked, general paralysis is the most frequent form of disease amongst officers, alcoholism being second on the list. Amongst the rank and file treated at Kharbin these two clinical varieties were comparatively much less common, chronic alcoholism amounting only to 10·86, and general paralysis to 4·3 per cent. of the total. Presumably the heavier responsibilities incumbent on the officers are in some measure accountable for this difference, the greater demand on intellectual activity contributing both to the development and to the detection of such disorders. The predominant form of disease amongst the soldiers was epileptic insanity, no less than 27·9 per cent. of the cases being classed under this head. Alcoholism and confusional insanity (*Verwirrtheit*) came next in importance. As to the cause of this remarkable frequency of the epileptic psychoses, which contrasts with their relative rarity in time of peace, Dr. Awtokratow considers that while it may be due in part to the less discriminating examination of recruits and the lower standard of fitness demanded in a time of emergency, it is also to be attributed in some measure o a direct influence of the stress of battle, for in several instances that came under his observation he ascertained that the patients, though of epileptic stock, had shown no symptoms of the neurosis until at the close of a severe engagement they were seized with convulsions followed by epileptic mania. Traumatic psychoses were relatively rare, amounting to 3·1 per cent. of the insanity of officers and to 3·6 per cent. of that amongst the rank and file. Of course, only those cases in which the mental diseases developed soon after the injury would have come under notice at the Kharbin Hospital. As might be anticipated, in the acute insanities, particularly in neurasthenic and confusional cases, the etiological influence of the war gave a characteristic colour to the mental symptoms, phases of panic terror, with hallucinations of bursting shells, pursuing enemies, putrefying corpses, and so forth, being especially frequent. In the cases of general paralysis described by the writer no such influence appears to have been perceptible in the delusions and hallucinations of the patients. The contrast thus shown between general paralysis and the acute psychoses in regard to the influence of the emotional shock causative of the disease on the affective tone and character of the delirium is in accord with what has been observed under like conditions elsewhere. In Paris, for instance, during the siege and the Commune, and in the disturbed districts of Russia within the last two years, the painful and terrifying experiences which gave a distinctive stamp to the thought and feeling in other forms of insanity did not appreciably modify the mental symptoms of general paralysis.

## THE TREATMENT OF TETANUS BY INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE.

SODIUM and calcium salts have been shown to have stimulating effects on some of the bodily functions. It occurred to Meltzer that the salts of magnesium, another element found plentifully in the tissues, might have an inhibitory action on the same functions. In conjunction with Auer[1] he made a series of experiments on animals which confirmed this view. The subcutaneous injection of magnesium sulphate produced deep and prolonged anæsthesia, with muscular relaxation and abolition of reflexes. Intravenous injection affected the centres in the medulla, depressing the centres for respiration and deglutition, but not affecting the cardiac mechanism. Direct application of the salt to nerve trunks produced irritation but abolished conductivity which was restored on washing the salt away. Intraspinal injection produced surgical anæsthesia in monkeys, which led Meltzer to recommend its use in man. A few abdominal operations have been performed after the intraspinal injection of one cubic centimetre of a 25 per cent. solution of magnesium sulphate for every 20 pounds of body weight. This produced muscular relaxation, anæsthesia, loss of tendon reflexes, and slowing of respiration. In six out of 14 collected cases the patients lost consciousness. In only one case was the cardiac rhythm disturbed. Of untoward effects slowing of the respiration was the most serious and sometimes artificial respiration had to be performed. Washing out of the spinal canal with normal saline solution relieved this symptom. Meltzer suggested the intraspinal injection of magnesium sulphate in tetanus in order to relieve the spasms. A few cases have been reported in which this method was adopted with success. In the *Journal of the American Medical Association* of August 10th Dr. G. C. Robinson has recorded the following case. A boy, aged 11 years, weighing 70 pounds, was admitted into hospital on May 11th, 1907. The temperature was 99·6°F., the pulse was 112, and the respirations were 40. There was no history of any wound. On May 1st the illness began with slight pain in the jaws which soon became stiff. The stiffness increased and on the sixth day he was unable to go to school. The exertion caused profuse sweating and on returning home there was stiffness of the right side, especially of the leg. On the following day, May 8th, general rigidity had set in. On admission he was remarkably rigid. He could not move his head and his jaws were tightly locked. The corners of his mouth were drawn down, his eyes were partly closed, and the risus sardonicus was present. The arms could be moved somewhat but were very stiff. The muscles of the trunk were rigid. The back was arched, the abdomen was board-like, and the legs were held immoveably. Every few minutes, especially when disturbed, he stiffened himself, muscular twitchings occurred, and he moaned and complained of abdominal pain. An attempt was made to administer ethyl chloride but in less than a minute violent spasm of the muscles of respiration and cyanosis were produced. He was revived by artificial respiration. Lumbar puncture was performed and clear cerebro-spinal fluid rose in the manometer to a height of 235 millimetres. Three cubic centimetres of a 25 per cent. solution of magnesium sulphate were injected at 3 P.M. After five minutes the neck was less rigid. In one hour distinct relaxation of the muscles had occurred. At 5.30 P.M. the change was remarkable; the patient was drowsy; his neck could be freely moved; his jaws could be separated about 1·5 centimetres; his abdomen was soft, and his legs and arms were relaxed. He seemed in excellent condition and was comfortable except for a slight headache. At 1 A.M. the rigidity had partially returned and on the morning of the twelfth day, 18 hours after the injection, it had completely returned with the spasms. At 10.30 P.M. lumbar puncture was performed. Only one or two drops of cerebrospinal fluid, which did not seem to be under any pressure, were obtained; three and a half cubic centimetres of the solution of magnesium sulphate were injected. At 11 P.M. the neck was less rigid and the knees could be slightly flexed. The patient felt drowsy but more comfortable. Relaxation was fairly complete at 12.15 A.M. On the fifteenth day the rigidity gradually returned and at 8.15 P.M. lumbar puncture was performed. The cerebro-spinal fluid rose 160 millimetres in the manometer. About three cubic centimetres were withdrawn and four cubic centimetres of the solution were injected, with the same result as before. The rigidity returned in less degree and after the seventeenth day it gradually diminished. Recovery ensued.

---

[1] American Journal of Physiology, 1905 and 1906.

## THE RECENT CONFERENCE ON HYGIENE AND TEMPERANCE.

IT will be remembered that on St. George's Day, April 23rd, of the present year advantage was taken of the visit to the mother country of the colonial Premiers to hold a conference for the purpose of obtaining information as to the steps that had already been taken in the outlying parts of the empire to introduce the teaching of hygiene and temperance in educational establishments. The conference was convened by a composite committee consisting of representatives of the hygiene and temperance committee of the medical profession and of the health committee of the British Medical Association. The Earl of Elgin, Secretary for the Colonies, lent his support and Lord Strathcona and Mount Royal, the veteran High Commissioner for Canada, Sir John Gorst, recently Minister for Education, and Sir John Cockburn acted as chairmen. Many prominent colonial citizens were also present and educational authorities of the highest standing, including officially appointed delegates from the various colonies and European states, took an active part in the discussions. Among the members of the medical profession who either contributed papers or took part in the discussions were Sir Lauder Brunton, Sir William Collins, Sir Victor Horsley, Sir Philip S. Jones, Mr. James Cantlie, Dr. Robert Dinnet (Paris), Dr. Foveau de Courmelles (Paris), Mr. A. Pearce Gould, Dr. Helminius-Seppälä (Scandinavia), and Professor G. Sims Woodhead. The proceedings of the conference, which make a valuable contribution to educational literature, have now been issued in the form of a little book of 129 pages[1] at a price which puts it within the reach of everyone who is interested in the subject of education. Mr. Pearce Gould contributes a preface in which incidentally he calls attention to the system initiated by Mr. Chamberlain when Secretary for the Colonies of adapting teaching to the special and peculiar needs of the peoples dwelling in varying climates and exposed to differing epidemic and endemic scourges. "Naked African children," he says, "are now taught how to protect themselves from malaria, not by obedience to cut-and-dried rules, but by the actual observation of the facts which the most advanced science has revealed. If the methods of science are not inappropriate for the aborigines of Africa they cannot be unsuitable for the far more developed children of the villages and towns and even of the slums of Great Britain. ...... We must ask ourselves what are the physical evils our population has most to dread and must teach them all that the most exact science can tell them. ...... We must not be afraid of adopting the *methods* of science in imparting the *lessons* of science." One of the resolutions passed by the conference was to the effect that a medical department should be instituted in the Board of Education and it is signally felicitous that the proceedings of the conference should have been published in book form almost on the eve of the announcement that such a department had been formed.

## BIER'S TREATMENT OF TUBERCULOUS SINUSES.

THE treatment of inflammation, acute and chronic, by the induction of passive hyperæmia, introduced by Professor Bier, has not been much used in this country though it has given remarkable results. In the limbs passive congestion is produced by the application of an elastic bandage above the inflammatory area. But on the trunk and head this method is obviously inapplicable. For the treatment of inflammation in the latter localities Professor Bier's assistant, Dr. R. Klapp, has introduced the method of producing hyperæmia by means of glasses attached to small indiarubber bags (like cupping glasses). A partial vacuum is produced by applying the glass with the bag compressed. The part to which the glass is applied projects and becomes of a reddish-blue colour. In the *Boston Medical and Surgical Journal* of June 6th, Dr. J. W. Sever has reported good results from this treatment of tuberculous sinuses due to bone disease which are proverbially slow in healing. Drainage is difficult and requires assistance. By cup suction this indication is fulfilled and, moreover, hyperæmia is produced which stimulates the healing process. Dr. Sever uses small glass cups about $1\frac{1}{2}$ inches in diameter and 2 inches high, the top of which is tapered to fit a rubber tube connected with a rubber bulb. The cup is applied with the bulb compressed, creating a vacuum sufficient to maintain the cup in position. In places where the elastic bandage could be applied, such as the knee, ankle, elbow, or wrist, this is also used. The treatment was carried out for one hour daily. At no time was the suction strong enough to cause pain. Every few minutes the cups were removed to clean them and to renew the vacuum but the bandage was not removed during the hour. Some cases did well from the beginning. In others the sinuses closed only to reopen. In two cases the method had to be abandoned on account of the occurrence of considerable hæmorrhage. Histologically there were observed dilatation of the capillaries and lymphatics and increased migration of leucocytes. At first the amount of discharge considerably increased but later it diminished. In some cases, however, the increase persisted and this seemed to impair the patient's general condition so much that the method had to be abandoned. The following are some examples. A boy, aged eight years, had had tuberculosis of the hip and a sinus for five years. After a month's treatment the discharge diminished steadily and the child gained 11 pounds in weight. A boy, aged three years, had tuberculosis of the knee. A plaster apparatus was applied and a compression bandage was used daily for six months. During this time the child walked about as before the onset of the disease. Marked decrease in pain and increase in movement of the joint occurred although in the upper part of the joint an abscess developed which opened spontaneously three months after the onset of the disease. The treatment was continued and a sterile dressing was applied. Then the suction treatment was begun and the sinus closed 16 weeks later. The patient had about 15° of motion in the joint and continued to wear a knee-splint for protection. A boy, aged nine years, had for four years tuberculosis of the spine and for nine months a sinus which followed incision and drainage of a psoas abscess. The discharge was profuse. Suction treatment was begun. In about five weeks the discharge greatly diminished and the general condition much improved. Of 16 cases treated, marked improvement or healing took place in eight. In five there was no local improvement but weight was gained and the colour index of the blood rose.

---

[1] Teaching of Hygiene and Temperance, being the Proceedings of the Conference on the Teaching of Hygiene and Temperance in the Universities and Schools of the British Empire. London: John Bale, Sons, and Danielsson. Price 2*s.* net.

## HUMAN TERATOLOGY.

To Geoffroy Saint-Hilaire science owes the first really systematic study of monstrosities and anatomical malformations and his "Philosophie Anatomique" needs little more than supplementing to maintain the authority which it has hardly lost since its publication in 1818–20. No nationality is exempt from what the older investigators called "Lusus Naturae," the British Isles being not the least prolific in these phenomena. Scotland in the first decade of the sixteenth century anticipated China in the second decade of the nineteenth in producing "twins" like those called from their birthplace "Siamese." Buchanan in the thirteenth book of his "History of Scotland" describes this "monstrum novi generis in Scotia natum" as in the lower part of its body resembling a male child in no wise differing from the normal; but above the umbilicus the trunk and all the members were double, representing both sexes. "Id Rex," he tells us, "diligenter et educandum et erudiendum curavit; ac maxime in musicis, qua in re mirabiliter profecit." Nay (he proceeds), it mastered various languages, while the two bodies betrayed diverse wills and would sometimes fall out with each other. When they agreed they would hold a consultation in the interests of both. This, too, was remarkable, that any hurt to the legs or loins below was felt by both bodies, but when the hurt was inflicted above the pain evoked response in one body only. One of the bodies, he adds, died several days before the other, but the survivor gradually pined away. "Vixit id monstrum," he concludes, "annos XXVIII. Hac de re scribimus eo confidentius quod adhuc supersunt homines honesti complures qui haec viderint." In all this we seem to be reading an account of the "Siamese twins" who died in 1874, aged 63 years. Among contemporary nationalities Italy (as THE LANCET, in its Italian correspondence, has from time to time put in evidence) contributes the most numerous, as well as the most bizarre, specimens to the repertory of teratology. In the day now passing her professional journals record the following: In the Island of Sardinia a peasant woman, after prolonged labour lasting three days, was delivered of a gruesome monstrosity. The head of the child (male), normal in size and oval in contour, is without hair; the face is "framed," so to speak, with long hair; the eyes are in the middle of the forehead; the ears are absolutely wanting. In the middle of the thorax there is a "croce" (cross) formed of hair which covers the backbone, the legs, and the arms, and is at once very long and fine. The hands are wanting. This monstrosity is still alive and the mother, who, it appears, has not yet been allowed to see it, is doing well. From the physical to the moral and intellectual monstrosity, says one of the commentators on the above, there is but a step—how short and how frequently taken let the criminal-lunatic asylums of Italy bear witness.

## COÖPERATION FOR ASYLUM NURSES.

DURING the past two months there have been several notes in the *Nursing Times* on the subject of asylum nurses. Attention has been drawn to the fact that there is no coöperative nursing home for these nurses similar to those staffed by nurses who have been trained in general hospitals. We are aware that at least one nursing coöperation has asylum-trained nurses on its staff, but it would appear both in the interests of the public and for the better recognition of fully-qualified asylum nurses that a home should be started which shall only supply properly trained nurses who in return shall have the advantages of working under a coöperative system in the matter of their remuneration. We presume, as a guarantee that the nurses so supplied have attained a certain degree of efficiency, that they will be expected to hold some recognised certificate such as that granted by the Medico-Psychological Association of Great Britain and Ireland. We are informed that Miss Jean Hastie is starting early in October a "Mental Nurses' Coöperation" which, we understand, has the sympathy and support of several consulting physicians in psychological medicine, and if properly managed the scheme should prove a successful one.

## DIPHTHERITIC ENDOCARDITIS.

IN THE LANCET of Sept. 21st, p. 826, we published an unusually interesting case of malignant endocarditis of diphtheritic origin recorded by Dr. J. T. C. Nash. The patient was a child between three and four years of age. The clinical history of the case is worthy of notice. The primary disease (diphtheria) was of so slight a nature that it had passed practically unnoticed. It was only on cross-examination of the parents of the child after a post-mortem examination had been made that it was ascertained that he had suffered from ear-ache and a discharge from the ear three weeks previously; sore throat, however, had never been complained of. Doubtless such slight cases, owing to non-recognition, may be the starting-points of severe epidemics. When brought under medical notice the boy had headache, loss of appetite, furred tongue, constipation, and a fugitive erythematous rash. The later symptoms of occasional delirium, restlessness, and tenderness along the back with a continuance of drowsiness, headache, and fever, had suggested the possibility of malignant endocarditis. 36 hours before death retraction of the head and strabismus, and later a petechial rash and slight opisthotonos, led to a suspicion of cerebro-spinal meningitis. At the necropsy on examination of the heart vegetations were found on the aortic and mitral valves. On bacteriological examination a copious growth of Klebs-Löffler diphtheria bacillus was obtained from the cerebro-spinal fluid and almost a pure culture of the same organism from the material obtained from the heart. The diphtheria bacillus had evidently invaded the central nervous system and embolic plugs laden with diphtheria bacilli would be sufficient to account for the symptoms resembling cerebro-spinal meningitis. As Dr. Nash points out, this case suggests that isolated cases of death preceded by symptoms of cerebro-spinal meningitis should not be attributed to epidemic cerebro-spinal fever without adequate bacteriological proof. We agree with him when he says that to justify the diagnosis of epidemic cerebro-spinal fever it would appear to be quite necessary that the presence of the diplococcus intracellularis of Weichselbaum should be demonstrated. There are many interesting points in connexion with this case that are worthy of careful consideration, and Dr. Nash duly discusses some of them. Dr. W. Bulloch, who conducted the bacteriological examination, remarks that cerebro-spinal symptoms in association with malignant endocarditis have been formerly observed, but he is not aware that the diphtheria bacillus has previously to this instance been demonstrated as the infecting organism.

## THE INTERNATIONAL STOMATOLOGICAL ASSOCIATION.

THE inaugural meeting of the International Stomatological Association was held in Paris on August 6th and 7th, immediately after the first French Congress of Stomatology. The officers of the association are as follows: Honorary Presidents: Professor E. S. Talbot (Chicago) and Dr. L. Cruet (Paris). President: Professor J. von Arkovy (Budapest). Vice-Presidents: Professor C. Redard (Geneva), Professor C. Platschick (Milan), Dr. Otto Zigmondy (Vienna), and Dr. Johan Rygge (Christiania). Secretary-General: Dr. H. Allecys (Antwerp). Secretaries: Dr. J. Sim Wallace (London), Dr. J. Breitbach (Dresden), and Dr. D. Nicoleacu (Bucharest). Treasurer: Dr. F. A. Meyer (Amsterdam). In addition there is a representative council consisting of 20 members, each representing a different country. The officers and representatives are each elected for three years. The next meeting of the association will take place at Budapest in August, 1909, immediately after the Sixteenth International Congress of Medicine.

## HYGIENE IN PRUSSIAN SCHOOLS.

THE Prussian Minister of Education has recently issued new instructions, in extension of those of July 14th, 1884, relating to the treatment of infectious diseases in schools. If they are observed the school premises will become one of the least likely sources of infection, for as a result of the war waged on microscopic germs cleanliness in the class-rooms and the lavatories and purity in the drinking water will be assured. The number of notifiable diseases has been increased by the inclusion of tuberculosis of the throat and lungs "so long as bacilli are present in the sputum." Teachers and pupils who have any doubt as to their health are earnestly requested to consult a medical man for the purpose of having their sputum examined. All pupils suffering from infectious disease are to be excluded from schools. Isolation is imposed on all who have been in contact with a patient and it extends to public places, playgrounds, and parks, in addition to school premises. When diphtheria breaks out in a school all who have been in contact with the patients are advised to submit themselves for treatment with serum. Daily disinfection of the throat and nose is recommended to persons who have been in contact with cases. In boarding-schools modifications of these rules are introduced, for it is felt that the closing of a boarding-school is an effective method of spreading a disease, whereas the closing of a day-school may be a salutary precaution. Finally, it is recommended that in natural history lessons pupils should be given instruction in the treatment and care of infectious diseases. In the modern reading-books for continuation classes instruction in the simpler matters of hygiene is becoming a prominent characteristic and the children often carry the information to the parents whose aid the school is advised to seek in enforcing the new instructions.

## THE ROYAL SOCIETY OF MEDICINE:

THE library of the society will reopen for the use of Fellows and members of sections on Tuesday, Oct. 1st. During the recess a considerable amount of work has been done, shelving for nearly 20,000 additional volumes has been provided, and the libraries of the societies which have combined have been brought together and conveniently arranged. A large portion of the premises hitherto let off to tenants has been taken over for the use of the society and many changes in the internal arrangement of the library have been made.

THE autumn meeting of the South-Eastern division of the Medico-Psychological Association will be held, by the courtesy of Mr. Reginald J. Stilwell, at Moorcroft, Hillingdon, Uxbridge, on Tuesday, Oct. 8th. Communications will be made by Dr. R. H. Cole on a Short Account of Moorcroft, Past and Present, and by Dr. W. H. B. Stoddart on Babinsky's Conception of Hysteria. The members will dine together after the meeting at the Café Monico, Piccadilly-circus, at 7 P.M.

A GENERAL meeting of the Association Internationale d'Urologie will be held on Tuesday, Oct. 8th, at 10 A.M., at the Hospital Necker, Rue de Sèvres, Paris, to decide upon the final constitution of the association. Delegates of the national committees alone have the right to take part in this. Any or all of the members of one committee can be present at the meeting and can take part in the deliberations, but each nation will only have one vote.

THE winter session of lectures and demonstrations at the Hospital for Sick Children, Great Ormond-street, London, will begin on Oct. 10th at 4 P.M., when Dr. A. E. Garrod will give a lecture on Diabetes in Children. On Oct. 17th at the same hour Mr. H. Stansfield Collier will lecture on Experiences of the Opsonic Method in Surgical Cases. Lectures will be given every Thursday at 4 P.M. and are free to all medical practitioners.

THE centenary of the Geological Society was held on Thursday, Sept. 26th, when an address was delivered by Dr. M. Grabham, as the representative of the Royal College of Physicians of London. To-day (Friday) the society visits St. Paul's Cathedral. We hope to publish Dr. Grabham's address in a future issue.

THE first Hunterian lecture of the Hunterian Society will be delivered on Wednesday, Oct. 9th, at 8.30 P.M., by Dr. F. M. Sandwith, Gresham professor of medicine. The subject is Dysentery. The meeting will be held in the London Institution, Finsbury-circus, and all members of the medical profession are invited.

THE annual presidential address will be given by the new President, Mr. R. Lake, F.R.C.S. Eng., before the West London Medico-Chirurgical Society on Oct. 4th at 8.30 P.M. at the West London Hospital, the subject being the Relationship of Disease of the Ear, Nose, and Larynx to General Medicine.

THE winter session of the West London Post-Graduate College will commence on Monday, Oct. 7th.

# INSTITUTIONS FOR THE REFORM OF INEBRIATES.[1]

Dr. R. W. Branthwaite's report for 1906 comprises three sections dealing respectively with certified inebriate reformatories, State inebriate reformatories, and retreats. The first section occupies rather more than three-fourths of the volume and is that which presents most interest both to the medical and to the lay reader, as the institutions with which it is concerned, apart altogether from their utility in the treatment of inebriety, are well worth study for the sake of the lessons to be learned from them regarding the conduct of experiments in the care and control of the socially unadaptable classes. The account which Dr. Branthwaite gives of them will be read, moreover, with special attention at the present moment in view of the rather unfavourable criticisms which have been recently directed against the reformatory treatment of police-court drunkards.

During the year under review the number of persons committed to reformatories under the Act was 404, 294 women and 110 men, as against 352 women and 91 men in 1905 and 380 women and 33 men in 1904. The marked decline in the number of females is shown in committals under both sections of the Act, but is relatively larger in the committals under Section I.—that is to say, of women convicted of some form of indictable crime and sentenced to reformatory detention in lieu of, or in addition to, ordinary imprisonment. Dr. Branthwaite points out that this section of the Act has so far been applied chiefly to persons convicted of cruelty to, or neglect of, children. The operation of the Act in cases of this sort appears to be extremely satisfactory. In other indictable offences comparatively little use has been made of the powers conferred on the judicial authority under this section. As to the reasons for the decrease in the number of women sent to inebriate reformatories last year, Dr. Branthwaite suggests that the chief cause is to be found in the rather complicated safeguards with which the legislature in its excessive care for the liberty of the subject has thought it necessary to hedge round the procedure for the committal of a habitual drunkard. This applies particularly to section 2 of the Act which concerns the ordinary drunken recidivist of the police courts: before a committal under this section can be ordered by a court of summary jurisdiction it is necessary to prove the fact of habitual drunkenness, to show that the accused person has been convicted three times within 12 months of the specified offence charged, and to obtain his or her consent to be dealt with summarily. The effect of these restrictions is naturally in many instances to prejudice the magistrate against the novel and tedious method which is so encumbered and to make him prefer the quick and familiar way of sending the culprit to prison, especially if, as is frequently the case, he has but a limited faith in the power of reformatories to reform. The inspector does not say what alterations in this procedure he advocates, but he appears to entertain the opinion that there exists a category of police-court drunkards who cannot be reached by the law as it now stands but who if they could be brought under its operation would probably be curable by detention in a reformatory. Up to the present there has been no opportunity of testing the value of this method in cases not patently hopeless.

Having described very fully in his last annual report the mental and physical characteristics of the so-called "habitual drunkards" Dr. Branthwaite devotes most of his space in the present volume to an account of the machinery which has gradually been brought into existence for dealing with this very motley group of cases. It consists at present of ten certified reformatories and two State reformatories. Of the certified reformatories three were established by local authorities, six by philanthropic bodies and private persons, and one by local authorities in conjunction with private persons. Five of the six institutions in the second group are controlled by a single governing body working under the guidance of the Rev. H. N. Burden, to whose zeal and ability the inspector pays a well-deserved meed of praise. The centralised administration of these five reformatories (which are known collectively as "The National Institutions for Inebriates") has proved of immense value as a means of organising an adequate system of classification; it has rendered it possible to arrange the several reformatories to meet the needs of different types of inmates, so that after a probationary period in a receiving house the inebriates sent from the courts can be distributed according to the character and prospects of each individual case. Completed by the State reformatories for violent and unmanageable inebriates this system is found to work ideally. In the reformatories founded by the local authorities, on the other hand, the attempt to deal with all sorts of cases in a single institution gives much less satisfactory results. Nor is this the only point in which the county council reformatories compare unfavourably with the national institutions; in the matter of economy the latter establishments show an enormous superiority. In the three reformatories built by the local authorities the original cost averages £526 per bed, while in those belonging to the national institutions it amounts only to £112 per bed, and in the latest built, that at East Harling, it is no more than £100 per bed. Even when full allowance is made for the fact that the local authorities have built with a view to the future expansion of their reformatories and have therefore provided an administrative installation largely in excess of their immediate needs, these figures assuredly suggest an unreasonably lavish expenditure, which is the less excusable because, as the report informs us, it was incurred despite the protests of the inspector, who failed to see the necessity of oak panelled board rooms and tesselated pavements in asylums for the detention of criminal inebriates. If the accommodation provided at £112 per bed in the national institutions is adequate for its purpose—and we have Dr. Branthwaite's guarantee that it is so—it is difficult to see what end is served by expending four or five times that sum and so furnishing a valuable argument to the critics of the reformatory system. In respect of the cost of maintenance, again, we learn that the centralised control of the reformatories belonging to the national institutions makes for economy; in these reformatories the expenditure per head is considerably lower, while the profit from the labour of the inmates is considerably higher than in the county reformatories. At Chesterfield, for instance, the most expensive of the reformatories of the former class, the total weekly maintenance expenditure amounts to 12*s.* 6½*d.* per head and the net proceeds from industries to 1*s.* 2½*d.* per head, while the corresponding figures for the Lancashire county reformatory at Langho are respectively 14*s.* 8½*d.* and 8½*d.* per head, and at Farmfield, the reformatory of the London County Council, the cost of maintenance is 18*s.* 6*d.* per head and the net value of the industries is *nil.* These points in Dr. Branthwaite's report are particularly deserving of attention because there has been an evident disposition of late to take the Inebriates Act as a model in other and more extensive schemes for dealing with the defective classes. It will be recalled, for instance, that the Departmental Committee on Vagrancy quoted the provisions of this Act as a precedent for its recommendations that the labour colonies which it advocated should be established and controlled by the county councils and not by the State, and, further, that the establishment of such colonies should not be obligatory on the councils. It is interesting, therefore, to observe that the difficulties in working the Inebriates Act have arisen largely from the very provisions which have thus been singled out for imitation. Local instead of centralised control has prevented proper classification and has increased expense in building and in up-keep, and the merely permissive character of the authority conferred on the county councils to found or to subsidise reformatories has encouraged the majority of the councils to leave the Act severely alone.

The report concerning the State inebriate reformatories mentions that up to March 31st, 1906, 234 inmates had been admitted to these institutions, 71 being males and 163 females. 16 of the total number were committed directly from assizes and quarter sessions under Section 1 of the Act and the remaining 218 were transferred from certified reformatories for refractory and unmanageable conduct. The function of these State institutions is seen from these figures to be mainly that of a rubbish heap for the rest of the reformatory system. In view of the very defective mental condition of the majority of the inmates it is satisfactory to note that the administration of the larger of the reformatories, that at Aylesbury, is entirely under medical control.

With regard to retreats, of which there are 22 in regular work, there was an increase in the number of patients admitted last year, 207 having been received "under the Act," and 267 as private patients by agreement with the licensees. It is mentioned that a revised code of rules has been prescribed by the Secretary of State which will permit of greater power being exercised by the central authority over the conditions under which patients are detained in licensed institutions.

---

[1] The Report of the Inspector under the Inebriates Acts, 1879 to 1900, for the year 1906.

In addition to the usual statistical tables the report is illustrated with an interesting series of plans of the certified reformatories of Ackworth, Lewes, and East Harling.

# NOTES UPON HEALTH RESORTS.

## FIUGGI: AN ITALIAN WATERING PLACE.

AMONG the watering places with which Italy abounds, and of which a description dealing only very summarily with each would form a large volume, there are but few which have achieved more than a local reputation. After mention of Montecatini, Sangemini, Salsomaggiore, San Pelegrino, and perhaps one or two others, the list of those familiarly known outside the country will be complete. This is not due to any lack of appreciation on the part of the Italians of the balneological resources of their peninsula, much less to any comparative inferiority in the waters themselves. On the contrary, the Italians have a strong belief, often amounting to a superstitious faith, in the efficacy of medicinal waters and during the summer are fond of combining with their usual villegiatura a visit to some of the numerous spas which are to be found in almost every part of the country. Many of these springs have a high medicinal value, their waters being constantly prescribed by Italian physicians with as much success as attends hydro-therapeutic treatment anywhere, and not a few of them if exploited with energy and enterprise would doubtless acquire the same wide reputation as is enjoyed, for example, by the best-known springs of France or Germany. Amongst those which will come prominently to the front when Italians awaken to this fact the waters of Fiuggi[1] near Anticola della Campagna[2] will take a high place on account of their efficacy in gouty complaints, and especially in the treatment of renal calculus and gravel. Their celebrity as a remedy in these affections dates at least as far back as the thirteenth century, when they were made personal use of by Pope Boniface VIII. for this purpose. This fame rests entirely on an empiric basis, for, curiously enough, a chemical analysis proves the water to be singularly free from the mineral constituents upon which the therapeutic activity of a water is supposed to depend, the solid ingredients contained in it amounting to only 0·058 gramme per litre, or about four and a half grains in a gallon. Nasini, who has lately made a careful physico-chemical examination of Fiuggi water, thinks that its medicinal powers reside partly in the element vanadium, of which it contains small quantities, but that they are also due in part to the radio-activity which it possesses to a degree unknown in any other drinking water and to the large amount of ozone dissolved in it. As the radio-activity disappears on boiling this property cannot come from radium itself, but must be derived from radium emanations in the contained gases. An examination of the surrounding rocks led to the interesting discovery that the tufa through which the spring issues is strongly radio-active, more so, indeed, than any other material hitherto found in Italy. Its radio-activity is, for instance, ten times as great as that of the "fango" or mud of Battaglia, and is due in part to uranium but also in part to radium.

The presence of ozone in the water, first observed by Cerasoli, is confirmed by Nasini, who, moreover, discovered that there is a large amount of the same gas in the vicinity of the spring, the quantity diminishing as the distance from the latter increases. He attributes its origin partly to the radium emanations in the water but principally to the action of the radio-active rocks by which the atmospheric oxygen is partially transformed into ozone. Nasini attaches much importance to the well-marked catalytic action which he has found Fiuggi water to possess and which he states to be unique in a water. He supposes this action to depend on the presence of vanadium and uranium which in the colloidal state are known to possess powerful oxidising properties even when present in quantities so minute as to be scarcely appreciable by ordinary chemical tests. But whatever may be the truth as regards the *modus operandi* of Fiuggi water, there can be no question as to its remarkable effects in cases of gout and especially of uric acid, gravel, and renal calculus. Professor Marchiafava's able assistant, Dr. Nazari, who has been for the past two seasons medical director of the "Stabilimento" of Fiuggi, reports a large number of cases which have come under his personal notice treated both at Fiuggi with water taken directly from the spring and in his Roman practice with the bottled water. Dr. Nazari believes that Fiuggi water may be regarded as an absolute specific for gout, and he even goes so far as to say that it may be used for diagnostic purposes in cases where the uric acid diathesis is suspected as the underlying cause of any illness. In typical articular gout and in renal calculus the beneficial results obtained both at the springs and at patients' homes are said to be quite surprising. In gout the salutary effects are not usually experienced until some time after a course of the waters, but in calculus the relief is often obtained within a few days after commencing the "cure," the gravel or stones being often voided without any pain.

The benefit frequently obtained from a residence at Fiuggi in other affections—such as diabetes, obesity, anæmia, hepatic troubles, skin complaints, neurasthenia, &c.—Dr. Nazari attributes more to the favourable conditions which prevail there in regard to temperature, radio-activity of the soil, the presence of ozone in the surrounding air, &c., than to the virtues of the waters themselves. The "season" at Fiuggi lasts from May to September and the "cure" for from 15 to 20 days or more. The water is drunk in the morning before breakfast, the patient taking from 10 to 20 glasses containing five ounces each at intervals of about a quarter of an hour. It is desirable at the same time to take gentle exercise in the form of walking or regulated gymnastics to help circulation and to promote the elimination of the water. Further doses should be drunk at meals and during the day. It is well to begin with a moderate amount, say five or six glasses, and gradually to increase it to an average of ten, or in some cases to 15 or even 20, glasses per day. Owing to its energetic diuretic action a large quantity of Fiuggi water may be taken without unpleasant effects if this rule be followed, but sometimes if drunk in excessive amount it gives rise to gastric pains and even to diarrhœa. On account of its purity and high degree of oxygenation it is a very pleasant water to drink and it seems to be equally efficacious whether taken as it issues cool and fresh from the spring or after it has been kept for some time in bottles. But it is doubtless best, whenever practicable, to drink the waters at their source where the climatic and other local conditions probably greatly favour their successful action.

When more comforts, and perhaps luxuries, than now exist have been provided for visitors Fiuggi will be admirably adapted for a summer resort, but the want of first-class hotel accommodation and of the other attractions which people are accustomed to find at a modern watering place must continue to limit its *clientèle* to a small class, and to repel the much larger number who prefer to combine with their pursuit of health a reasonable amount of pleasure and amusement.

# ASYLUM REPORTS.

*Royal Edinburgh Asylum (Annual Report for 1906).*—At the beginning of the year 1906 there were 884 patients on the books of this institution but this number was reduced to 837 on Dec. 31st owing to the opening of Bangour Village. During the year 385 cases were admitted (169 males and 216 females), the total being 47 less than the average of the last five years, the falling-off being in rate-paid cases which were 54 below the average. Dr. T. S. Clouston, the physician-superintendent, states that only 35 out of the 385 patients admitted were in good bodily health, and that as many as 25 died within one month of admission. He further draws attention to the fact, which so many superintendents of asylums have recently noted, that the proportion of old and frail patients is steadily increasing year by year.

---

[1] Pronounced Few-gee.

[2] Fiuggi is not far from Frosinone on the Rome-Naples line and is reached from Rome in about five hours, two by rail and three by carriage.

The number of general paralytics gave a percentage of 14·2 on the admissions, the number of women so afflicted being in the proportion of 20 to 35 men, which is a very high one and is greater than for any other similar institution in Scotland. Dr. Clouston refers to the work of Dr. W. Ford Robertson and Dr. G. D. McRae on general paralysis. He says that "they have made distinct progress towards a knowledge of its true nature, its definite diagnosis, and, they think, of its treatment with a view to cure. The patients they have had under treatment have, where the disease was in an early stage, shown a wonderful improvement, but the first thing to be done is to be able to diagnose it definitely in its early stages, so that treatment may be applied before the brain is seriously damaged." ...... "Had we a sure means of diagnosing the complaint in its early stages there seems now good scientific reasons for the conclusion that it might then, under specific treatment, be arrested. The great hope for this lies in the fact that the new treatment is on the lines of modern pathological experience, being virtually on the same principles as the mode of treatment now commonly adopted in regard to diphtheria and such diseases as are caused by specific microbes." Passing on to consider other causes of disease in those admitted Dr. Clouston states that "alcohol was, as usual, the commonest of all the outward causes of the disease in those admitted. As a general assigned cause it is put down in our returns at 29·5 per cent. of the male admissions and 16·2 per cent. of the women. Taking that definite form of mental disturbance which we call 'alcoholic insanity' characterised by tremors, or paralysis, or hallucinations, or a marked loss of memory ...... the percentage was 18 among the male admissions and 10·8 among the females." There were 292 patients discharged during the year; of these 88 (33 males and 55 females) were "recovered," 156 (108 males and 48 females) were "relieved," and only 48 (32 males and 16 females) "not improved." A large number of "relieved" and "not improved" patients were transferred to Bangour Village. There were 140 deaths (55 males and 85 females), which gives a percentage of 16·2 on the average number of patients resident. Dr. Clouston states that the large number of cases of general paralysis, together with other fatal nervous diseases, accounts for the present high death-rate. The slight epidemic of colitis which began in 1905 has now died out, the West House drainage system having been repaired at considerable cost. The physician-superintendent goes fully into the question of tuberculosis in the Royal Edinburgh Asylum. He states that the pathologist to the asylum includes in the returns of death sent to the Scottish Board of Lunacy every evidence of unhealed tubercle detected and he adds that in the last Scottish Blue-book there are published the results of this notification for the five years 1901–1905. "The calculations are made, not as formerly, on the total number of deaths, but on the average numbers resident in each institution. I was much exercised when I found in that return that we stood at the top of the list of frequency in regard to our rate-paid patients. We were put down at 3·5 per cent. on the average number of such patients resident. The average of the rates for all other Scottish asylums was 1·58." He then fully discusses the figures and shows how deductions from them may prove fallacious and concludes his remarks by saying that: "(1) there have been no deaths from consumption at Craig House during the 12 years that it has been opened, and several cases who came in with its early symptoms have recovered; (2) the consumption rate among our West House private patients was under the average; (3) the consumption rate among our rate-paid patients at the West House has been over the average. I believe the cause of this has been the overcrowding of our wards of recent years." Dr. Clouston then briefly reviews the history of the institution since it received its Royal Charter exactly a century ago. The account that he gives is an intensely interesting one, showing, as it clearly does, the progress of the institution since its foundation. From the information available in the treasurer's statement it would appear that during the last 90 years about £370,000 have been spent on land and buildings, reconstruction and improvements. The total debt now stands at about £85,900, showing that £284,100 have been already paid off. The income from private patients has gone up from £12,500 to £38,000 per annum. Dr. Clouston further states that "the institution was in the beginning, and has always been, a great public charity, with no private profit accruing to anyone except the official salaries. Of recent years the legacies and subscriptions that have come to it have been accumulated as a charity fund, now amounting to £9600, the interest of which is applied to the reduction of the board of poor patients and the placing of educated rate-paid patients into the private wards, so that their associations may be more congenial and helpful to their recovery. In the year 1886 Mrs. Elizabeth Bevan, a grand-daughter of its founder, left to the institution the sum of about £13,000 for the purpose of supplementing the boards of patients of the educated classes. This legacy was made on the suggestion of Sir Arthur Mitchell. Through it and the charity fund about 80 patients in reduced circumstances year by year have received a benefit which largely conduces to their recovery and their comfort." In discussing the general history of the institution for the year 1906 he states that "we shall enter on a somewhat new phase of our work after this year through the removal of our Edinburgh rate-paid patients to Bangour Village. Hitherto the West House always contained more rate-paid than private patients; now the private patients will form the majority there. We shall from this time be able to admit all patients sent to us at £32 10*s*. and £45 rates of board. We shall then supply a much-felt need for our city and neighbourhood." The report also includes an interesting statement by Dr. P. H. MacLaren, the chairman of the ordinary managers of the Royal Edinburgh Asylum, and contains the usual statistical tables.

## HEALTH MATTERS IN THE FEDERATED MALAY STATES.

SUBJOINED is a summary of the statements made in reference to health matters in the reports of the British Residents for the year 1906:—

### PERAK.

The acting State surgeon, Mr. S. C. G. Fox, writes of the unsatisfactory way in which births and deaths are registered. The matter is in hand. In respect of births, the returns are inaccurate. In respect of deaths, the cause is wrongly given. To judge of the death returns from fever—5669 deaths out of 12,952—it would be presumed that Perak is a fever-stricken country. Everyone knows it is not; the diagnosis is to blame. One bad feature is that of infantile mortality; 1200 babies died under one year of age.

### SELANGOR.

The large influx of Indian labour which took place in 1906 for work upon newly opened rubber estates has greatly enhanced the number of admissions to the district hospitals and has also been instrumental in raising the death-rate. A large number of the admissions were due to malarial fever and bowel complaints, for the most part contracted upon agricultural estates or by the members of working parties in outlying jungle country. Beri-beri has, on the whole, been less prevalent than usual throughout the State, the number of cases treated having been smaller in 1906 than in any period of 12 months during the last six years. Three cases of plague were treated, of which two proved fatal. In no instance was the source of infection discovered. Cholera occurred in seven instances at Port Swettenham, the victims being Indian coolies arriving on ships on which the disease had made its appearance. About 20 cases of small-pox occurred, approximately half of these being traced to infection on board the ship on which the patient had travelled from India. As a precautionary measure all coolies who do not show good vaccination marks on arrival are revaccinated before departure to the estates. Saigon buffalo lymph has been employed throughout the year and has been very satisfactory. If used within a fortnight of its arrival this lymph is quite the best the State surgeon has had any experience of in the East.

### NEGRI SEMBILAN.

The number of admissions to Government hospitals during 1906 shows a large increase over that of 1905, the figures being 8567 and 6517 respectively. The number of persons treated as in-patients was 8948, as compared with 6924 in the previous year. The increase is in Tamil coolies from recently opened estates. The case-mortality rose from 7·9 per cent. in 1905 to 10·6 in 1906. When deaths occurring within 48 hours from the time of admission are excluded the figures for case-mortality are: 1905, 5·8; and 1906, 8·5. As the State surgeon remarks, these facts afford matter for grave reflection. The admissions responsible for the results are of labourers employed in European-owned estates who should be under careful management and supervision, and the diseases from which they suffer are easily recognisable and even preventable. The class of patients sent in consists of cases too serious for treatment on the plantations; they are for the most part very ill and in many cases too ill to admit of successful treatment. The following is a list of the principal diseases treated in the Negri Sembilan Government hospitals, with the mortality resulting therefrom: Malarial fever, number treated, 2545; deaths, 94; death-rate per cent., 3·6. Beri-beri, number treated, 1010; deaths, 75 or 7·4 per cent. Diarrhœa, number treated, 383; deaths, 126, or 33 per cent. Dysentery, number treated, 1252; deaths, 342, or 28 per cent. Pulmonary diseases, number treated, 379; deaths, 113, or 30 per cent.

### PAHANG.

The general health was good throughout the year. The number of patients treated in the Government hospitals was 4266, as against 2935 in 1905. The number of out-patients was 12,684, as against 13,610 in 1905. The prevailing diseases were malaria, dysentery, beri-beri, lung complaints, venereal diseases, and diarrhœa in the order named. The numbers of cases treated were 1221, 506, 449, 216, 208, and 127 respectively. Dysentery accounted for 125 deaths, beri-beri 76, lung diseases 51, malaria 35, diarrhœa 32, and venereal diseases 3. All these diseases, except lung diseases, show an increase when compared with the figures for 1905. The State surgeon writes: "The mortality from dysentery and diarrhœa was chiefly among Tamils. The Chinese, who rarely drink unboiled water and are generally more cleanly in their habits, seldom suffer from these diseases to any great extent. For dysentery cases a decoction of fresh mangosteen rind, made while the fruit was in season, was employed at Bentong with some success. Malarial fever shows an increase among all nationalities and the employment by the State of a large number of coolies during the past year has swollen the returns. A disquieting feature is the steady increase in the amount of venereal disease; the numbers shown, moreover, represent but a small proportion of those affected, the majority using local, and generally inefficient, remedies or being treated as out-patients. Beri-beri cases show a steady increase in the numbers admitted, though the percentage of deaths is but 16·92, as compared with 16·70 last year and 16·89 in 1904. Parboiled rice, when procurable, was issued and had, I consider, a beneficial effect."

## MEDICINE AND THE LAW.

### *An Injured Knee as Stock-in-Trade.*

AN extraordinary series of frauds appears to have been perpetrated by a man who has been sentenced to four years' penal servitude at the Central Criminal Court under the name of Ben Biten. He at some time sustained a perfectly genuine injury to one of his knees, the effects of which remained (and presumably remain) plainly visible. His method consisted in falling over any rope or open cellar-flap or similar obstruction for which he could claim damages against someone apparently responsible on the ground of negligence. It is not stated that he often had to bring these claims into court, but according to the police evidence he had made them on at least 50 occasions and in many instances had received as compensation sums varying from £15 to £50. His manner of earning a livelihood seems to have been a family secret, for he was discovered through his coming forward to swear that another man who went by the name of Burton was dead. This person had been charged with offences similar to those of Biten and, as a matter of fact, had failed to surrender to his bail and had escaped to America. Biten was Burton's brother and when he appeared in court to say that the latter was dead he was recognised by the medical officer of the Ocean Accident and Guarantee Corporation, which happened to be interested for the third time in defending a claim brought by him. He will now for some time be prevented from victimising his fellow-men, but his manner of doing so was attractively simple and medical men concerned in inquiring into claims such as he was in the habit of putting forward will no doubt make a note of his *modus operandi*.

### *Medical Evidence in India.*

The position of a medical man in India when called as a witness on behalf of the prosecution in a criminal court apparently differs considerably from that of members of his profession in England or is not yet defined sufficiently clearly for all magistrates to be aware of it. In a recent case heard in the special magistrates' court at the Kolar Goldfields the defendant was employed in the mines and was charged with having caused an accident by his negligence. A medical man, one of the surgeons at the Goldfields, was called as a witness with a view to his giving evidence from the nature of the injuries of a coolie as to the probable manner in which they had been received. This he declined to do unless he were first paid the fee to which an expert witness would be entitled. The magistrate took the view that no such fee was payable in such circumstances on the ground that the witness was called in the interests of justice and was bound to give evidence accordingly, and on the witness still refusing to express his opinion he fined him 50 rupees, with the alternative of a week's imprisonment for contempt of court. The fine was paid but it is stated that there will be an appeal to the Madras High Court. It will be interesting to observe the result, for if the magistrate is right the law should be altered in favour of those whose profession renders them liable to be summoned as witnesses in many cases which otherwise would not concern them. If, on the other hand, the magistrate was wrong it seems strange that he should have been ignorant upon a point which might be expected to arise very frequently in courts of criminal jurisdiction. The paying for medical evidence in civil cases is a matter of arrangement between the medical witness and the party calling him.

### *Medico-Legal Experts in Paris.*

In view of the proposals occasionally made that medical assessors and experts should be attached to coroners' and other courts recent events in Paris in a similar connexion may be of interest. A few years ago a special course of practical and theoretical instruction was organised in Paris in order to prepare medical men to serve as medico-legal experts. About a score of candidates have now graduated and received the special diploma. A recent notice from the president of the civil courts bids the magistrates (*juges de paix*) at Paris to select their experts from the qualified list. In an editorial article in *Le Progrès Médical* a protest is made against this practice as being at once detrimental to the interests of justice and to the 450 medical men who have previously been called to give the expert evidence in these courts. It is affirmed that specialist expert testimony is essential—an ophthalmologist for diseases of the eye, a neurologist in nervous affections, and so on; no one human brain can have precise and specialist knowledge in all branches of medicine. The article deplores "the cultivation by the medical faculty of a parasitic flora of certificates and diplomas, sapping the vitality of the ancient trunk of the old-fashioned medical course still offered by the medical schools."

### *Bodily Illness as a Defence in Actions for Breach of Promise of Marriage.*

In a recently reported case (Grover *v.* Zook) the Supreme Court of Washington decided that a breach of promise of marriage on account of tuberculous disease of the *fiancée* was justifiable, even if the matrimonial engagement was entered into with a knowledge of her condition. This American decision carries the legal attitude towards these contracts further than in any previously reported case, and while inflicting hardship upon the individual is doubtless directed towards protecting the public health. In 1886 in the Supreme Court of Pennsylvania a somewhat similar case was decided (Gruig *v.* Lerch). It was allowed to be a valid defence to an action for breach of promise of marriage that the plaintiff was incapable of performing the physical functions of marriage, which disability she had promised to have removed by a surgical operation before marriage, but had failed so to do. The English Court would not accept such defences where a simple contract had been entered into: Mr. Justice Matthew, on one occasion is reported to have said, "Love is not a necessary element in a breach of promise case," and Mr. Justice Vaughan Williams stated that bodily illness, while possibly being a plea against specific performance of the promise, was no defence against damages—for the *fiancée* may, as did Lady Teazle, "like to be a widow." The leading decision in our own records on disease in the defendant being set up as a defence to an action on a contract to marry is the case of Hall *v.* Wright (1859), where failure of health owing to pulmonary tuberculosis was pleaded in vain as an excuse for the failure of the man to keep his promise to wed. The principles which obtain in such an alleged impossibility or undesirability of fulfilling the matrimonial contract may be analysed from the point of view of the defendant. Since one of the primary objects of matrimony is, in the words of the Book of Common Prayer, "for the procreation of children," such an objective may become impossible or its consummation very dangerous to either party should the defendant's health have been materially affected by a disease. On the other hand, the disease may make matrimony impossible or dangerous to one party only to the contract In the latter case several alternatives present themselves. The presence of the disease may be known to the defendant at the time when the contract to marry was entered into, it being reasonably thought that the malady was curable; the recent decision cited above shows that logic compels the recognition of the validity of such a defence by courts which would protect the defendant whose disease was only discovered subsequently to the engagement. Should there be no reasonable ground to think that the position will be altered before the marriage ceremony is performed, as, for instance, where a married man proposes to a spinster, the defence of obvious impossibility is futile. There remain the cases where the disease appears subsequently to the time when the contract was entered into; here the defendant may be disabled owing to his own fault, as where he has contracted syphilis or gonorrhœa, or he may have been infected innocently, as with pulmonary tuberculosis. In the former case no defence could be allowed on that account. In the latter case the English courts likewise decline to allow the supervening pathological circumstance to excuse the fulfilment of the promise, for it is held that the performance is not necessarily impossible, and even if it was impossible the plaintiff could still enjoy the social position which would result from the matrimonial alliance. The cautious wooer, if not going so far as to mark his letters "without prejudice," would insert in his proposal a proviso as to the possibility of a change of bodily health in either party, or perhaps would suggest that a satisfactory medical certificate should be produced by each party before the wedding day was named.

### *The Sale of Poisons.*

At the Westminster police court recently Mr. R. A. Robinson, trading as Malden and Co., was summoned under the Pharmacy Act, 1868, for selling strychnine without observing the precautions required by the statute. The poison was supplied by the defendant's firm in the form of tabloids, as in the case described in The Lancet of Sept. 7th, p. 729, and the prosecution was at the instance of the defendants upon that occasion, who apparently desired to retaliate thus upon the Pharmaceutical Society. Mr. Robinson was recently its President, although he did not hold that office at the time of the prosecution of Boots' Cash Chemists, Limited. Argument took place as to whether the latter as a corporate body could act as common informers, but the magistrate decided to hear the case. and after it had been opened the defendant, who appeared by counsel, entered a plea of guilty and was fined £3, with £2 2*s.* costs upon each of three summonses. These two prosecutions should have a good result if they check the unrestricted sale of dangerous drugs to persons who, though not desiring to make any illegal use of them, would act more wisely in not trifling with them. They should wait to obtain them until their use is ordered by a medical practitioner.

---

St. John's Hospital for Diseases of the Skin.—The Chesterfield lectures of this hospital will be resumed at 49, Leicester-square, on Thursday evening, Oct. 3rd, at 6 p.m., when the Chesterfield lecturer, Dr. Morgan Dockrell, will give the opening lecture on "The Present Position of Dermatology." The lectures will be given every Thursday up to March 19th, with the exception of a break at Christmas. After each lecture demonstrations will be given on special cases, followed by clinical instruction up to 8 p.m. on patients presenting themselves in the out-patient department. The lectures are free to medical men on presentation of their cards and to medical students who wish to attend regularly.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Sept. 26th, 1829.

### STONE BULLET SHOT INTO THE BLADDER.

*By* William Lewis, *Esq. Surgeon.*

John Roden, a boy about 11 years of age, (of the Deanery-row,) of a spare habit and pale complexion, received a shot wound on the 5th of November last, while passing a door from behind which a pistol was discharged, loaded with a stone bullet; the shot, after penetrating the door, entered the upper part of the left thigh, and afterwards passed into the bladder. On my first visit, I found a contused wound of a circular shape. I extracted several small pieces of wadding, but was not able, by the most minute examination, to detect the presence of any other foreign body. Syncope supervened, although the hæmorrhage was slight, and no urine passed through the wound at that time. On the following day, there was great external inflammation about the region of the bladder, with excruciating pain whenever an attempt was made to pass the urine; great tenderness upon pressure of the abdomen; pulse quick, hard, and full; tongue dry; great thirst, and many other symptoms of excessive inflammatory action. A free abstraction of blood, both general and local, with oleaginous purgatives, enemas, warm fomentations, and a strict adherence to the antiphlogistic regimen, soon subdued these violent symptoms, and, on the third day, the urine passed freely through the orifice in the thigh, and continued so to do for many weeks; during this time, bloody urine was occasionally passed by the urethra, and frequently a considerable quantity of mucus; there was also a great sympathetic swelling of the glands in the groin. The wound at length became partially healed, and the symptoms of stone in the bladder were very much aggravated. I was particularly anxious at this time to introduce a sound; but neither the parents nor the patient would consent, and at length the wound entirely healed, and the swelling in the groin gradually disappeared. I then succeeded in introducing the sound, and immediately detected some foreign body in the bladder. Soon afterwards I determined upon performing the lateral operation of lithotomy, which I did on the 23rd of June, in the usual manner, with the gorget, and extracted the marble without difficulty, considerably increased in size, from a deposition of calculous matter adhering firmly to it. Not a single unfavourable symptom resulted from the operation, and in a fortnight the boy was enabled to get about. He now enjoys perfect health.

Wolverhampton,
September 15th, 1829.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8075 births and 4149 deaths were registered during the week ending Sept. 21st. The annual rate of mortality, which had been equal to 12·3 per 1000 in each of the two preceding weeks, increased to 13·5 per 1000 in the week under notice. During the first 12 weeks of the current quarter the death-rate has averaged 12·2 per 1000, the rate in London during the same period being 12·0 per 1000. The lowest death-rates in the 76 towns last week were 5·9 in Tottenham, 6·3 in Willesden, 6·6 in Halifax, and 7·0 in Hornsey; the highest rates were 19·1 in Sheffield, 19·4 in Liverpool, 20·6 in Burnley, 22·3 in Warrington, and 23·3 in Bootle. The 4149 deaths in the 76 towns last week were 356 in excess of the number in the preceding week, and included 630 which were referred to the principal epidemic diseases, against numbers increasing from 362 to 485 in the seven preceding weeks; of these 630 deaths 397 resulted from diarrhœa, 90 from whooping-cough, 49 from diphtheria, 43 from measles, 31 from scarlet fever, and 20 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered last week in Reading, Bournemouth, or West Bromwich, and only one in each of 11 other towns; the annual death-rates therefrom, however, ranged upwards to 3·7 in Gateshead, 3·8 in Aston Manor, 3·9 in Stockton-on-Tees, 4·4 in West Ham, 6·2 in Liverpool, 6·3 in Sheffield, and 7·4 in Warrington. The deaths from diarrhœa, which had risen from 39 to 278 in the ten preceding weeks, further increased last week to 397, the highest death-rates from this cause being 3·0 in West Ham and in Stockton-on-Tees, 3·1 in Aston Manor, 3·3 in Devonport, 3·9 in Bootle, 5·2 in Warrington, and 5·4 in Sheffield. The fatal cases of whooping-cough, which had been 76, 80 and 95 in the three preceding weeks, declined to 90 in the week under notice, and caused death-rates ranging upwards to 1·2 in Wigan, 1·4 in Ipswich, in King's Norton, in West Hartlepool, and in Merthyr Tydfil, 1·7 in St. Helens, and 2·0 in Great Yarmouth. The 49 deaths from diphtheria exceeded the number in any previous week of this quarter, and included 15 in London, four in Birmingham, and two in each of eight other towns. The fatal cases of measles, which had declined from 102 to 35 in the five preceding weeks, rose again to 43 in the week under notice; the highest death-rates from this disease were 1·1 in Newcastle-on-Tyne and 1·4 in Cardiff. The 31 deaths from scarlet fever slightly exceeded the number in the previous week and included 13 in London and two each in Liverpool, Birmingham, and Sheffield. The fatal cases of "fever," which had been 18 and 12 in the two preceding weeks, rose again to 20 last week; the greatest proportional mortality from this cause was recorded in Bootle, where the rate was 1·6 per 1000. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital at the end of last week was 4021, against numbers which had increased from 2658 to 3872 in the 19 preceding weeks; the new cases admitted, which had numbered 557, 587, and 574 in the three preceding weeks, rose to 696 in the week under notice, and exceeded the number recorded in any previous week. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 116 and 122 in the two preceding weeks, further rose last week to 130, but were 18 below the corrected average number for the corresponding period of the five years 1902-06. The causes of 36, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 50 other of the 76 towns; there were six uncertified deaths in Liverpool, five in Sheffield, four in Birmingham, three in South Shields, two in Preston, and two in Bootle.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·6 and 15·3 per 1000 in the two preceding weeks, declined again to 13·3 per 1000 in the week ending Sept. 21st, and was 0·2 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 7·5 in Leith and 10·5 in Perth to 14·2 in Dundee and 15·2 in Glasgow. The 462 deaths in these towns last week were 70 fewer than the number in the previous week, and included 51 which were referred to the principal epidemic diseases, against 58 and 69 in the two preceding weeks. These 51 deaths were equal to an annual rate of 1·5 per 1000, which was 0·5 per 1000 below the mean rate last week from the principal epidemic diseases in the 76 large English towns; they included 27 which were referred to diarrhœa, ten to whooping-cough, six to "fever," four to measles, three to diphtheria, and one to scarlet fever. The fatal cases of diarrhœa, which had been 22 and 20 in the two preceding weeks, rose again to 27 in the week under notice, and included 21 in Glasgow, two in Dundee, and two in Paisley. The deaths from whooping-cough, which had been 22 and 18 in the two previous weeks, further declined last week to 10, of which four occurred in Dundee, three in Glasgow, and three in Edinburgh. The fatal cases of "fever," which had been 11 and 22 in the two preceding weeks, fell again to six last week, and included three in Glasgow and one each in Dundee, Aberdeen, and Paisley; all these six deaths were stated to be from cerebro-spinal meningitis. Of the four deaths from measles, three occurred in Glasgow; and two of the three deaths from diphtheria were recorded in Dundee. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 57 and 61 in the two preceding weeks, further rose to 67 in the week under notice, and slightly exceeded the number in the corresponding period of last year. The causes of 14, or 3 per cent., of the deaths in these eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

### HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 20·7 and 17·6 per 1000 in the two previous weeks, rose again to 18·6 per 1000 in the week ending Sept. 21st. During the first 12 weeks of the current quarter the death-rate has averaged 18·7 per 1000, the rate during the same period being 12·0 in London and 12·5 in Edinburgh. The 139 deaths of Dublin residents registered during the week under notice were seven in excess of the number in the previous week, and included 13 which were referred to the principal epidemic diseases, against 12 and 15 in the two preceding weeks; of these, ten resulted from diarrhœa, two from diphtheria, and one from whooping-cough, but not any from small-pox, measles, scarlet fever, or "fever." These 13 deaths were equal to an annual rate of 1·7 per 1000, the death-rate during the same period from the principal epidemic diseases being 1·7 in London and 1·1 in Edinburgh. The deaths from diarrhœa, which had been eight, five, and nine in the three preceding weeks, rose to ten in the week under notice, while the two fatal cases of diphtheria corresponded with the number in the previous week. The 139 deaths from all causes in Dublin last week included 35 of children under one year of age and 35 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the previous week, while those of elderly persons showed a slight decline. Four inquest cases and four deaths from violence were registered during the week; and 57, or 41 per cent., of the deaths occurred in public institutions. The causes of seven, or 5 per cent., of the deaths in Dublin last week were not certified; in London only one uncertified death was registered, while in Edinburgh the proportion was equal to 8·8 per cent.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeons: P. H. M. Star to the *President*, additional, for three months' course at West London Hospital; T. W. Philip to the *Russell*; and W. H. Pope to the *Topaze*. Surgeons: A. R. Thomas to Plymouth Hospital, and A. B. Marsh to the *Ariadne*.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant Winfrid K. Beaman, from the seconded list, to be Lieutenant (dated Sept. 1st, 1907).

Lieutenant-Colonel M. Dundon has been appointed to the medical charge of the troops at Winchester. Lieutenant-Colonel J. M. Jones is placed under orders for India. Lieutenant-Colonel J. R. Dodd has been transferred from Dublin to Belfast as administrative medical officer. Lieutenant-Colonel H. N. Thompson has joined at Aldershot for duty at the Cambridge Hospital. Major G. T. Rawnsley has joined the Aldershot Command and been appointed to the medical charge of troops at Longmoor, vice Lieutenant-Colonel R. J. Geddes, D.S.O., transferred to the Military Hospital, Woking.

### ARMY MEDICAL RESERVE.

Walter George Hughes Cable to be Lieutenant on probation (dated Sept. 2nd, 1907).

### VOLUNTEER CORPS.

*Royal Garrison Artillery* (*Volunteers*): 1st Suffolk and Harwich: Surgeon-Captain A. Y. Pringle resigns his commission (dated Sept. 1st, 1907). *Rifle:* 1st Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant E. R. Hunt to be Surgeon-Captain (dated August 3rd, 1907). 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal

Highlanders): Surgeon-Major D. H. Kyle resigns his commission (dated August 5th, 1907).

DEATHS IN THE SERVICES.

Fleet-Surgeon James Thomas William Stenteford Kellard, R.N. (retired), suddenly, at Waterlooville, Hampshire, on Sept. 16th, in his 55th year. He entered the Royal Navy as assistant surgeon in 1876, and became fleet-surgeon in 1897. In November of the same year he retired, and had since then resided at Southsea.

# Correspondence.

**"Audi alteram partem."**

## THE MEDICAL REGISTER.

*To the Editors of* THE LANCET.

SIRS,—May I ask you in the interests of the profession to draw attention once more to the importance of notifying to this office changes of address for insertion in the Medical Register; omission to do this sometimes leads to a temporary removal of the name, with its consequent inconvenience. The Medical Register is the official publication and should not be confused with any of the medical directories which issue circulars annually. I might also add that if the signatures are written clearly and the full names, or at least the full initials, are given, much trouble will be saved.

Yours faithfully,
H. E. ALLEN,
299, Oxford-street, London, W., Sept. 23rd, 1907. Registrar.

## SOME PHYSIOLOGICAL EFFECTS OF HIGH-FREQUENCY CURRENTS IN DISEASE.

*To the Editors of* THE LANCET.

SIRS,—I am sorry that Dr. J. C. Bowie in his letter in THE LANCET of Sept. 7th, p. 732, should have thought it necessary to attribute to me a desire for approbation. I had believed when writing my last letter that it was truth more than triumph I was seeking. I fear that Dr. Bowie in his reply leaves the matters in dispute between us very much where they were. He continues to state what ought to be, not what he has found to be, the case. I desire criticism of what I have stated to be facts. I had believed that my paper teemed with these, yet no attempt has been made to controvert even one of them by actual experiment.

Dr. Bowie makes much of the question of wattage in the output. I made no objection to this, only saying that wattage, as he interprets it, was not required *as well as* voltage and ampèrage. His wattage theory, however, is absolutely irrelevant to a discussion on my contribution to your columns. I have stated that the dose given has been so and so—400 milliampères or 500 as the case may be. This milliampere meter reading is a *thermic fact*, as I have explained, being measured by a hot wire galvanometer. Dr. Bowie seems to forget, however, that in alternating current phenomena wattage is not got by simply multiplying voltage by ampèrage, as in continuous current; and this is the answer to his argument based on wattage of input and wattage of output. As I have said, we cannot speak of wattage in high-frequency currents in the manner in which he insists on doing. As I have also before stated, it is a current in the meter but a capacity in the body. I have in the records of my experiments given the measure in the meter, refraining from venturing to predict what capacity this may represent in the body. His claim regarding wattage will be perfectly satisfied, however, I understand, if we suppose that what corresponds in the meter to a heat equivalent of 500 milliampères *may* represent a capacity of 16 milliampères in the body. Not only am I ready to grant that this may be so, but I am willing to go even further than this for the sake of ease of calculation and for argument's sake, though, as the lawyers say, without prejudice, and make it five milliampères in the body. This, however, it must be remembered, is *an inference only*, though an interesting one I admit, whilst the figures given in my charts still remain thermic facts which can be tested and measured by anyone. Thus the wattage as an energy affecting the body, according to Dr. Bowie's method of calculating it in connexion with high-frequency currents, becomes 400—namely, 80,000 volts multiplied by 0·005 ampère, though Dr. Bowie has all along been willing to give me 1250 watts. The facts recorded in my charts, however, remain unchanged and my thesis remains practically unchallenged. For 500 milliampères in the meter read five milliampères as the ampèrage capacity in the body; for, say, 400 milliampères in the meter as the quantity running off to zero from the axilla read four milliampères as the actual capacity in ampèrage at the axilla; for 250 milliampères as passing to zero from the foot read 2·5 milliampères as the actual capacity in ampèrage there. What I wish and maintain that I have established remains unaffected—namely, that the fall in the current to zero and the fall of potential from the point of entrance of the current to any part of the body selected for measurement proceed practically *pari passu*. I have endeavoured to explain why it is not absolutely so, as I thought it should be. That more than a small percentage of the current passing through the meter is the ampèrage capacity in the body I feel sure; but this also being a mere inference we need not occupy our time discussing it, since it has no bearing on the question of the validity of my statements regarding certain physical facts observed by me. I am prepared neither to accept nor to reject this hypothesis. I have in my original article purposely made no assertion as to the relation of the current in the meter to the capacity in the body, limiting myself mainly to statements as to what I actually found as facts. Some recent experiments made by me warrant me, however, in believing that the heat equivalent in milliampères of the effective electric energy surging in the body during auto-condensation, when the meter registers 500 milliampères, is to be measured not by units but by hundreds. If Dr. Bowie tries the experiments I have described and does not get the same results then myself and others must repeat the experiments that thus we may get at the truth. If authorities are anathema in Dr. Bowie's eyes he must give us more evidence in support of his own claims as a new authority than his mere *ipse dixit*. Far from invoking authority myself, however, all my investigations were meant for tests of past authorities, as I make plain at the beginning of my paper. Regarding many points Dr. Bowie brings forward no evidence of the correctness of his beliefs. He simply contents himself with repeating them.

If, then, his wattage theory can be made to mean nothing and his potential theory remains unproved, what is left in dispute between us? Only some, I have no doubt interesting, experiments with a vacuum tube for the production of ultra-violet rays. I should very much like to see this apparatus at some future date, but it has nothing to do with my contribution on the physiological effects of high-frequency currents. Since he tells us that he passes through this tube a current of 250 milliampères at a pressure of 30,000 volts, however, it would be interesting to know what the wattage of the input is in order to get an output wattage of 7500, as he calculates wattage in alternating currents.

Dr. Bowie has not explained how he is to get five ampères through the body out of 80 volts. My objection is not to the 400 watts but to the five ampères at a voltage of 80. The question as to the relative physiological effects of a high voltage and a small current as against a comparatively low voltage and a relatively high current would be an interesting investigation, but it has absolutely nothing to do with the original subject of my communication and is, therefore, in no sense a criticism of it. What Dr. Bowie says regarding my failure to attach importance to time, quantity, voltage, &c., is apt to mislead your readers. If my charts are referred to it will be seen that time and quantity are practically always given and my results are based on these data. Where the quantity and time have been omitted it is an unintentional omission. I have full details of all the cases in my notes and can let Dr. Bowie or anyone interested have them.

When Dr. Bowie has had time to test my experiments I shall be glad to hear from him either privately or through the medium of your columns. My facts—not myself—are "on approbation," that is, they are waiting to be probed. What is wanted is real practical criticism. Unless Dr. Bowie is prepared to give this practical criticism a continuance of this correspondence is, in my opinion, useless, wasteful alike of my time and of valuable space in your columns, seeing that it has now resolved itself into a discussion which can have little interest for your readers.

I am, Sirs, yours faithfully,
SAMUEL SLOAN.
Glasgow, Sept. 9th, 1907.

## A CASE OF SELF-INDUCED (?) ABORTION.

*To the Editors of* THE LANCET.

SIRS,—In Dr. A. B. M. Thomson's short paper on the above subject in your issue of Sept. 7th he says, "The question which called for decision was whether this was in reality a case of self-induced abortion. Is it possible for a woman to introduce into her uterus, without causing injury to the vaginal walls or to the os, a straight rigid rod four inches in length?" It may interest him and some of your other readers to hear of a remarkable case in point. Some years ago, I think it was in the "seventies," I had a patient under my care who confessed to me, and I had no reason to doubt her word, that she had brought on abortion on herself thirty-five (35) times! The instrument she used was a bone knitting-needle. She used to squat down and, finding the os, pass the knitting-needle into the uterus. She was so regular in her periods that she knew at once when she had conceived and immediately proceeded to operate; and though on several occasions she had rather severe hæmorrhage, yet, as far as I remember, she was never in any serious danger; a rather remarkable result in those pre-aseptic days.—I am, Sirs, yours faithfully,

HEYWOOD SMITH.
Welbeck-street, W., Sept. 19th, 1907.

## RESULTS IN APPENDICITIS TREATED BY THE IMMEDIATE AND COMPLETE OPERATION.

*To the Editors of* THE LANCET.

SIRS,—The controversy whether it is better to operate within the first few hours of the onset of appendicitis or whether it is better to wait until there is some definite call for operation has gone on for many years.

Mr. W. G. Spencer is to be congratulated upon having a consecutive series of 100 cases of appendicitis (published in THE LANCET of Sept. 14th, p. 770) with but seven deaths, or four if we exclude the three cases who had other lesions as well. But if we accept the title of his paper and his concluding paragraph—viz., "that it has been possible to diagnose and to operate on 100 cases of appendicitis, with a loss, when the appendicitis was the sole disease, of only four, a result which removes the various objections that have been raised to the method"—it will be seen that those of us who have an open mind upon this question can derive but little instruction upon this important point. If it is true that the immediate and complete operation is responsible for so low a death-rate as 4 (or 7) per 100 cases, then every right-thinking surgeon should adopt the immediate treatment. But let us look more closely at these 100 cases.

*Class 1.*—37 cases; no deaths. Admirable. But these are defined as "cases in the interval between the attacks, or early acute and subacute cases." How many of these were "interval" cases is not stated, but it seriously reduces the 100 cases submitted to "immediate" treatment, unless "immediate" only means "as soon as they came under Mr. Spencer's care." No good surgeon in these days expects otherwise than to obtain equally satisfactory figures from this type of case whether they are done immediately or in a week or two. Then "subacute" is a term open to misunderstanding. Does it mean that they were recognised as very mild cases, or were they recovering from acute attacks, and if the latter, how "immediate" was their treatment? Mr. Spencer says, "*some* of these cases would have recovered without operation, *others* would have become rapidly worse had the operation been delayed"; but as he dispensed with drainage in all, he evidently did not think so badly of them.

*Class 2.*—These are labelled gangrenous and perforating appendicitis and *subacute appendicitis.* 31 cases; four deaths. All will agree that the sooner gangrenous and perforating cases are operated upon the better, but why put subacute cases into this class? How many of these were subacute, and, if so, how early were they operated upon?

*Class 3.*—Cases of suppurating appendicitis treated by removal of the appendix and drainage. Again comes the question as to how elastic a term is the "immediate" in this paper. I suppose a good many of these cases had an abscess for several days; at any rate, I frequently get cases at the Children's Hospital who are brought up from seven to ten days after the onset of the illness with large localised abscesses. These are opened at once, but it is hardly looked upon in the sense of the "immediate" operation. The removal of the appendix at this stage must certainly add to the danger of the operation, as it risks infection of the peritoneal cavity when the patient's tissues have, after much trouble, walled it off into a position of safety. I know authorities differ on this point but I have never regretted not removing the appendix in opening a localised abscess.

*Class 4.*—As in Class 3, there is no guide to the time of the various operations, still, as they were suppurating cases, they are hardly likely to have been very early ones.

I am not cavilling at the early operation done within a few hours of the onset of appendicitis, but I do think that this series of 100 cases with four (or seven) deaths is gravely fallacious as a proof of the benefits of early operative treatment when interval cases are included, and when we get no guide in the majority of the cases as to how soon after the onset the operation was performed. Instead of the death-rate being reduced to 4 per 100 as a result of the immediate operation, it must be—well, perhaps Mr. Spencer will give us a more accurately analysed list.

I am, Sirs, yours faithfully,
Upper Wimpole-street, W., Sept. 14th, 1907. JOSEPH CUNNING.

## ERYSIPELAS (?) IN A YOUNG CHILD.

*To the Editors of* THE LANCET.

SIRS,—The following note may be of interest, as I can find but few recorded cases of a similar nature.

The patient was a little girl, aged five years, who was brought to my house about a week ago with a sharply-defined bright-red patch on the right cheek. I told her mother that had it not been for the child's age, when such an affection was very unusual, I should certainly have diagnosed the case as commencing erysipelas. The child's skin was hot and dry, the temperature was 101·4° F., and there was distinct albuminuria. I prescribed a simple febrifuge and asked that I might be informed if there should be any further developments. Two days later I was asked to see the patient at her own home, where I found her presenting all the appearances of a typical case of facial erysipelas. The face was swollen to the extent of being unrecognisable; there was marked œdema of the eyelids; and there was a well-marked line of demarcation between the erysipelatous and the healthy skin.

Since then the case has run an uneventful course, the redness becoming daily less marked and the temperature gradually falling from 102·8° to within a point or two of normal. Treatment has been on the usual lines. There was no history of any injury, there was no affection of the ear or throat, and the child's teeth were in good order. Her mother told me that when I first saw her she had just returned from a country holiday but she could not think of any possible exposure to infection. The drains of the house in which they stayed were, so far as she could tell, satisfactory.

I shall be glad if any of your readers who have met with similar cases at such an early age will favour me with a few facts concerning them, and with suggestions as to their probable cause.—I am, Sirs, yours faithfully,

T. R. HENDERSON, M.B., C.M. Edin.
Bedford Hill, Balham, S.W., Sept. 15th, 1907.

## ARTHROPATHY IN RÖTHELN.

*To the Editors of* THE LANCET.

SIRS,—While the nature of rheumatoid arthritis is under discussion I should like to place on record the occurrence of an arthropathy during the course of rötheln. The patient was a young man, aged 24 years, who, after a few days of sore-throat, stiff neck, malaise, and moderate fever, developed a rash having the distribution and appearance of German measles and accompanied by an enlargement of superficial glands, notably those of the neck. Before the exanthem had faded the patient began to complain of stiffness and tenderness in the knees and ankles, and soon all the interphalangeal joints of the fingers presented the spindle-like swelling commonly seen in rheumatoid arthritis. There was no exacerbation of temperature and neither cardiac nor other complication, and a fortnight from the appearance of the rash all the symptoms were subsiding and in the six months which have elapsed only an occasional transient stiffness in the fingers reminds the patient of the attack.

I am, Sirs, yours faithfully,
DAVID A. ALEXANDER, M.B. Vict.
Clifton, Bristol, Sept. 19th, 1907.

## METROPOLITAN STREET AMBULANCES.

*To the Editors of* THE LANCET.

SIRS,—After deliberation for over three years from the date (1904) of the influential deputation from the medical profession and others interested in promoting an efficient ambulance service for the streets and public places of London which waited upon its police committee, the City of London has succeeded in solving the difficulties connected with its own area and has established a service which, after over four months' trial, is universally pronounced to be a success. It is to be hoped that the metropolitan area will not be long in following suit in adequately dealing with the greatly increasing dangers of its streets. In addition to meeting its own requirements the City of London may be regarded as having provided an excellent object lesson for street ambulance administration.

Permit me now that this subject is still pressing to point to some circumstances which appear to have narrowed down almost to a multiplication sum—the requirements of an ambulance service for the streets as applicable to much larger areas of population than the City. Most prominent and essential amongst these conditions is the combination which the City of London has been able to organise—viz., police administration, first aid, telephonic communication, and hospitals, in addition to the most recent type of motor-ambulance. The public has yet to learn and appreciate more thoroughly than it does that the vehicle or conveyance used is only a single factor amongst several which make up an efficient ambulance service for street accident purposes. Without such a "combine," irrespective of the mere number of ambulances available, experience shows that it is impossible to construct an emergency service where efficiency and cost have to be considered.

In the next place the City service has demonstrated (1) that a single motor-ambulance can cover for street ambulance purposes a much larger area than was previously supposed or than any single hospital in London, however large, requires, and (2) that it is capable of doing its work with a very small staff more rapidly and efficiently during the busiest part of the day than any number of cabs, hand-wheeled litters, and less suitable nondescript vehicles. This fact alone has an important bearing on cost when the number of motor-ambulances required for working a much larger district such as the accident area of the metropolis has to be computed. (3) In the City service the weight of expense in maintaining ambulances for public use in cases of accident requiring them does not fall upon the hospitals. Where a hospital, as, for instance, St. Bartholomew's, in the City service is selected, and consents to be an ambulance station having a definite area, the expense is limited to the institution finding standing room for the vehicle. These are, I believe, some points which serve to illustrate a principle to which prominence should be given in meeting the difficulties connected with the ambulancing of the metropolis generally.

I am, Sirs, yours faithfully,
REGINALD HARRISON,
President of the Metropolitan Street Ambulance Association.
Lower Berkeley-street, W., Sept. 20th, 1907.

## MUCOUS COLITIS.

*To the Editors of* THE LANCET.

SIRS,—I am interested in the paper on Mucous Colitis and your editorial article thereon in THE LANCET of Sept. 21st, as a short time ago I had a letter from a patient who suffered very severely from pseudo-membranous colitis and on whom Mr. Skene Keith operated in June, 1894, by performing right inguinal colotomy and double oöphorectomy. This, I believe, was the first operation of the kind performed in the country and was prior to that performed by Mr. C. H. Golding-Bird on a case under the care of Dr. W. Hale White, to which you refer. In THE LANCET of March 2nd, 1895, p. 537, Dr. Hale White remarked, "It has been suggested that in a very intractable case it might be justifiable to open the colon high up." In the issue of the following week Mr. Keith announced that he had already performed such an operation with complete success in June, 1894. I fully published this case in the *Medical Press and Circular* of July 29th, 1896, and the present condition of the patient is, "Now I feel quite well again and very comfortable. I am perfectly well in regard to the old trouble; no hæmorrhage, and the bowels regular every day. I am a surprise to many people who knew me as I used to be in days gone by."

I am, Sirs, yours faithfully,
J. CHRISTIAN SIMPSON, M.D. Edin.
Cambridge, Sept. 21st, 1907.

*To the Editors of* THE LANCET.

SIRS,—I think Dr. E. H. Harrisson makes a very important observation when he attributes the different characters of the mucus found in the stools to the period of time during which it has been retained in the bowel rather than to any difference in the colitis. No useful purpose is served by drawing a distinction between the different forms in which the mucus may be found, and such terms as membranous as opposed to mucous colitis are valueless. I am sorry to see, however, that in discussing the etiology he falls back upon the old view that mucous colitis is a primary neurosis. There is nothing but negative evidence to support this view, and the history of medical science has repeatedly proved such evidence to be valueless. As medical knowledge advances the tendency is to eliminate such vague causes for diseased conditions as neurosis. Where are all the "nervous dyspepsias" and "rectal neuralgias" which were so common in the older text books?

When no lesion is found in a case of mucous colitis is it not possible that we cannot find it, or that we are unable to recognise it when found, rather than that it does not exist? It is certain that a lesion of the bowel must have been present in many of Dr. Harrisson's cases, for in nearly half of them there was blood in the stools, and although piles may have accounted for this in some cases it can hardly have done so in all. Now blood in the stools is certain evidence of a lesion somewhere in the colon or rectum, since bleeding cannot occur from normal mucous membrane except in such grave constitutional conditions as hæmophilia and scurvy. Again, in over half the cases it is noted that there was tenderness over some portion of the colon, and tenderness, especially local tenderness, is evidence of a lesion of some kind in the bowel or neighbouring peritoneum.

One argument frequently used in favour of the neurotic theory is the preponderance of females among the collected cases. I think, however, this can be differently accounted for. It is frequently the secondary neurotic symptoms which first draw attention to the colitis, and women are more liable to become neurotic and to consult a doctor on account of vague symptoms than men. The fact that the cases seen in men are generally of a severe type also supports this explanation. The greater tendency to constipation and the liability to uterine disorders in women is also an important factor. I think it is much better and safer to look upon the condition called mucous colitis as a symptom rather than a disease and to direct our treatment towards finding and eradicating the cause. Even in the present state of our knowledge a definite lesion is often found which can be dealt with by surgical or other means.

I am, Sirs, yours faithfully,
P. LOCKHART MUMMERY.
Cavendish-place, W., Sept. 24th, 1907.

## ETHER INHALATION IN PULMONARY TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—I am sorry that I did not make my suggestion in my letter to THE LANCET of Sept. 14th sufficiently clear and thereby I misled Dr. J. Blumfeld as to my views. I fully agree that anæsthesia for operations upon phthisical subjects is not desirable, but I was not referring to *operations* but medical treatment of phthisis. Nor did I intend to argue that since cases of tuberculous peritonitis have been benefited by abdominal section performed under ether, that that benefit was due to the ether. I simply suggested it was a possibility. Dr. Blumfeld says: "The latter drug (that is ether) is much more likely to increase the activity of an active, or arouse that of a latent, tuberculous focus in the lungs." Quite so; my idea is that every tubercle, active or latent, should be attacked or aroused and destroyed. That is why I suggested a prolongation of the ether saturation (if I may use the term) of the body in order that latent tubercle in hard structures may be reached. I did not suppose that it would be necessary to keep a tubercle long in direct contact with ether before it would be destroyed. Dr. Blumfeld alludes to "several instances where pulmonary tuberculosis has been seriously aggravated after operations performed under ether." It is only reasonable to suppose that if we are going to wake up latent tubercle in order to destroy it, that that tubercle is not going to take its execution lying down. Desperate diseases require desperate remedies, but even those remedies can be used with that consideration suggested in my previous letter.

I am, Sirs, yours faithfully,

Sept. 23rd, 1907. Robt. Hugh Hodgson.

# PREVALENCE OF BILHARZIOSIS IN THE ZAMBESI BASIN.

*To the Editors of* THE LANCET.

Sirs,—Since the discovery made by Bilharz Egypt has always been considered as the favourite hunting-ground of Schistosomum hæmatobium. After the same distome had been discovered by Harley at the Cape it could be presumed that this malady, which raged at the two extreme ends of Africa, would also exist in all the remaining parts of the continent. As a matter of fact, it has been met with in a large number of countries but always appeared very much less frequent than was the case with the Egyptians, as pointed out as the result of investigations made by Bilharz, Greisinger, and Sonsino. According to these writers, in that country half the inhabitants are affected with this disease, which has been confirmed by the congress recently at Cairo (1902).

As regards the Zambesi basin it has been ascertained to exist there but in a vague manner. R. Blanchard remarks: "Throughout the Zambesi basin the inhabitants suffer from hæmaturia and they ascribe the cause of this disease to worms which they declare can be seen from time to time leaving them through the urethra." Brandt remarks: "This complaint is found along the lower course of the Zambesi" (1900). Patrick Manson and other writers who wrote after them did not refer to the prevalence of this malady in the Zambesi basin. I have ascertained the existence of this complaint along the lower as well as the upper reaches of this river, the characteristic eggs of bilharziosis being found in preparations of hæmaturic urine. But what appears to me the most interesting point is the extraordinary frequency of cases at least along the lower reaches of the river. Whilst in other parts of Africa cases are stated to be of small frequency or brought into the country from elsewhere, we have here before us a veritable hotbed of endemic disease.

Notwithstanding the absence of statistical data, which cannot be supplied in those parts, I believe that bilharziosis must be in the Zambesi region of a frequency equal to that which has been ascertained in Egypt. Chinde, Sena, and Tete, which are the principal posts on the banks of this river, are infested with this disease, which particularly attacks males and most of all children. Europeans, thanks to their superior hygiene, enjoy immunity from it. I have observed a considerable number of cases but I have only been able to follow nine of them (in all cases children). I have only observed urinary bilharziosis but it is more than probable that in addition the other known localisations of the disease could be discovered. I have used the Wortabel treatment with spirit of turpentine, to which I added thymol. The two medicaments were administered separately and successively Out of six cases thus treated I obtained improvement as far as pain was concerned in four cases.

I am, Sirs, yours faithfully,

Francisco Moraes Manchego, M.D. Lisbon.

Campo Maior, Portugal, Sept. 14th, 1907.

---

The Prevention of Tuberculosis.—At the meeting of the Newport (Mon.) board of guardians, held on Sept. 14th, it was decided to fit up a detached house near the workhouse for the treatment of cases of pulmonary tuberculosis.

# THE PUBLIC AND PRIVATE SLAUGHTER-HOUSES OF DUBLIN.

(From our Special Sanitary Commissioner.)

## Part II.[1]

### *The Private Slaughter-houses.*

There is in Dublin an organisation called the Dublin Victuallers' Association, composed in the main of master butchers. Two of its members are on the Dublin town council and one of them, Mr. William Field, is a Member of Parliament. It is undoubtedly an influential body and I appealed to it for facilities to visit private slaughter-houses. My request met with a courteous and favourable reply and some members of the committee very kindly accompanied me round to a large number of private slaughter-houses. The first was in North Dock Ward. It was well organised and situated well away from dwelling-houses. Both the stable and slaughter shed had carefully cemented floors. A sliding door kept the animal about to be killed outside where it could not see what was coming. The second private slaughter-house was near the Great Northern Railway, down a court, but only a few steps from a broad, well-frequented road with a tramway in it. The slaughter shed was immediately behind a dwelling-house abutting on to this road. On the other side stood the barracks of a fire brigade. This slaughter-house was but a poor, badly lighted shanty much too near dwellings. The walls were whitewashed but there was no other protection and only one small window. The place was wretched but quite clean at the time of my visit. It could not be called a slaughter-house but merely a little hut quite unsuitable for the purpose, in which, nevertheless, animals are killed. The third private slaughter-house was like a little barn with a pointed roof. There was no protection for the walls—I mean no water-tight, washable dado. The part of the floor where the horned cattle fell was of flag-stones which, when struck with the horns, is less likely to break up than concrete. Here, also, there was but one very small window. For the living animals there were a stall in the open and plenty of open space but no proper pavement, only small round stones, and the manure and blood readily sink in between these. The fourth visit was to another oblong, barn-shaped structure, but here at least the walls were daubed over with the tar-like substance known as naphtha-black and thus were much better protected against the splashing. A house overlooked this slaughter-house but it was at a fairly good distance. The fifth slaughter-house visited took, I was told, one and a half hours to whitewash, and this was done once a week. It was also a very small place.

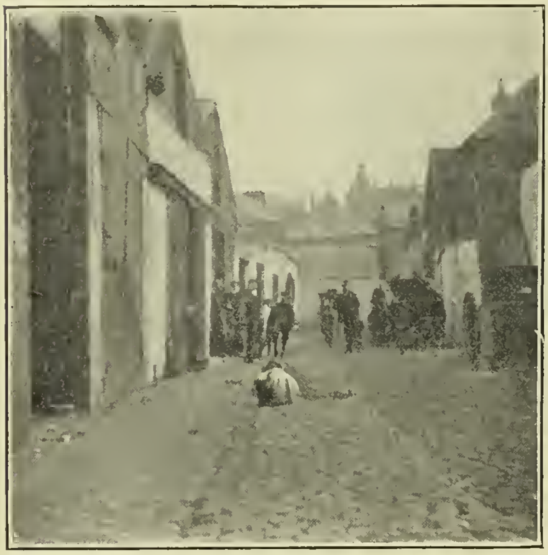
The proprietor of the sixth private slaughter-house which I visited was a man of enterprise; he had travelled, had been to America, and realised that slaughter-houses should be specially built. Therefore his slaughter-house has openings on all sides so as to give a through draught, but they are at a height of at least 15 feet. The workers are thus not inconvenienced by these currents of air. Then on the roof there is a louvred lantern with yellow-tinted windows, thus preventing the sun's rays gaining direct access to the meat and the butchers below. The lower part of the walls was of glazed bricks so that the fire-hose could be employed to wash them down. There were omnibus rails overhead to convey the carcasses along without effort. This slaughter-shed was, indeed, more modern, better built, and better ventilated than any one of the slaughter compartments into which the public abattoir is subdivided, except that for killing pigs.

We now went to the very heart of the city. Just by the side of the most celebrated thoroughfare in Dublin, Sackville-street, there is quite a nest of ramshackle private slaughter-houses. There is also a sort of "Petticoat-lane," or bazaar for second-hand objects of all sorts, a network of narrow passages where only pedestrians can pass and where the goods are displayed on stalls on either side. It is a poor, slummy district, ill-paved and not well frequented. Some of the low structures that apparently were originally intended for stables or coachhouses have been converted into shambles. Behind the first private slaughter-house visited in this district, but the seventh on my list, there still remained a dilapidated stable. Round small stones let the filth through into the subsoil of the centre of Dublin. The eighth slaughter-house was in the same yard. The walls were only protected with whitewash and had many crevices in which dirt and organic matter penetrated and remained to decompose undisturbed. The ninth, close at hand, was somewhat better. The tenth, again, was deplorable and there were many rafters with much dirt and dust on them which could fall on the carcasses. (See Figs. 1 and 2.)

---

[1] Part I. was published in The Lancet of Sept, 14th, 1907, p. 795.

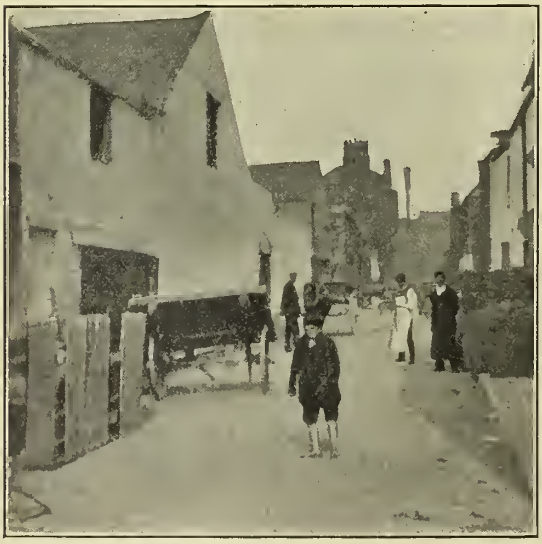
FIG. 1.



A court near Sackville street. The whitewashed buildings are slaughter-houses. The empty carts are waiting to convey meat. The blood often comes out on to the rough pavement where children play about.

On all sides I noticed many dead rats and innumerable living rats infest this cluster of slaughter-houses close behind Sackville-street. The private slaughter-houses are easy to recognise because they are all whitewashed.

FIG. 2.

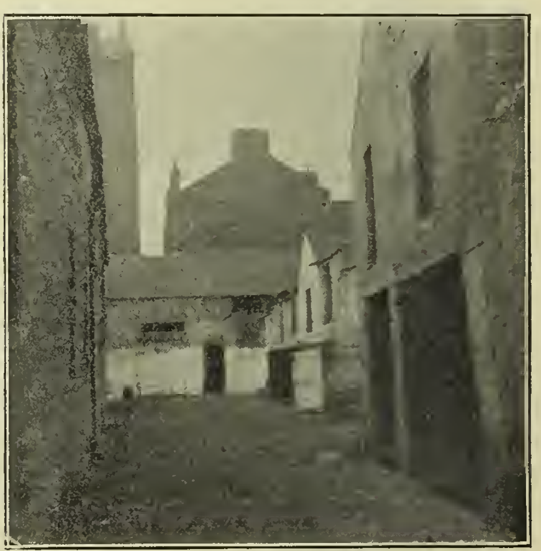


A side street near Sackville-street. This is a thoroughfare where there are several whitewashed slaughter-houses.

The plentiful and constant use of whitewash is the main redeeming feature. Not only are these little buildings inadequate in themselves but the opening of the doors lets much of the dirt out on to the ill-paved courts or streets. It is absolutely contrary to all principles aiming at the aseptic preparation of meat for carcasses to be handed about in these slums and close to the second-hand clothes market with all its germs and dirt. Then here, as elsewhere, and even in the municipal slaughter-house itself, there is the abomination of the wooden tables riveted to a wall on which the mesenteric fat is cut from the intestines. This is dirty work and the dirt locates between the wall and the table, remaining there even when the table is washed. In one or two places, however, instead of economising two legs of the table by riveting it against a wall there were solid four-legged tables which were not fastened to the wall and could therefore be moved and washed on all sides, and which when taken away did not prevent the washing of the wall.

The eleventh visit was in another thickly populated part of the town. Here some ingenious lifting-pulleys were used. The floor consisted of six inches of concrete and one and a half inches of asphalt. This place had been recently built and the best had been made of the crowded space but obviously slaughter-houses should not be behind shops in crowded quarters. The twelfth visit was also to a slaughter-house on the same premises as, and immediately behind, a shop on the south side of the River Liffey. Here the killing is done in a passage behind a very nice looking shop. There are stables and horses on one side of the passage. A little lantern roof to give more air and light has been built over the centre of this passage leading to the street behind the shop. Everything was very clean but cramped for want of space. The thirteenth visit was at a distance in the suburbs, not far from the exhibition. Here there was more open space and dwellings were not so near at hand, so some privacy and a good supply of air favoured the butchers. The floors were cemented not only in the slaughter-sheds but also in the stables.

FIG. 3.



Private slaughter-house at the far end of a court near the centre of Dublin. There is no through ventilation and there is deficiency of light inside.

The fourteenth and last visit was to the worst of all these small private slaughter-houses. Down at the far end of an ill-paved, dirty court there is a small, low structure. It has no back windows and hardly any window space in front. Within, innumerable corners, ledges, protuberances, and crevices keep the dirt secreted where the light of day cannot penetrate. There are but a small door and a small window, both on the same side and close to each other, so that it is impossible to establish a through draught (Fig. 3.)

After visiting these 14 private slaughter-houses the Victuallers' Association invited me to meet its committee and to discuss the matter. The discussion, however, was difficult, because all the arguments were directed against the present imperfect and insufficient public abattoir. No one present but myself appeared to have any conception of what a model abattoir might be and such knowledge cannot be conveyed in conversation. One butcher very justly remarked that the animals must rest before they are killed and be handled in a cleanly manner. If taken to the public abattoir rent had to be paid for them to rest and the master butcher could not be on the spot to see that his men did the work properly. Of course, in a model abattoir under the management of a veterinary surgeon living on the spot the most perfect cleanliness prevails and those who kill are under the direction and strict discipline of the sanitary authority, even if working for private butchers. The great idea was that if a butcher has a private slaughter-house just behind his shop he can kill when he likes, and as much or as little as he likes, according to the fluctuations in the demand for meat. He may want to kill only one animal and it would be a great loss of time to send all the way to the public abattoir. Then, if all the slaughter compartments were occupied he might have to wait a long time before being able to kill that one animal. Also, killing is hot work, and in cold weather it is a great risk for a man to drive outside a butcher's cart with the meat immediately after killing inside the hot abattoir. But there are, even at Dublin, two municipal slaughterers on the spot, employed by the town, and they could do all this retail work for the butchers without the latter having to send men from their shops for just one or two sheep. Then carcasses can be kept under better conditions at the abattoirs than in the small shops of the crowded districts. With properly constructed special vans to convey the meat to the shops it would be in such an excellent state that it would sell for a higher price. This is not a conjecture but what has actually occurred in many towns where model abattoirs have been constructed. The old-fashioned method of storing meat on ice is abolished and the customer soon perceives the improvement in the quality of the meat resulting from its more careful and scientific handling. From the public health point of view each animal must be examined and the carcass stamped by a veterinary surgeon before the viscera are removed. Of course, this is only possible in a public abattoir where the veterinary surgeons and their staff are on the spot at the killing hour. The stamping of the meat would do much to reconcile the Dublin butchers to modern methods. Their representative, Mr. William Field, M.P., has on several occasions attempted to introduce a Bill in the House of Commons for the stamping of imported frozen or chilled meat. At the same time home meat should bear the mark of the inspector. As the inspector could not be at all the private slaughter-houses the purchaser would be able to distinguish between imported meat, home-killed meat under proper inspection, and meat that had not been inspected at all.

Two main misconceptions stand in the way of effective reform. The butchers imagine that if they were compelled to go to a public abattoir this would cause them much extra labour and trouble, together with a considerable financial loss. Already the cry has been raised that if such a course was imposed then they must be compensated and apparently they imagine that they would be entitled to a large sum. Experience extending over several hundred towns shows that the reverse would be the case. But in ignorance of this fact another obstacle is created, and this time by the ratepayers. They, on their side, fear the increase of taxation so as to find means to construct model abattoirs and to compensate a large number of butchers. In answer to this it must be borne in mind that all experience proves that there can be no safer investment than a model municipal abattoir. However great the cost of construction and luxurious the installation, it pays interest on capital and provides for a sinking fund and often yields a considerable profit, thus helping to reduce instead of to raise the rates. The only condition of success is the absolute abolition of all private slaughter-houses.

The next question is the compensation to be paid to butchers, and where there is a genuine loss no one objects to compensation. In any case it is admitted by the German law, and we have before us the experience acquired in some 900 German towns. Of course, there must be a competent and impartial investigation, and then to what does it amount? At Gratz, in all, £160; at Dortmund, £690; at Kassel, £1050; at Magdeburg, £2100; at Kiel, £950; and so on. But at Dublin the position is quite exceptional, for if a complete model abattoir were established the advantage to the butchers would be so great that instead of giving them compensation they might very properly be called upon to contribute towards the cost of an enterprise destined to increase considerably their incomes. It is notorious that what pays best in public slaughter-houses is the utilisation of the by-products and the waste products. In Dublin this lucrative opportunity is wasted. The butchers do not even prepare tripe. Both from the public abattoir and from the private slaughter-houses all this is carted away. From the public health point of view this is most reprehensible. Obviously one of the principal reasons for establishing a public abattoir is to keep the control of these by-industries which are dirtier and more likely to create a nuisance than dealing only with meat under the direct control of the sanitary authority. Fortunately, it so happens that in this case there is complete harmony between financial interests and the interests of public health.

As the butchers of Dublin apparently do not know what to do with their by-products, do not possess the machinery and the technical knowledge for utilising them, this is an admirable opportunity for the town council. A model abattoir must be constructed with separate buildings on the same grounds for the salting and storage of hides, for cleaning, cooking, and tying together in bundles the feet of sheep and pigs; there must be a compartment for boiling calves' and other heads; then, far away, other departments for the preparing of tripe, the cleaning and treating of intestines to convert them into catgut or sausage skins; indeed, there should also be a pavilion for sausage making. Then the blood must be utilised on the spot and there must be a destructor to convert condemned carcasses into manure. In a word, nothing should leave the abattoir till it has been converted into a clean and saleable article. Even the manure should be an inodorous powder (*poudrette*). The most competent men of science and technicians should be obtained, if necessary from Germany, to organise all this. The moment the sanitary inspection of the slaughtered animal is over all the by-products would be conveyed to the different departments at once. After refunding the outlay the butchers would receive a good income from these by-products. At the same time they would realise something from the utilisation for other purposes, or from the sale, of the premises where their private slaughter-houses were situated. These two new sources of income would, in all probability, greatly exceed any extra expense entailed by having all their animals killed at the public abattoir. Dublin might then hope to place itself in this respect on a level with the 900 towns of Germany, not to mention towns of many other countries. The present deplorable and dangerous state of affairs cannot continue.

## FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

### THE OPENING CEREMONY.

Berlin, Sept. 23rd.

EARLY this morning the Congress offices in the Reichstag were thronged with new arrivals inquiring about everything and with those who, having been here a day or two, had discovered that they were wanting in many things. There was the ticket for this entertainment, the subscription for such a banquet, and the supreme perplexity of selecting which of the many visits and excursions it would be best to undertake. Fortunately for the foreigner who could not speak German members of the organising committee and others willing to help bedecked themselves with a yellow ribbon if they could speak English and with a blue ribbon if they could speak French. Many among them proudly wore both colours and thus help was easily found by those who could not otherwise make themselves understood. Loaded with guide-books, lists of members, circulars, and much printed matter were the most recent arrivals as they crossed over from the Reichstag to the New Opera House where the opening ceremony was to take place. They had to pass the column of Victory and the statues of Bismarck and Moltke on their way, though some took the wrong direction and lost themselves in the shade of the fine trees that are the glory of the Thiergarten. The New Opera House is quite unlike the majority of opera houses. It is a square building with a broad gallery round three sides and a narrower smaller gallery underneath and in the shade of the greater gallery. The higher gallery is by far the best and thus are "the gods" exalted. But on this occasion there were no gods, only goddesses, for here were placed all the ladies. Before 11 o'clock there was scarcely any standing room remaining; from 3000 to 4000 persons must have been present. It was early morning, but the theatre was lighted up and everyone wore evening dress. Exactly at the appointed hour, 11 o'clock, His Highness the Crown Prince appeared in front of the huge royal box, his light-blue uniform contrasting with the deep crimson and heavy drapery of the box. He stood at attention as the President of the Congress delivered an address from the stage. Here sat in rows the official representatives of many Governments. The audience stood facing the centre of the building, so that they had the platform or stage on one side and the royal box on the other side, and it could not be said to which of the two they paid the most attention. When the President (Prince Heinrich zu Schönaich-Carolath) had finished his few words of welcome we were all invited to sit down. But we had hardly taken possession of our seats when the President proposed three cheers for His Imperial Majesty the Emperor and we had to rise again. After we had duly repeated "Hoch!" three times the band played one verse of the National Anthem, which is the same as the English anthem. The band, however, was somewhat brassy and I missed those original and beautiful harmonies introduced by the splendid band of the Garde Républicaine when they welcomed the British physicians and surgeons during their visit to Paris.

After this loyal display we definitely resumed our seats and patiently waited for the long flow of speeches. They were, indeed, very numerous but most of the speakers had the good sense to speak very briefly. The scenery on the stage, if I mistake not, represented the palace of Sanssouci, though this was scarcely felicitous for a congress which on the contrary is worrying over every detail of life so as to make quite sure nothing injurious to health shall be allowed. On the other hand, the front of the stage represented a wood and recalled the forest or recovery schools which honour the Berlin promoters of school hygiene. Then on the side of the stage stood the monumental statue of Hygeia especially made for the Congress by the sculptor Georges Morin. From the galleries hung green garlands, while above fan palm trees drooped their branches gracefully over the ladies. The dark-green of this foliage contrasted with the lighter and more cheerful colours of the ladies' dresses and hats. It cannot be said, however, that the ladies displayed any startling toilettes, nor was there any sparkling show of jewellery. The men had to wear their best attire, though the ladies do not seem to have recognised any such obligation. But then, with wise economy, the women of Germany have refused to let the toilet question become the first consideration of existence. This demonstration of independence in regard to the dress tyranny comes appropriately at this moment, as it so happens that the old grievance of tight-lacing has just come to the front yet once more. A violent controversy on this subject is now engaging the press at large and strenuous efforts are being made to mitigate the evil. Of course, it is obvious which side sanitary reform will support.

After a few but well-spoken words from the Minister of State, Dr. HOLLE, Prince HEINRICH ZU SCHÖNAICH-CAROLATH, member of the Reichstag, member of the Herren-haus or Upper House, and President of the Congress, delivered a long speech which was translated into French by M. FUSTER (Paris). He pointed out that the object of the Congress was to serve all peoples by reducing the prevalence of sickness. The Romans had recognised the importance of hygiene, but in what darkness had they been enveloped since the fall of their great civilisation. However, hygiene had sprung to the fore again with such leaders as Pasteur, Lister, and Koch. Nevertheless, how great and profound was the misery that still remained. It was only necessary to visit any large town to see how much there was to be done and at the same time how many things were attempted. They would see the hospitals, the asylums, the sanitary institutes, and the public abattoirs. It was cheering to note also at these Congresses of Hygiene with what constancy men from all countries followed up from congress to congress the work attempted. Their efforts had led up to the conclusion of official international treaties in regard to precautions against epidemics, to labour protective legislation, and to the war against tuberculosis. The President also gave details of the immense sums spent under the compulsory insurance laws against accidents, sickness, and old age. Such labours were of benefit to all. To study hygiene meant to love your neighbour and to strive for human good.

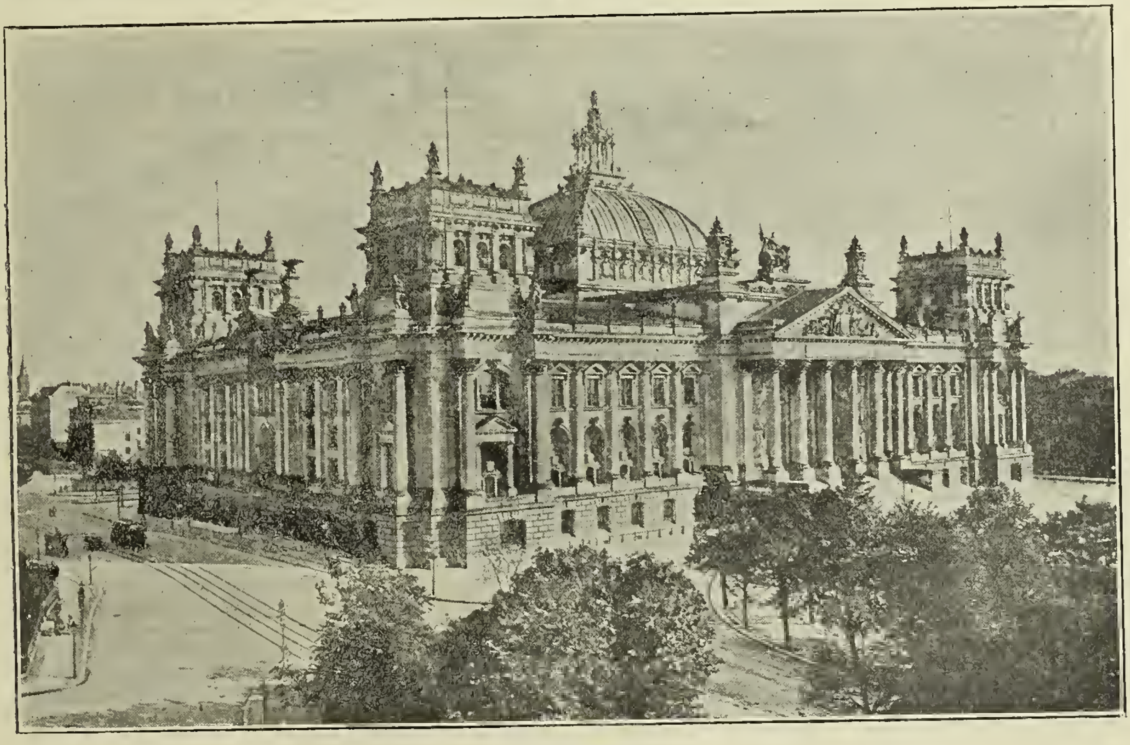
Dr. BUMME, President of the Imperial Board of Health, spoke next and was followed by the general secretary of the Congress, Dr. NIETNER. Now came in rapid succession Professor WALDEYER, secretary of the Academy of Science; Rector KAFTAN who holds a chair of theology at the University of Berlin; Professor KRANZ, rector of the Technical High School; and Professor SCHMALZ, of the veterinary school.

After these German speeches we reached the international series, led off, on behalf of the French Government, by Professor CHANTEMESSE, of the Pasteur Institute. He was followed by Count DE SALIS, Councillor to H.M. Embassy at Berlin, who spoke as the official representative of the British Government, but he only said a very few words conveying the usual felicitations. Then came Dr. PAGLIANI for Italy, Dr. RITTER VON JURASCHECK for Austria, and another speaker for Hungary. A Japanese officer said a few words in French about the welfare of civilisation and Dr. BERTENSEN came forward as the representative of Russia. By this time the audience began to melt away. Dr. CORTEZO, having paid compliments on behalf of Spain, was followed by Dr. CHARLES HARRINGTON, Professor of Hygiene at the Harvard University, who said the United States Government had determined to invite the next Congress of Hygiene to cross the Atlantic and the city of Washington was impatiently awaiting their arrival. After four more speeches Dr. BARERO rose on behalf of Mexico and Dr. H. G. BORGESIUS for Holland. The Norwegian representative had a word next and then the delegate from Roumania delivered himself of a lengthy discourse. It was long past the lunch hour and more than half the audience had already disappeared when the Danish spokesman concluded the series of international congratulations and compliments.

His Highness the CROWN PRINCE was now at liberty to cross over to the Reichstag and to inaugurate the Exhibition of Hygiene. To-morrow the real work, the meeting of the sections, will begin. This afternoon the members of the Congress are visiting Berlin or examining the Exhibition of Hygiene.

### THE EXHIBITION OF HYGIENE.

After the opening ceremony came the inauguration of the Hygienic Exhibition. This is held in the numerous lobby rooms, passages, corridors, and some of the committee rooms of the Reichstag. This massive pile, the German Houses of Parliament, of recent structure, built to house the representatives of a newly united Germany, is just at the beginning of the celebrated Thiergarten which constitutes the "Hyde Park" and "Kensington Gardens" of Berlin. Consequently, it is likewise close to the Unter den Linden, which is the Boulevard des Italiens of the Berliner. All the principal hotels are, of course, close to this choice district and therefore the members of the Congress will not encounter any topographical difficulties in visiting the exhibition or attending the meetings of the Congress. Of course, on the opening day there was but time for a superficial survey of the exhibition. Nevertheless, this sufficed to show its importance. Anyone with a taste for figures, statistics, diagrams, charts, and all kinds of devices to establish by optical means the comparative relationship of one disease to another, or of death to sex, occupation, age, &c., will find here the wherewithal for many hours of study. There are cubes of various sizes and colours showing at once the prevalence of this or that disease in some province, town, or country; also what happened before some special method of treatment was introduced and what has occurred since. On entering by the Brandenburger Thor I first came upon a marble bust of Prince Bismarck and on each side of it were elaborate exhibits of various systems of cremation as if the blood and iron statesman had specially advocated this method of disposing of frail humanity's mortal remains. One model showed a chapel with a place for the coffin on a trap door just before the altar. At a given moment the trap bolts are withdrawn and the coffin sinks out of view as if lowered into the earth. But below the chapel is the crematorium and, whilst the congregation is still praying, the body is consumed underneath. Here also are a variety of urns for the keeping of the ashes, and in a glass jar are shown the white clean ashes of a young woman, aged 18 years, who was cremated at Gotha. Close by is the reconstruction of a place for the preservation of urns which are attributed to an epoch that preceded the Slav era. Thus, the antiquity of the practice of cremation is practically demonstrated. The town of Hamburg shows its crematorium, as do several other cities. A few steps further and there is a table with all the reports of the Prussian statistical department, including a pamphlet on the hundredth anniversary of the existence of this office. Then comes a big stand of vital statistics and diagrams from Rio de Janeiro and immediately opposite is a similar exhibit from the Grand Duchy of Baden-Baden. The reason of such an unexpected juxtaposition is not given and I was left to wonder whether there was any more connexion between Bismarck and cremation than there is between Baden-Baden and Rio de Janeiro.



The Reichstag.

At this point and to the left there is a long narrow passage where all sorts of diagrams and pictures illustrate the working of the law for compulsory insurance against disease and accidents. Here are hundreds of photographs in large albums taken from life and illustrating all kinds of occupations where accidents may happen. Some photographs show what is defective and others how it can be remedied, and then statistics give the results attained. There are the actual figures and coloured designs or forms so that the proportional relationship of these figures may be realised at a glance. Taking up, as a sample, the first table to hand I found that it related to the accidents which had occurred in the building trades and on German ships in one year. Of these accidents 18,878 are described as inevitable and 9363 are attributed to want of skill. Want of guards—that is, the insufficiency or absence of guards or fencing of machinery—caused 3511 and deficient factory arrangements 3210 accidents. The accidents attributed to acting against rules amounted to 2442, and to the fault of a third person to 2370. The faults of employer and workman caused 2092, the failing to use guards 861 and insufficient instruction 826. The accidents caused by an inevitable outside force amounted to 590, carelessness or flightiness is responsible for 533, and badly fitting clothes for 220 more accidents. Finally, there were 1075 accidents due to unascertained causes. It will be easy to understand that with details concerning all the trades given with equal amplitude year after year there should be no difficulty in ascertaining where are the weak points. When the cause is known the remedy should be close at hand. The enormous masses of people comprised under the compulsory insurance laws of the German Empire provide for the whole world the most extensive and valuable statistics. The students of demography will be able to revel in this department and to find plenty of figures, especially in regard to trades and industries.

In a narrow passage behind this there are many very fine wax models of various skin diseases, and in the broad Wandell-Halle there is a magnificent array of exhibits relating to bacteriology. Then we come to a rotunda where numerous exhibits dealing with the hygiene of school are to be found, such as furniture for growing children. There is the model of the Strasburg Hospital for Children, showing how it has been enlarged while still keeping plenty of garden space and trees. Near by is a life-size model of stall-like partitions made of enamelled iron and of large glass panes by which children in the ward of a hospital can be separated and yet all be kept in view of the attendant. In a side wing the war against tuberculosis is illustrated by models of sanatoriums. There is notably the miners' sanatorium at Sulzhayn in the Harz Mountains, North Germany. Here the galleries for the "air cure" are in the centre of the half-circle made by the building, the dwelling blocks being at each end. Above and below are woods of pine trees. There are models, also, of cottage sanatoriums, and, what I have not seen before, a large collection of lantern slides that would be very useful for lectures on the subject.

What is called the Schreibsaal is devoted to exhibits of systems for the treatment of sewage mainly by processes of filtration intended to act bacteriologically on the sewage. Of course, there is a large plan of the Berlin drainage scheme and sewage farms. Many other practical exhibits are to be seen, such as the Clayton and other methods for killing rats on board ship, and a model of the warming and ventilating of the well-known German liner the *Kaiserin-Augusta*. The members of the Congress when weary of hearing papers read in the sections may find the exhibition more interesting, and the sections meet where the exhibition is held, for the Reichstag is large enough to hold them both. For instance, pathologists will find in the exhibits of the Imperial Board of Health of Berlin much that is likely to attract their attention. Thus there are a number of beautiful preparations of the organs of various animals—cattle, rabbits, guinea-pigs, &c.—which had been infected with tuberculosis by subcutaneous and intravenous injection, by inhalation, and by feeding with pure cultures and with tuberculous material derived from both human and bovine sources. The detection and recognition of blood for forensic purposes with the apparatus employed also forms an interesting exhibit, the method being the precipitation test of Uhlenhuth. By the same means horseflesh, for example, can be identified in sausages. A solution of the sausage is made by emulsification in water and to different portions of the solution the sera of rabbits which have been treated with emulsions of horseflesh, swine-flesh, goats' flesh, &c., are added. A white cloudiness or precipitate forms in the mixtures when the proteid emulsion comes in contact with the homologous serum. In the example quoted, a sausage made with swine flesh and horseflesh, precipitates occurred when the sausage emulsion was mixed with the serum of the rabbits which had been inoculated with swine flesh and with horseflesh but not with the serum of rabbits inoculated with other kinds of animal flesh. Materials, pieces of cloth, linen, &c., which had been examined for the presence of human blood stains were also shown.

The Imperial Institute for Infectious Diseases, Berlin, showed an extensive and well-arranged series of specimens, photographs, diagrams, and apparatus. Large plate cultivations of diphtheria, pseudo-diphtheria, and xerosis bacilli on litmus dextrose agar showed the differentiation of the diphtheria bacillus from the other two by the production of acid in the medium. A similar series showed the differentiation of the bacillus typhosus from the bacillus coli on litmus lactose agar. The method of typhoid enrichment according to the Lentz-Tietz method was also demonstrated. Inoculations from the stools are made in Löffler's malachite-green agar; this allows of the development and multiplication of the typhoid bacillus while inhibiting the growth of the colon bacillus, and by planting out the washings from the malachite-green plate after development on litmus lactose agar plates enables a plentiful growth of the typhoid bacillus to be obtained, the typhoid colonies producing no change in colour of the medium, while such colon colonies as there may be appear red. The differentiation of the various dysentery bacilli from one another and of the typhoid from the paratyphoid bacillus by the precipitation test with an immune serum of high potency was shown in a clear and conclusive manner. Specimens of therapeutic sera and of vaccines prepared at the institute were on view, also cases, preparations, and drawings of ticks, fleas, and blood-sucking diptera. Among the diagrams one showing that the incidence of malaria during different months of the year in Verona coincides with the prevalence of anopheles was of interest.

Sets of portable apparatus for establishing temporary laboratories for the campaign against typhoid fever, cholera, and plague were worthy of notice. Beautiful specimens of pure cultivations of micro-organisms and of the organs of animals which had suffered from the principal infective diseases were noteworthy. Plates of blood-agar inoculated with the staphylococcus aureus from the normal skin and from abscess pus showed that in the former case the organism produces hæmolysis and in the latter it does not, a point of some interest.

The exhibits of a chemical nature and apparatus associated with hygienic chemistry are naturally allotted a somewhat limited space in the exhibition. However, those shown in connexion with the Imperial Board of Health and appearing under paragraphs 34 to 37, p. 151, of the catalogue afford an excellent sample of the nature and scope of chemical investigation in its relation to general hygiene. The buildings of the Imperial Board of Health contain laboratories divided into separate rooms as follows: (1) general chemical laboratory; (2) food analysis laboratory; (3) balance room; (4) polarimeter and spectrometer room; (5) physical laboratory; besides rooms for high-temperature experiments, microphotography, and stores. With such an equipment every opportunity is afforded for the complete utilisation of analytical experiments for hygienic uses. Photographs of these laboratories are shown. Apparatus for the following processes are exhibited in the same recess: (1) estimation of small quantities of CO in air; (2) testing matches for white and yellow phosphorus; (3) the photographing of absorption spectra of blood; (4) collecting samples of air for examination for noxious gases; (5) the action of lead on drinking water—(*a*) apparatus for determining the extent to which a given water possesses lead-dissolving properties, and (*b*) for testing the action of lead-tin alloys in water; and lastly, the Polenske apparatus for determining volatile acids in butter. The Polenske apparatus is presumably devised as a modification of the apparatus in use for Reichert's process and differs from it in having an upright condenser and a bulbed tube with a more abrupt bend connecting the condenser and flask in order to allow for the erect condenser. The principal use of this process is to detect the presence of cocoanut fat in those butters which give a slight deficiency in the Reichert number, the further distillation of such samples showing the presence of non-soluble volatile acids which are absent from genuine butter fat. Actual adulterations are exhibited in the case of certain foods and drugs, the Halphen test for the presence of cotton-seed oil in butter, the appearance of copper-coloured gherkins contrasted with those not treated in that way, honey and moist sugar, and many other specimens. This exhibition if slight in itself is a valuable addition to the vast field of bacteriological technique shown in the surrounding recesses.

# THE SECOND INTERNATIONAL CONGRESS OF "GOUTTES DE LAIT."

(FROM OUR OWN CORRESPONDENT.)

THE second International Congress of Gouttes de Lait was held in Brussels on Sept. 12th-16th, under the patronage of their Royal Highnesses the Prince and Princess Albert of Belgium. The Congress, the meetings of which were held in the Palais des Académies, was attended by over 600 delegates, including the official representatives of the Governments of the Argentine Republic, Bulgaria, France, Germany, Holland, Italy, Luxembourg, Norway, Roumania, and Spain. The delegates from Great Britain numbered about 40, representatives being present from the municipalities of Birmingham, Glasgow, Hampstead, Huddersfield, Hull, Liverpool, Manchester, Newcastle, and Woolwich. The President of the Congress was Dr. A. Devaux, Inspecteur-Général du Service de Santé Civile et de l'Hygiène of Belgium, and the secretary was Dr. Eugene Lust, the general secretary of the Ligue Nationale Belge pour la Protection de l'Enfance du Premier Age.

At the first International Congress of Gouttes de Lait, which was held in Paris in 1905, the discussions were almost exclusively confined to the work of the Goutte de Lait; the scope of the Brussels congress, however, was much more extensive and comprised the whole question of the prevention of infantile mortality. It was decided, moreover, that the scope of future congresses should be similarly extended and that they should be given a new name of wider significance. But it was thought advisable to retain the term "Gouttes de Lait," without translation, in the official title of the Congress, which will henceforth be called the "International Congress of the Protection of Infant Life (Gouttes de Lait)."

### *The "Goutte de Lait."*

The work of the Goutte de Lait, in its various aspects, formed one of the chief subjects of discussion at the Congress. The Goutte de Lait, which is perhaps the most popular of continental institutions for the prevention of infantile mortality, is represented in our own country, in a modified form, by the infants' milk depôts that have of late years been established by several of our municipalities. It is practically a milk dispensary from which babies are fed under regular medical supervision during the first two years of life. Mothers are induced to attend the Goutte de Lait once a week so that their babies may be weighed and examined by the medical man in attendance. The mother is encouraged in various ways to suckle her baby, but if this is impossible she is supplied every day with specially prepared infants' milk in bottles, each bottle containing the proper quantity for one meal. The mothers are carefully instructed in the practical details of infant management, the chief object being to make the Goutte de Lait a school for mothers. There are now over 20 Gouttes de Lait in Brussels, most of which were established by the Ligue Nationale Belge pour la Protection de l'Enfance du Premier Age.

Some of the Brussels Gouttes de Lait are practically well-equipped out-patients' departments. At Dr. Lust's Goutte de Lait in the Place des Martyrs there is a serviceable laboratory where periodical examinations are made of milk, urine, stools, &c. Special attention is paid to nursing mothers. The mother's state of health is ascertained, her teeth are examined by a competent dentist, and any digestive disturbances are carefully attended to. If for any reason the mother appears to be losing her milk prematurely the cause is sought and, if possible, removed. Should the mother herself be insufficiently fed the Goutte de Lait, acting on the principle that the best method of "humanising" cow's milk is to pass it through the human mother, supplies the mother with milk for her own consumption at a nominal price. All the mothers are furnished with booklets and cards on infant feeding and management, and the printed directions are supplemented with careful oral instruction. Dr. Lust's Goutte de Lait is much frequented by medical students, nurses, and teachers who wish to gain practical experience in infant hygiene.

The Congress decided that the Goutte de Lait was an institution of great value generally both for breast-fed and for hand-fed infants, and that it formed an effective measure for the prevention of tuberculosis.

### *Infantile Mortality Statistics.*

A valuable series of papers was submitted relating to the infantile mortality statistics of 14 countries. The chief fact brought out in these papers is that the systems of birth and death registration adopted in the different countries are so diverse that it is practically impossible to compare the infantile mortality rates one with another. The main point of divergence is the registration of still-births. In some countries, as in England, still-births are not registered at all. In others a child is said to be still-born when, although born alive, it has failed to survive longer than 24 hours. The Congress decided, on the motion of Dr. DIETRICH (Berlin), that a committee should be appointed to consider the best means of establishing a trustworthy basis for precise and uniform international statistics of infantile mortality.

### *Infant Feeding.*

An interesting discussion took place on a paper on the Regulation of Infant Feeding by Dr. SIEGERT (Cologne). Dr. Siegert contended that the method of feeding an infant every two or two and a half hours was without physiological justification and that in practice better results could be secured by allowing an interval of nearly four hours to elapse between each meal. He held that suckling every two hours led to the exhaustion of the mother and to the impoverishment of her milk and consequently to the premature discontinuance of breast-feeding, and he thought that many mothers who now prematurely weaned their babies would continue suckling with excellent results if they were advised to give the breast every four hours instead of every two. Dr. Siegert's views gained considerable support but there were many dissentients.

### *Milk-supply.*

The control of the milk-supply was one of the most important subjects discussed at the Congress and an excellent series of papers was submitted relating to the regulations in force in different countries for the control of the production and distribution of milk. From these papers, and from the discussions to which they gave rise, it was evident that in no country could the control of the milk-supply be considered satisfactory, and there was a general feeling that much more stringent measures were necessary. Mr. NATHAN STRAUS, who for the past 15 years had been supplying pasteurised milk at a nominal price in the poorer districts of New York City, submitted a paper in which he advocated the compulsory municipal pasteurisation of milk. Mr. Straus holds, as a result of his 15 years' practical study of the milk problem, that the "only safe rule is—pasteurise the entire milk-supply and make it a function of the municipality."

Mr. Straus's proposal of compulsory pasteurisation was opposed by Dr. HENRY J. COIT (Newark, N.J.) in his paper on the Development of the Pure Milk Movement in the United States. Dr. Coit contended that compulsory pasteurisation was undesirable because "it would remove the incentive to the public to compel, and to the producer to accomplish, improvement, and so postpone the time when a uniformly pure milk-supply would be available to the masses," and also because "pasteurised milk in bulk is not only intrinsically less desirable than clean raw milk, but is actually unsafe unless it is consumed within 24 hours and is kept constantly at or below 10° C." He thought that the general milk-supply could best be protected by the following measures: "(1) By proper legislation, looking to the elimination and eradication of tuberculosis and other serious diseases of cattle and the exclusion of persons having infectious or contagious diseases from any connexion with the production or handling of milk. (2) By thorough inspection of the sources of milk production, handling, and shipping; by care in the sterilisation of containers; by insuring proper cooling directly after milking and its constant maintenance till delivery to the consumer; by securing sanitary conditions in all places where milk is exposed for sale and the washing of all receptacles immediately after being emptied."

Dr. Coit, who is the President of the American Association of Medical Milk Commissions, gave an interesting account of the "certified milk" movement in America, which he originated in 1893 in Newark, N.J. "Certified milk" was milk that was certified by a voluntary commission of medical practitioners to be produced in accordance with a stringent code of sanitary requirements laid down by the commission. 27 medical milk commissions had now been organised in the principal cities of the United States. The work undertaken by these commissions was as follows: "First, to establish correct clinical standards of purity for cow's milk; second, to be responsible for a periodical and personal inspection of the dairy or dairies under its patronage; third, to provide for bi-monthly expert examination of the dairy stock by competent and approved veterinarians, and for medical supervision of the employees by competent physicians. The milk produced is subjected to periodical chemical analysis and to bacterial counts made under the direction of the commission as often as in its judgment is desirable." The expense of the examinations and inspections was defrayed by the dairymen supplying the certified milk, but the members of the commission received no remuneration for their services.

To many members, however, it appeared that it was hopeless to expect private enterprise to fulfil all the conditions necessary for the adequate protection of milk against contamination and at the same time to supply milk at a sufficiently low price to keep it within the reach of the poor whose present consumption of milk is far too small. The view was expressed that the only solution of the problem was to be found in the municipalisation of the milk-supply. In this way the rise in the price of milk could be prevented, for the municipality, working on a large scale would be able to effect such economies in delivery cartage, and in other processes of distribution as would neutralise the increased expenditure necessitated by the observance of the strict regulations and precautions required by modern sanitary science. A proposal in favour of the municipalisation of the milk-supply was moved by Dr. ENSCH (Schaerbeek, Brussels), and seconded by Mr. F. LAWSON DODD (London). It gained considerable support but was not carried.

### *The Popularisation of Infant Hygiene.*

On the last day of the Congress an instructive discussion took place on the methods employed in different countries for the dissemination of information relating to infant feeding and infant management. Dr. S. G. MOORE (Huddersfield) gave an account of the system of health visiting adopted by many of our sanitary authorities, and he explained how this work would be facilitated by the Notification of Births Act which Mr. John Burns succeeded in passing through Parliament last session.

Dr. COIT gave a brief *résumé* of the health visiting work which is now being carried on with so much energy in New York City, both by the city health department, through its summer corps of physicians and nurses, and by the New York Association for Improving the Condition of the Poor. This association has been enabled by Mr. John D. Rockefeller to employ a large body of trained nurses who, during the past summer, visited 100,000 families, "giving the mothers actual demonstrations of how to bathe, dress, and feed their children, and in cases of illness to care for them in their own homes or in a summer hospital provided by Mr. Rockefeller for their use."

Miss M. G. TAYLOR (Manchester) briefly explained the methods adopted in the Manchester elementary schools for instructing the older girls in the hygiene of infant life. Miss Taylor gives a practical course of instruction to all the older girls in the schools. The course consists of six lectures with practical demonstrations, two lectures being devoted to teaching how a baby should be washed and dressed, two to infant feeding, and two to the general management of infants.

Several teachers took part in this discussion which ended in a short and animated debate arising out of a motion proposed by Dr. WINOCOUROFF (Odessa). This motion was to the effect that the popularisation of infant hygiene was only possible on the condition that the instruction given was accessible to the mass of the population and that the point of departure in all measures for the prevention of infant mortality was "l'instruction générale et obligatoire." M. RENE HENRY, the editor of the *Journal de*

*Bruxelles*, who took a prominent part in the Congress, pointed out that in some countries, and especially in Belgium, the question of compulsory education was a "question politique irritante," and he suggested that the words "instruction le plus largement généralisée" should be inserted in the motion in lieu of the words "instruction obligatoire." This suggestion was strenuously opposed by the great majority of the members present and after a vigorous debate the decision on the question was remitted to the full meeting of the Congress in the afternoon. At this meeting Dr. Winocouroff insisted on his motion being put in its original form, and his remarks roused so much enthusiasm that the President declared his motion to be adopted by the meeting.

### *An International Union.*

The most important outcome of the Congress is the formation of the "International Union for the Protection of Infant Life." This organisation, which will probably play an important part in the movement for the prevention of infant mortality, has elected Dr. Escherich of Vienna as its president, and the secretary is Dr. Eugene Lust of Brussels. The Union, which has its permanent bureau in Brussels, is controlled by a committee of 50 members, including the following representatives from Great Britain:—Councillor W. F. Anderson of Glasgow, Alderman Broadbent and Dr. Moore of Huddersfield, and Dr. G. F. McCleary of Hampstead.

The next meeting of the Congress will be held in 1910 in Berlin.

# THE INTERNATIONAL CONGRESS OF PSYCHIATRY.

(From our own Correspondent.)

(*Concluded from p. 862.*)

## Section II.—Psychology.

The section devoted to Psychology met under the presidency of Dr. G. Heymans, professor of philosophy at Groningen, when a few members of the Congress "in thoughts more elevate, and reasoned high" debated such subjects as the difference between apprehension and conception, the oscillations of attention, the association of object conceptions, the classification of character, the mental growth of children, and the biographical methods of psychology.

Dr. Paul Sollier criticised

### *The Theory of the Emotions*

advocated by James and Lange. These philosophers could not help seeing that the beginning of an emotion, say that of fear, was an intellectual anticipation of danger, and this is accompanied by various changes in the functions of the organism. It was pointed out as far back as 1859 by Bain in his book on "The Emotions and the Will" that "the whole brain, with all its connexions in the general framework of the body, is concurrent and participant in a state of mental emotion; and in proportion as the different parts of this extensive machinery can be diverted in other ways the emotion fails to arise or is liable to be suppressed." The difference between Dr. Sollier and James and Lange mainly is that the former seeks to circumscribe the significance of the diffused wave of nervous energy attending an emotion, whereas the latter regarding the cerebro-spinal axis and the sympathetic as one mechanism consider that the change in the whole body is an integral part of the emotion. Dr. Sollier regards the emotion as an affection of the cerebral cortex; the wave of energy which spreads through the nerves to the viscera and capillaries he considers rather to be an epi-phenomenon. He supports this view by some arguments drawn from psychological analyses and experiments on animals, but especially by a reference to pathological cases in which there is a rupture of the means of communication from the brain owing to injuries of the spinal cord below the medulla oblongata, in which Dr. Sollier tells us the emotion appears as intense as in ordinary cases. Before accepting the correctness of this statement, which would be a fatal objection to James's theory, one would like to consider the cases, nor can it quite readily be admitted that emotions at their outset are confined to the cortex cerebri, since the great mass of the white matter has surely something to do. Dr. Sollier concludes by observing that the mental representations and the modifications in the organism occur simultaneously. Emotion is really constituted by the sentiment of the diffusion of the discharge of cerebral energy along with the intense activity of the brain.

### *The Sthénomètre.*

Dr. P. Ioire, President de la Société Universelle d'Études Psychiques, showed to Section II. his Sthénomètre, by which he claims to be able to demonstrate the presence of a force emanating from the nervous system and of measuring its power. This emanation, he said, appears to be the same as the exteriorised force of the mediums, hitherto so difficult to demonstrate and to study. The index needle shows that it is modified in diseases of the nervous system, suffering a diminution in intensity in proportion to the nervous depression of the subject.

## Section III.—The Care and Nursing of the Insane.

In this section Dr. van Deventer detailed what had been already done in Holland for the insane and laid down some proposals for

### *The Education, Rights, and Duties of the Attendant Attached to Hospitals for Mental Diseases.*

He observed that a good staff of attendants is the knot of the question and if his proposals are adopted the duties of the superintendent will be made easy. Before entering on his work the attendant should go through a preparatory course of instruction, comprising domestic economy, cooking, household work for women, some notions about nature, teaching, especially in relation to singing, and conversation. It would be desirable that the men should know some trade which might be utilised in the asylum. In the hospital for the insane there should be a graded professional school of instruction conducted by the medical superintendent. The course should occupy three years, with yearly examinations, at the end of which a diploma may be aspired to. The attendant should be insured against accidents and bad health and an old age pension accorded.

In a report by Dr. W. P. Ruysch the same proposals were maintained with philosophical simplicity. No one should be called upon to assume the functions of an attendant for the insane who cannot give proofs of civilisation, intelligence, capacity, and devotion, and it is desirable that such attendants should have attended with success as interne pupils in a special school. He remarked that their emoluments should be proportional with the importance and the length of their services Here, I may remark, comes in the difficulty of the undertaking. It is possible that these fine qualities may be commoner in Holland than in Great Britain, but human nature is something the same everywhere. The class of men who apply for employment at the asylums in these islands and the pay and maintenance which are allowed to them will need to be improved greatly before the candidates will appear who will come with proofs of the fine moral qualities and accomplishments desired. The vicissitudes of life and a willingness to engage in a good work sometimes bring women of a superior class to apply for employment as nurses to asylums. Few of these women have received any special training, although they often bring the capacity, moral and intellectual, of quickly learning their duties. There is a danger that by too trying examinations and by asking a long period of probation for a formal certificate forbidding barriers may be erected against good applicants.

Dr. van Deventer was followed by Dr. G. E. Shuttleworth (London) who detailed what had been done by the Asylum Workers' Association in England for the education and welfare of attendants on the insane.

### *Feeble minded Children in Italy.*

Professor Ferrari (Bologna) gave an interesting account of what has been done for feeble-minded children in Italy. They were subjected to training under medical superintendence. In the discussion following Professor Ferrari's paper Dr. Alt (Uchtspringen, Saxony) made some observations upon the treatment of the feeble-minded in Saxony.

### *The Family Treatment of the Insane.*

Much time was taken up by lengthy papers, the substance of which was repeated at a special conference, in praise of what is styled "the 'family' treatment of the insane."

Dr. Marie (Villejuif) recommended *l'assistance famili e* *et le travail agricole* for quiet chronic lunatics and for convalescents. The idea of colonies around the asylum was favoured. Harmless patients and epileptics might be boarded at greater distances.

Dr. PEETERS (Gheel) expressed the opinion that in what he called the "closed" asylums (*asiles fermés*) there was a considerable danger of the patients falling into dementia owing to the lack of amusement and employment, and he even considered that Gheel was better for acute cases.

### *The Sanatorium Treatment of Insanity.*

A paper on the Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air by Dr. C. C. EASTERBROOK (Ayr) was read by Dr. J. H. MACDONALD (Paisley). The following passage thus sums up his results: "Comparing then the general therapeutical effects in active insanity of outdoor exercise, indoor rest, and outdoor rest, I find that outdoor exercise benefits primarily the physical condition but may retard the mental improvement; that indoor rest benefits primarily the mental condition but may retard the physical improvement; and that outdoor rest benefits from the first both the mental and the physical condition. Outdoor rest thus from the outset promotes both mental and physical improvement, and so retards neither; further, it avoids the risk of undue exhaustion which attaches to the method of exercise; and lastly, it obviates the evils of bodily inactivity and sluggish metabolism which attach to prolonged indoor rest."

Dr. REUTERGHEM (Amsterdam) defended the treatment of hypnotic suggestion against the objections of Déjerine and Dubois; in this he was vigorously supported by Dr. C. LLOYD TUCKEY (London).

Dr. W. W. IRELAND (Musselburgh) read a paper upon the Increase of Diseases of the Nervous System and of Insanity, in which he argued that these derangements were found to be increasing beyond the general increase of the population in every country which furnished statistics, except Norway. The paper is published in full at p. 892 of our present issue.

### EXCURSIONS AND PLEASURE VISITS.

The Congress was finished on Sept. 7th by an excursion to Leyden, the Hague, and the asylum at Endergeest. This is situated within large grounds with high trees; the rooms are light and airy, the wooden beds are clean and comfortable, although the furniture is scanty compared with what is seen in British asylums. The equipment of the laboratory is admirable. The excursion finished by a visit to Schevening, the fashionable watering-place of Holland. In the Kursaal 150 guests sat down to an excellent dinner. Appropriate speeches were made by the presidents and other dignitaries. The foreign delegates returned thanks for the courtesy with which they had been treated. After a concert in the large music hall and a display of fireworks the company got back to Amsterdam about midnight, having been away since half-past nine in the morning.

The amusements provided during the week by the hospitable care of the Amsterdamers formed an attractive and improving feature of the Congress. These recreations, besides the opening ceremony already mentioned, comprised a *soirée* by Dr. and Mrs. van Deventer in some beautiful rooms in the Keisergracht, a reception by the burgomaster, and an entertainment by the students' club. There was an excellent entertainment in the Leidisch Plein Theatre where Dutch national songs were sung by a chorus of 20 girls dressed in white and some male vocalists. The Dutch excel in singing in chorus. In the intervals *tableaux vivants* were exhibited reproducing some Dutch paintings representing medical subjects, which included Rembrandt's picture of Professor Tulp giving an anatomical lecture with a dead body in the foreground.

On Sept. 4th there was a pleasant boating excursion to Zaandam where was seen the wooden hut in which Peter the Great lived when he came to Holland to learn shipbuilding.

The visitors left Amsterdam grateful for the unaffected kindness and courtesy with which all had been treated. Thanks are especially due to Dr. van Deventer, Dr. van Wayenburg, and Dr. Londen, to whose good offices so much of the success of the Congress was due. It was gratifying to have so favourable an opportunity of witnessing the energy and intellectual capacity of the Dutch people who inhabit a small country which they have rescued from the sea but which has a history inferior to none in illustrious deeds. Men like Deventer, Jelgersma, and Wertheim-Salomonson are worthy successors to Boerhaave, Swammerdam, and Schroeder van der Kolk.

---

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *The Black Smoke Problem.*

AT Preston yesterday a firm of cotton manufacturers was summoned for failing to comply with a notice to abate a smoke nuisance. Mr. H. O. Pilkington, the medical officer of health, said that the evidence proved a nuisance. For the firm it was stated that they were trying to abate the nuisance and had spent £85 on one chimney. The further expression of opinion was hazarded that "there was nothing yet known that would cure the black smoke nuisance." If this were the last word to be said on the matter the dwellers in our towns would have a hopeless future. As the two magistrates on the bench could not agree the chairman thought that it would be better if the case were heard before a fuller bench. This hopelessness as to getting rid of the smoke nuisance did not show itself during the discussion on the subject at the recent sanitary conference at Llandudno. Those who suffer do not need the eloquent indictment of Sir William Richmond to strengthen their feelings on the subject, though the destructive effects on our public buildings as set forth raise the question above the personal sphere. But Mr. Nicholson, a sanitary inspector from Sheffield, showed how much can be done in the way of prevention, without expensive appliances, by careful and intelligent stoking. But the care and the intelligence are not always exercised. These qualities have sometimes been quickened by rewards for the least production of smoke and great improvement has been the result. Mr. Nicholson summed up the matter briefly when he said: "It was quite possible to prevent the emission of black smoke without special appliances, provided there was ample boiler power, reasonable draught, fair fuel, and intelligent stoking." Mr. Rooke of Manchester showed the unfortunate position of the town in being surrounded by large and important manufacturing towns, so that whichever way the wind blew the city got some of the smoke from its neighbours. This is especially hard in the case of Manchester, as it heads the list for its work in regard to the suppression of the smoke nuisance. As Mr. Rooke said, if the districts round Manchester would only carry out the law to the same extent Manchester would have a much purer atmosphere than it has to-day. It is interesting to note that at the recent meetings of the Chambers of Commerce, where it was moved from Manchester that it was desirable to minimise the emission from manufactories of dense volumes of black smoke, "the resolution met with considerable opposition from the representatives of manufacturing centres." The proposition was, however, carried. It is a fact to be lamented that there are still people who will vote for the continuance of black smoke and a polluted atmosphere.

### *The Infirmary Site.*

As to the present site of the Royal Infirmary, the question as regards the corporation most frequently asked is, What will they do with it? Some want the present building pulled down and a free library and art gallery "worthy of the city" put in its place. Others think that the present buildings might very well be altered and adapted so as to serve the same purpose. The corporation, in presence of this clash of opinions, has decided to obtain "the opinion of an eminent architect, absolutely free from local bias" on the question as to whether it is possible or desirable to adapt the infirmary buildings for the purposes named. It has, therefore, asked Mr. T. E. Callcutt, president of the Royal Institute of British Architects, to report as to their adaptability to the purposes of a reference library, art gallery, and municipal offices.

### *Nursing at the Macclesfield Workhouse.*

The Macclesfield board of guardians discussed the nursing arrangements at the union infirmary on Sept. 17th, and it was proposed that the medical officer to the workhouse should report to the board on the organisation of the nursing staff and on the many changes that take place and the engagement of temporary nurses. One of the medical guardians thought that the organisation was at fault and he objected to the course adopted by the board of advertising for a nurse with certain qualifications and then appointing someone who did not possess them. Some candidates afterwards appeared but none had the necessary qualifications; it was agreed to readvertise the vacancies.

### *Salford Royal Hospital.*

It has long been felt that the Salford Royal Hospital required extension. It is the only general hospital in Salford, with its population of 235,000 to 240,000 people, with a very large proportion of the working classes, and it is believed that when the Manchester Royal Infirmary leaves Piccadilly for Oxford-road the strain on its resources will be materially increased. At present there are 135 beds and it is proposed to have 200, while more accommodation is required for the nurses and staff and for domestic offices. Adjoining land will have to be purchased and the total cost is estimated at £70,000. Up to the present £27,081 have been received or promised, so that £42,000 have still to be raised. During the past three years the number of out- and home-patients has averaged nearly 20,000 per annum and there has been a considerable increase in the number of in-patients and accident cases. Unfortunately, for the last ten years or so the expenditure has exceeded the income by about £1300 a year and capital funds have been trenched on to meet the recurring deficits. But the average cost per occupied bed of about £43 per annum compares favourably with that of other similar institutions. The authorities of the hospital think that they have a strong claim on the generosity of the public, to which they make a special appeal.

### *Poisoning by Carbolic Acid.*

Carbolic acid is such a familiar domestic article that its being a poison is liable to be forgotten, even though it is, strangely enough, a favourite agent of the suicide and causes more accidental deaths than perhaps any other poison. An inquest held the other day illustrates the carelessness of many working-class people with regard to carbolic acid. A child, three years old, the son of a miner of Failsworth, asked his six-year-old sister for a drink. She took a large bottle off the chimney-piece, thinking it was herb beer, and gave it to the boy. He drank some of the contents and screamed. He was taken to the Royal Infirmary but did not recover from the shock and died there. The verdict was "Death by misadventure" and the jury added that the bottle ought not to have been left within reach of the children. Carbolic acid is, of course, a very useful thing but the cause of a considerable needless loss of life, and the regulations as to its sale should be as stringent as in the case of any other poison. It is unfortunate that several other equally useful but much less poisonous preparations are not more frequently used in its place.

### *Fatal Homely Remedy.*

AN unusual cause of death was investigated at Blackburn 10 or 11 days ago. A woman, aged 60 years, had made a saucer hot and put it under her clothes over her heart as she had suffered from pains in the chest. While crossing the street she fell and was carried home unconscious. It was found that the saucer was broken and that three large pieces had penetrated the chest wall, "medical skill being required for their extraction." She died almost immediately.

Sept. 24th.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

### *Bristol Workhouse Infirmary.*

SINCE the extension of the city boundaries there have been in Bristol three workhouses—at Eastville, Stapleton, and Southmead. At Eastville there are about 200 sick persons housed in temporary wood and iron buildings under conditions which cause some anxiety to those concerned with the administration of the institutions. Upon many occasions during the past few years the Local Government Board has urged upon the board of guardians the desirability of doing away with these structures and providing better and safer accommodation. Various schemes have been proposed and have arrived at a stage when it appeared likely that they would be adopted, but upon one pretext or another, usually that of expense, they have been abandoned. The latest project was considered by the board of guardians on Sept. 20th. It involved the removal of all the wooden buildings at Eastville and the erection of a double pavilion of a permanent character to accommodate 192 beds at a cost of £13,000. The committee which had the matter under consideration recommended that any alteration of accommodation should be so arranged as to enable a complete system of classification to be adopted by utilising the Stapleton buildings for the imbeciles and epileptics, those at Southmead for the aged and able-bodied, and those at Eastville for the sick. This proposal would entail extensions at each of the three institutions, but it appears to be the most economical and at the same time satisfactory scheme which has yet been considered. It is to be regretted that the recommendation of the committee did not receive the support of a majority of the board which refused to endorse them on the plea that they lacked finality and opened out possibilities of future expense. In the end it was decided to appoint a committee to make arrangements to remove the helpless sick from the wooden buildings at Eastville. One member of the board ridiculed the suggestion that there was more danger from fire in the wooden buildings than in more permanent structures, though it is felt by those experienced in such matters that the retention of the former places a very serious responsibility upon those members of the board of guardians who are opposed to their removal.

### *Vaccination Fees in Herefordshire.*

The fees to be paid to the public vaccinators have now been agreed upon with one exception in each of the eight Herefordshire unions. In the city of Hereford the fee has been reduced from 5*s.* to 3*s.* 6*d.* Elsewhere the only alteration has reference to a second operation performed in the same house within 24 hours. In three unions the fee in this case is to be 2*s.* 6*d.* and in one 3*s.* 6*d.*, while in three others there will be no reduction. The exception indicated above is the Bromyard union where there is as cattered population living in a hilly district on the borders of Herefordshire and Worcestershire. There are three public vaccinators and it was suggested by members of the board of guardians that they should be paid a fee of 4*s.* however great the distance to be travelled. As they very properly declined to accept so inadequate a sum the Local Government Board is to be asked to fix the amount.

### *Housing at Ebbw Vale.*

The medical officer of health of Ebbw Vale has frequently drawn attention to the need of more houses in the district and on one occasion described certain cottages as more like pigsties than anything else. The lack of houses has been taken advantage of by some landlords who have raised the rents to a considerable extent, so much so that it is stated in some instances the workmen pay as rent one-half their wages. Two years ago the urban district council decided to build 20 houses but the Local Government Board would not sanction a loan for the purpose owing to the sites selected being too far distant from the collieries. The matter is still more urgent now than it was formerly and it is hoped that more suitable sites have been secured, so that the erection of houses by the council may be begun. It is intended to have a bath-room in each house.

### *Madame Patti at Swansea.*

Madame Adelina Patti (Baroness Cederstrom) has upon many occasions organised concerts in Cardiff, Swansea, and Brecon for charitable purposes and the local hospitals have always benefited to a considerable extent. About £650 will be handed over to the Swansea Hospital as the result of the latest concert given by Madame Patti on Sept. 19th. This was the ninth occasion upon which she has thus helped the funds of the hospital.

Sept. 24th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

### *Memorial to the late Dr. James Wilson of Govan.*

THE fountain which has been erected to the memory of Dr. James Wilson, who was for 21 years a medical practitioner in Govan, was unveiled last week. The chairman of the committee presided and introduced Mr. Robert Duncan, M.P., who, in handing over the gift, eulogised the work of Dr. Wilson. Provost Anthony, one behalf of the town council, accepted the gift.

### *Portrait of Professor J. G. McKendrick.*

In the early part of the year a movement was initiated to recognise in some appropriate manner the services to science of Professor J. G McKendrick, who last year retired from the chair of physiology in the University of Glasgow. As part of the scheme it was decided that a portrait of Professor McKendrick should be presented to the University, and Mr. J. H. Lorimer, R.S A , has been commissioned to execute this. It is expected that the formal presentation will take place at the biennial commemoration ceremony at the University in April next. The balance of the fund will be expended on the equipment of a laboratory of experimental psychology.

### *Retirement of Dr. James Rutherford.*

Dr. James Rutherford, the medical superintendent of the Crichton Royal Institution, Dumfries, has tendered his resignation on account of the state of his health. In the 24 years during which Dr. Rutherford has been at the head of the institution it has been greatly developed on the most modern lines. The asylum is endowed and receives private paying patients to the number of about 500. It also provides in separate buildings for the mentally afflicted who are chargeable to the parish councils of Dumfriesshire and Galloway.

### *Physics Laboratory for University College, Dundee.*

Plans have now been approved for the Carnegie Physics Laboratory which is to be erected in connexion with University College, Dundee, and building operations will be commenced immediately. The building will consist of two storeys with basement and attics and will be fitted up after the most modern methods.

### *Annual Report of the Campbell Hospital, Portsoy.*

The annual report by the joint board of the Campbell Hospital has just been issued. During the past year the hospital has been very fully occupied. On May 15th, 1906, there were three patients in the hospital and since then there have been admitted and treated 53 patients. Of these 56 patients 54 were discharged during the year cured and one died, leaving in hospital on May 15th, 1907, one patient who has since been discharged cured. Of the 56 patients 26 were suffering from typhoid fever, 27 from scarlet fever, and three from diphtheria. The patients were admitted from the areas of Banff, Macduff, Portsoy, and Cullen local authorities. There were no "return" cases and no cases of cross infection. During the year the hospital has had to cope with a serious outbreak of typhoid fever in Findochty and with an outbreak of scarlet fever in Banff. The matron's salary has been increased from £40 to £50 per annum. In consequence of the large number of typhoid fever patients simultaneously treated the board had in August last to obtain additional beds, bedding, and furnishings. At the same time the ordinary staff of the hospital had to be supplemented for some time by two extra nurses and a laundry-maid. The board is engaged in considering the necessity of providing additional drying accommodation in connexion with the hospital laundry and some other arrangements to which the medical officer called its attention during the year.

Sept. 24th.

## IRELAND.

(FROM OUR OWN CORRESPONDENT.)

### *The Treatment of Infectious Disease in Belfast.*

THE question as to where patients suffering from infectious disease are to be located in Belfast has for some time been a controversial one between the Belfast board of guardians and the public health committee. Up to last year all such cases were treated at the fever hospital in connexion with the union workhouse, with the exception of a few cases of typhoid fever which were treated at the Royal Victoria Hospital. Since the new municipal fever hospital at Purdysburn has been available the guardians have asked that all their fever patients should go there in order to remove the risk of infection from the vicinity of the 4000 people in and about the union workhouse, which is situated in the centre of Belfast. It appears that in the North and South Dublin unions they have no infectious diseases treated at the workhouse. It was stated at a meeting of the Belfast board of guardians on Sept. 17th that there were 31 cases of typhoid, or typhus, fever and other infectious diseases in the union fever hospital and 46 patients in the city fever hospital at Purdysburn. The guardians want to know why, after the ratepayers have gone to such great expense in building outside the city a municipal fever institution, so many infectious cases still remain in the union fever hospital in the heart of Belfast. They are determined to pursue the matter until all the patients suffering from infectious diseases are transferred to the city fever hospital. A lengthened discussion took place on the question at a meeting of the public health committee held on Sept. 19th, when it was decided to ask the guardians to supply returns of the maximum number of each class of infectious diseases under treatment in the union hospital at any one time during the past ten years and this would give an idea of the accommodation that should be provided if the union hospital authorities made an arrangement with the committee to take charge of patients suffering from any of the notifiable diseases. The truth of the matter is quite clear: when the municipal authorities erected an infectious diseases hospital they made it too small, under the impression that such cases up to a certain number could be treated in the union fever hospital, to which, naturally, the guardians object.

### *Belfast Union Consumption Sanatorium.*

The formal opening of the Abbey Sanatorium in connexion with the Belfast workhouse took place on Sept. 19th, the chairman of the board of guardians performing the ceremony. The site cost £5000 and £30,000 have been spent in erecting and equipping the buildings. One section of the building is for the accommodation of early cases and the other is for advanced cases. In the former the average number of cases will be 120, and in the latter 150. There are an administrative central building and four separate pavilions and a hospital block. Around the buildings there are 33 acres of land. When fully equipped it is hoped to have all the workhouse consumptives located in this new sanatorium. This institution reflects the utmost credit on the Belfast guardians.

### *Queen's College, Belfast: Opening of New Laboratories.*

Owing to the sudden illness of Lady Kelvin Lord Kelvin was unable to open, as had been arranged, the new laboratories at Queen's College, Belfast, on Sept. 20th, but his nephew, Mr. James Thompson, M.A., read his address. The President of Queen's College presided, and having referred to the seven laboratories to be opened that day and to the disappointment felt at Lord Kelvin's enforced absence, called upon his nephew, Mr. James Thompson, to read Lord Kelvin's address, which he did. Sir Otto Jaffe then formally declared the laboratories (chemical, physical, engineering, physiological, pathological, biological, and pharmacological) open. Sir Christopher J. Nixon, Vice-Chancellor of the Royal University, moved a vote of thanks to Lord Kelvin, Mr. Thompson, and Sir Otto Jaffe, which was seconded by Professor E. A. Letts, Ph.D. A gold key intended for Lord Kelvin was presented to him through Mr. Thompson. The National Anthem having been sung, a very large company was entertained at a garden party within the college grounds by the president and professors, when the new buildings, which were thrown open for inspection, were visited and greatly admired by the guests. In his address Lord Kelvin referred to the fact that never on one day and in one university were seven laboratories opened for scientific instruction and research; consequently it was, in his opinion, a unique day in university history.

Sept. 24th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

### *Tuberculosis Problems.*

TWO interesting questions relating to tuberculosis but differing considerably in their essential aspects have recently claimed attention. The first one had reference to a man who, after being in the service of a railway company for 17 years, had been dismissed as tuberculous and therefore unfit for the work. He thereupon brought an action for damages against the company. An expert was appointed to inquire into the facts and the court awarded the plaintiff 5000 francs on the ground that his unfitness for active and regular work had not been in any way proved because the progress of the disease from which he suffered was slow and he was strong enough to follow his employment. The other question had reference to an antituberculous dispensary. I have already mentioned in THE LANCET that the authorities had resolved to establish at the Hôpital Laennec a sanatorium for the treatment of pulmonary tuberculosis and to combine with it a dispensary for the benefit of patients suffering from tuberculosis but not able to be admitted to hospitals. In consequence of this decision petitions were sent to the Minister of Public Instruction by the local residents who feared that the children attending a school in the same street, but at a distance of 150 metres, would be in danger of infection. The Conseil d'Hygiène et de Salubrité of the department of the Seine on hearing of this complaint requested M. Letulle to make a report. In this report, which was unfavourable to the prayer of the petitioners, M. Letulle said that in the practical working of methods for the prevention of tuberculosis it was universally found in all countries beyond the possibility of doubt that antituberculous dispensaries were not a danger to the neighbourhood. On the contrary, their effect is to reduce the number of cases of pulmonary tuberculosis and thereby to render the neighbourhood of the dispensaries more healthy.

### *Transmissible Diseases in Communal Schools.*

The Minister of Public Instruction has recently addressed to the prefects a circular in connexion with the precautions to be taken against certain infectious and contagious diseases in the primary public schools. The Minister states that for the purpose of putting an end to a state of uncertainty which might cause uneasiness to families he has resolved to remove *pelade* (alopecia areata) from the official list of contagious diseases; this arrangement has also the approval of the Conseil d'Hygiène et de Salubrité of the department of the Seine. Specific directions are given as to the course to be taken when the following diseases make their appearance in the schools. Children attacked with small-pox or scarlet fever or diphtheria must not return within 40 days; their books and copy-books must be destroyed; and general disinfection must be carried out. In the case of small-pox all the teachers and pupils must be revaccinated and in the case of scarlet fever the school must be temporarily closed if several children fall ill within a few days notwithstanding all precautions. Children attacked with measles must not return within 16 days, their books and copy-books must be destroyed, and if necessary the school may be closed to children under six years of age. Children attacked with epidemic parotitis or whooping-cough must not return within ten days and three weeks respectively. Children affected with tinea must not return until they have received appropriate treatment and have had dressings applied.

### *The Treatment of Deformities Caused by Tuberculous Disease.*

A large orthopædic institute has been established at Berck by Dr. Calot for the treatment of tuberculous diseases of the bones and superficial structures, deformities, dislocations, and coxalgia. Berck is a seaside place in the department of the Pas de Calais; its climate is naturally suitable for this class of patients and Dr. Calot's method of treatment has had a gratifying amount of success. This year he has arranged a series of clinical demonstrations (*conférences*) at which all the details of treatment and all the difficulties likely to be encountered are explained; the process of making and applying various forms of apparatus is also shown upon patients. The daily course of instruction consists of a preliminary discourse lasting for a quarter of an hour and practical instruction for two hours. These courses are well attended by medical men. Dr. Calot attaches much importance to early diagnosis of the diseased condition and steady perseverance in the treatment selected.

Sept. 24th.

## BERLIN.

(From our own Correspondent.)

### *The Medical Examination of Military Recruits and the Workmen's Insurance Law.*

In Germany every young man in his twentieth year has to present himself before a commission consisting of military men and civilians in order to be examined by an army medical officer as to his fitness for military service. This is for a great many young men the first medical examination which they have undergone, and sometimes morbid conditions are discovered of which the man himself was not aware but which, of course, prevent him from entering the army. In order to make these examinations as far as possible useful for the young men thus rejected the Government has decided that in cases where the army medical officer has found some morbid condition which might by appropriate treatment be prevented from becoming worse he shall be authorised to give notice to the authorities of the workmen's sickness insurance organisations in order that they may, if necessary, give attention to the case. This coöperation of the military medical officers with the civilian health authorities will be advantageous to young men in the early stage of pulmonary tuberculosis, as well as to those suffering from other disorders or abnormalities of the lungs, the circulation, the eyes, and so on. The army medical officers are not required either to undertake the correspondence with the insurance offices or to make any suggestions as to the precautions which ought to be taken, since either of these duties would add considerably to their work. They have only during or after the meeting of the recruiting commission to give its civil president the names of the men who seem to require medical attention. The president of the commission will then send a list of these men to the district insurance office (Landes-Versicherungs-Anstalt) which has to decide on the case. Furthermore, when a soldier has been dismissed from the army for some chronic disease during his period of service the military authorities have to notify the case to the district insurance office. These regulations, of course, concern only men earning less than 2000 marks per annum, as they are the only men coming under the provisions of the law relating to insurance against sickness.

### *Disinfection of the Hands.*

Professor Klapp and Dr. Dönitz of the Berlin Surgical Clinic, writing to the *Deutsche Medizinische Wochenschrift*, recommend a new proceeding for the disinfection of the hands of the surgeon and the field of the operation respectively. They point out that the various endeavours that have hitherto been made to produce absolute sterility of the skin by means of chemical agents have failed because germs are left in the folds of the skin. Some surgeons therefore wear gloves during an operation and it has also been proposed to protect the skin with an impermeable covering through which germs could not penetrate. This principle is a very reasonable one, although the practical execution of it is difficult, especially for the skin of the surgeon's hands. Professor Klapp and Dr. Dönitz have now devised a method by which the bacteria are, as it were, imbedded in an impermeable substance. For this purpose they use a solution of wax which in their earlier experiments was dissolved in ether, but they afterwards preferred tetrachloride of carbon as the solvent, being cheaper and less inflammable than ether; this solution, which is termed "chirosoter," is sprayed over the hands by a spray-producer, and when the solvent has evaporated a thin coating of wax is left on the skin. Water, pus, blood, and other fluids now run off the skin just as from oil-paper. It is essential that the skin should be as dry as possible previously to the application of the chirosoter, and therefore a previous disinfection by alcohol, spirit of soap, and similar dehydrating agents is recommended. The coating of wax remains in good condition for a considerable time and is not affected by washing with soap and water. After the operation the wax should not be removed from the hands as it is an excellent cosmetic agent, making the skin soft and smooth. The practical results obtained by this method in a large number of operations are said to have been very good. It has also been found useful in fresh wounds, such as division of tendons, where the surroundings were covered by chirosoter without any other disinfection. Bacteriological examination of the skin showed that the germs present in it were greatly reduced in number.

Sept 23rd.

## SWITZERLAND.

(From our own Correspondent.)

### *The Prevention of Tuberculosis.*

On July 21st the Swiss Central Committee for Combating Tuberculosis held its fifth annual meeting at Olten. The committee is doing energetic work by forming active subcommittees in the cantons of Bern, Nidwalden, Glarus, Freiberg, Solothurn, Appenzell, Waadt, and Neuchâtel. In eight other cantons the sanatorium committees have undertaken the work and in three other cantons the local sanitary authorities have done so. A women's league for combating tuberculosis has been founded and hygienic societies have offered their support. Thus there is progress on all sides. Another paragraph is to be added in the new Swiss Insurance Law for workmen, with special reference to increased support in cases of long-standing illness. Dr. Sandog, Dr. Kürsteiner, and Dr. Mailart spoke about the antituberculous dispensaries which have been organised in Neuchâtel, Bern, Lausanne, and Geneva. In Neuchâtel two medical men and a nurse are attached to the dispensary; medical treatment is not undertaken but advice is given regarding prophylactic steps to be adopted. The dispensary supplies spittoons and disinfectants; gives aid in the shape of food, fuel, bedding, &c.; disinfects apartments; and provides for patients in sanatoriums and country homes. In Lausanne and Geneva medical treatment is also provided through the out-patient departments of the University hospitals. Similar dispensaries are to be established in various other Swiss towns.

### *Medical Students at Swiss Universities.*

The number of medical students at the five Swiss universities has again considerably increased. For the summer term 2075 students were on the lists as compared with 1884 in the previous summer. Only 567 were of Swiss nationality, 1508 being foreigners, principally Russians. Energetic steps are being taken by the various university authorities to reduce the number of foreign students. The fees have been increased and the entrance examinations have been made more difficult. The number of students at the universities in the several cities was as follows: Basle, 175 (two ladies); Bern, 538 (334 ladies); Geneva, 445 (241 ladies); Lausanne, 435 (301 ladies); and Zürich, 482 (210 ladies).

Zürich, Sept. 20th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *A Sanitary Reawakening.*

ON Sept. 20th, 1870, Rome became the capital of United Italy and yesterday's celebration of the event was conspicuous as compared with the 36 previous celebrations, for the tranquility of the proceedings and the high tone, intellectual and moral, that pervaded the oratory. Abuse of "priestcraft," "obscurantism," and "mediæval superstition"—the *loci communes* of former commemorations—was replaced by serious discussion of Italy's requirements, prominent among which are public instruction and public hygiene, beginning in both cases with the child. And, indeed, the discussion has begun not a day too soon. Education, particularly in its earliest stages, is still deplorably defective, and even if the teaching *personnel* and equipment were more efficient they are heavily handicapped by the sanitary conditions of the accommodation and, above all, by the state of health of the child. Go into any school, urban or rural, attended by the poorer classes and one of the first things that strike you is the number of "adenoids"—victims to naso-pharyngeal obstruction—among the scholars. The "facies adenoidea" (of recent Italian nomenclature) meets you at every turn—betrayed by the pallor, the low vitality, the hebetude alternating with a false vivacity, the "bocca semi-aperta" (half-open mouth), and other symptoms to which the next remove is cretinism. Stand near one of these little pupils and, particularly if he is interested in his task, you can hear his buccal respiration—or "snoring awake," at it has been called. He seems suffering from a chronic cold in the head (*costipazione di testa* is the expressive Italian word for it) and on a nearer look at him you as often as not detect conjunctivitis, lacrymation, or redness of the *margines palpebrales.* In a word, the little man is a victim to those "vegetazioni adenoidei" the result of malnutrition operating on a physique often septic by transmission and reinforced by foul air in the dormitory or in the school itself. The air passages surcharged with this dense mucosity affect the pronunciation, particularly of the nasal vowels and the labial consonants, ending in stammering, stuttering, or positive non-articulation. "Sordità adenoidea" is another symptom due to the same cause and this "deafness" is often found in the proportion of from 20 to 30 per cent. of the attendances. Teacher and pupil alike are thus baffled in their work by causes purely physical and the whole interests of education are compromised by what might be avoided by previous medical surveillance and treatment. That Italy has awoke to increased solicitude in this direction on the part of parents particularly is manifest from the discussions of this very subject in the lay press and from the prominence which it occupies in the programme of the Physio-Therapeutic Congress to be held next month in Rome.

### *Vegetarianism.*

Any movement that makes for intelligent alimentation in food or drink must be welcomed in Italy, where "use and wont" of the most uninquiring or credulous kind have long dictated the *cuisine*. Discussion as to the good or evil to be derived from a diet exclusively vegetarian draws Italy's attention to a field in which she has hitherto fallen much below her opportunities, and this is already one of the gratifying results to be deduced from the opening of "vegetarian restaurants" in the capital. One of these celebrated its "trial trip" on Sept. 19th and the presence of not a few general practitioners and consultants attested the interest taken, professionally as well as socially, in the new departure. The *menu* was compiled from purely vegetable sources, salt was taken very sparingly, and wine was officially excluded. It is true that under these two heads—salt and wine—there was a little mutiny on the part of the guests, some of whom were allowed to gratify their tastes, though in the strictest moderation; but, on the whole, the symposium was a success and, though far from conclusive as solving the question whether, or to what extent, vegetarianism is sound dietetics, it had the collateral recommendation of proving how palatable and even sustaining the "kindly fruits of the earth" may be made by skilled cookery and how an increased demand for the said "fruits" may be instrumental in raising Italy to the position which nature intended her to occupy—that of the "market garden" of Southern Europe.

Sept. 21st.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

### *A Sanatorium conducted by a Limited Liability Company.*

A PROMINENT member of the medical profession has hit on the idea of forming a limited liability company for founding a sanatorium. In Budapest the want of a modern sanatorium where patients of the better class could be accommodated has been felt for a long time and for this reason the idea of carrying on a sanatorium under the management of a company has met with the general approval of the medical profession. The share capital will be a little more than £20,000, divided into 2000 shares. For the first two weeks shares can only be subscribed for by medical men, but they may afterwards be taken up by the general public. Every shareholder has the right to use the sanatorium for one week in a year at half the usual charges. Patients under the care of shareholders will be considered in the first place, and other patients will be accommodated after those under the care of shareholders have been provided for. The sanatorium will be furnished with every modern convenience and a variety of baths, including pine, carbonic acid, Nauheim and Turkish baths. There will also be lying-in wards and two operating theatres. The directorate consists of a surgeon, a gynæcologist, a clinician, and a dermatologist. The charges made for rooms, including nursing and full board, will be most moderate, something about 5*s*., 6*s*., and 10*s*. per day, but the directors nevertheless promise 17 per cent. net dividend, even if all the rooms are occupied only on 300 days per annum.

### *Lumbar Anæsthesia in Gynæcology.*

Dr. Avarffy has published the results of some trials of lumbar anæsthesia which were made in the clinic of Dr. Bársony, professor of gynæcology. He says that the results were very satisfactory. Lumbar anæsthesia, like general anæsthesia by inhalation, has its risks, and there is also a possibility of doing some harm if great care is not taken, especially in observing the special conditions of individual patients. Statistics which exhibit a greater mortality under lumbar anæsthesia than under anæsthesia by inhalation are erroneous, because it is a generally accepted fact that cases of asphyxia, difficult breathing, and collapse are much more frequent during the latter than during the former. The after-effects of lumbar anæsthesia are also much less serious than the vomiting and pneumonia which so often follow chloroform anæsthesia.

### *Medical Congress in Pozsony.*

A medical congress has just been held in Pozsony, a large city on the Danube wrongly known abroad by its German name of Pressburg. The proceedings commenced on August 27th, with Count Apponyi, Minister of Public Instruction, in the presidential chair. The first address was delivered by Dr. Fisher who spoke on Moral Insanity. He said that this was a mental disease and therefore those suffering from it could not be made accountable for their actions before a court of law. They must be regarded not as criminals but as patients. Dr. Konrad said that there were persons who might be truly described as born criminals. They were, however, not a distinct species of the genus homo but were degenerates. Persons suffering from the so-called moral form of weak-mindedness formed a permanent element in the prison population. They ought not to be admitted into asylums for the insane because they would exert a disturbing influence on the work of such asylums and to keep them in prison would be unjust. The first duty of the law was to protect the community and "anti-social" persons who were at war with society should be banished to distant self-maintaining colonies. Dr. Detre, lecturer at the university of Budapest, showed a new method, devised by him, with the help of which it was possible to decide within 24 hours whether the bacilli with which a tuberculous patient was infected were of human origin or were derived from the lower animals or whether there was a double infection. Dr. Bilasko, assistant-surgeon of the dental clinic, read a paper on anæsthetics in dental surgery. In an address on "The Cosmetic Aspect of Tattooing" Dr. Emil Weyner said that tattooing was extensively applied in dermatological practice for concealing facial scars, and that it was very much in fashion in the army. In the Austro-Hungarian Army almost every soldier was tattooed. Dr. Weyner claims to be the first medical man in the world who tattooed the eyelids.

Sept. 16th.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

### *Cholera.*

ALL the interested authorities in the Turkish metropolis, such as the Conseil Supérieur de Santé, the Conseil Supérieur d'Hygiène, and the municipalities of different districts, are taking very energetic and extensive measures to prevent the epidemic of cholera which is still raging in several provinces in Russia from invading Ottoman territory. Strict quarantine is imposed upon every steamer and sailing-boat coming from the Black Sea. Ships from Odessa are subjected to three days' quarantine. A special commission has been sent to Sinope on the Black Sea in order to enforce all the quarantine measures of prevention which have been decided upon in Constantinople. Ships bringing Russian pilgrims for the Hedjaz railway will not be allowed to touch at any port on the Bosphorus or the Dardanelles and will have to go directly to Abu-Saad, where they will be subjected to 48 hours' observation and the requisite forms of disinfection. Should, however, a case of cholera manifest itself on board ship during the voyage from Russia to Cavak on the northern entrance to the Bosphorus the ship will be sent back and will have to visit the lazaret at Sinope in order to undergo all the necessary measures provided for the exigency. Should a case of cholera occur beyond the strait of the Bosphorus the steamer will be directed towards the lazaret of Glazomene. Not only pilgrims but also ordinary passengers will have to submit to the same measures. After the quarantine at Sinope passengers will also have to undergo a medical inspection at Cavak. The same will be the case with steamers and passengers coming from Batoum and Sebastopol. In Russia the cholera seems to spread. Eight fatal cases occurred this week at Saratow, 13 at Tsarizin, and 10 at Nijni-Novgorod.

### *The Hamidié Hospital.*

This hospital has issued its *Annales Médicales*. It is a big volume full of interesting information and of beautiful illustrations. It contains original articles by eminent European medical men and an able monograph on "Un Cas de Hernie Diaphragmatique" by the well-known Constantinople surgeon Dr. Cambouroglou Pasha. From these reports it appears that the Sultan has spared neither money nor energy to make his hospital a perfect and in every way an up-to-date establishment. New buildings have been recently erected at great cost. The pavilion for women has received special attention. Mention is made in the volume of the new sanatorium to be erected at Kutahia in Asia Minor. This sanatorium is intended primarily for tuberculous patients. It will be built in the centre of an extensive pine forest on a high elevation upon the plateau of Kutahia which is reputed to possess an abundance of excellent springs. The air of the place is pure and the scenery is magnificent. It will be under the control of the medical authorities of the Hamidié Hospital, thus forming, as it were, a branch of this establishment. A new large edifice with a chemical and analytical laboratory has been added, as the old one proved to be insufficient. The hospital, with all its branches, is under the direction and management of Dr. Ibrahim Pasha, physician to the Sultan.

### *The Water-supply of Damascus.*

It is reported from this city that the work of canalisation for the purpose of supplying it with good drinkable water was begun last month. Up to now Damascus has been provided with water from the Chrysorhoas or the so-called "gold river" of the ancient Greeks, named at present Barada. This river, the Abana of the Bible, intersects the city with its several branches. In olden days there existed an admirable system of channels and pipes, by which water was conveyed through every quarter and almost into every house. There are also numerous wells. The distribution used to take place in a very ingenious manner. It is said that Abana is the life of Damascus and that it has made it perennial. It is also used very extensively for irrigation of the innumerable orchards, gardens, and vineyards and fields that are found in a circuit of at least 60 miles. Damascus and its surroundings owe their almost unrivalled beauty and luxuriance to the Abana. Yet its supply of water, though abundant, was not perfect from a sanitary and hygienic point of view. It has many a time proved to be the source of different epidemics. To remedy matters the former vali, Nazim Pasha, decided to construct canalisation works which would conduct to the city water from the famed source Ain Fijé, 20 kilometres from Damascus. These works, as already mentioned, have been commenced. A large reservoir will be constructed on the heights of Salhyé and the water which will be gathered up there will then be distributed to the different quarters by solid, extensive, and elaborate piping. Every municipal district will be provided with 26 public fountains.

### *Miscellaneous Notes.*

The Sultan has conferred the gold and silver medals of the Imtiaz upon Dr. Zambaco Pasha who distinguished himself especially with his investigations and works on leprosy.—The *Ikdam* reports that a Mahomedan from Bitlis produced a birth certificate according to which he was born in the Turkish financial year 1190, being consequently 133 years old. The man came to Constantinople in search of work. He does not look more than 60.—Last week's mortality returns show that 222 deaths took place in Constantinople, of which one was from scarlet fever, three were from diphtheria, three from small-pox, 12 from typhoid fever, 30 from tuberculosis, and one was due to cerebro-spinal meningitis.—Among the garrison of Tirnovo an epidemic of typhoid fever has broken out. The number of deaths amounts to 50. It is feared that the town will be attacked by the epidemic.

Sept. 20th.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

### *Federal Text-book on Pure Milk Questions.*

THE Agricultural Department at Washington has issued a volume of reports containing the results of the conference of experts called together by the department to consider the various questions now agitating the country in regard to the purity of the milk-supply. The conference consisted of 35 recognised experts in the study of the questions involved. This volume will be the recognised text-book of the health authorities of this country for the present, as it carries the weight of authority of these experts and the endorsement of the Department of Agriculture. In brief, these experts agreed upon a definite milk programme and have recommended that public safety should be assured by legislation establishing three classes, or grades, of milk—namely, certified, inspected, and pasteurised. They would not tolerate any trifling with the public in the sale of so-called certified milk. They would require that such milk should come from dairies subject to periodic inspection and that the milk should be frequently analysed; that the cows should be proved to be free from tuberculosis by the tuberculin test and from all other communicable diseases; that the milk should be handled by persons free from infection; that the milk should contain not more than 10,000 bacteria to the cubic centimetre; and that it should be not more than 12 hours old when delivered to the consumer. The conference would permit the sale of such milk raw under the label "certified" and would allow the sale raw, under the label "inspected," of milk that had been similarly produced but did not quite come up to the requirements for certification, provided that such milk came in all cases from tuberculin-tested cows and did not contain more than 100,000 bacteria to the cubic centimetre. Such milk, and only such, do these experts believe should be sold raw; all other milk should be pasteurised. The declaration of the conference is as follows: "Milk from dairies not able to comply with the requirements specified for the production of milk of Classes 1 (certified) and 2 (inspected) is to be pasteurised before being sold and then sold under the designation 'pasteurised milk.'" All milk of unknown origin shall be placed in Class 3 and shall be subjected to clarification and pasteurisation at central pasteurisation plants which shall be under the personal supervision of officers of the health department. The term "pasteurisation" is explained to mean the heating of milk to a temperature of 150° F. for 20 minutes, or 160° for ten minutes, and immediate cooling to 50°.

### *Third International Sanitary Convention of the American Republics.*

It is announced that the Third International Sanitary Convention of the American Republics will be held in the city of Mexico from Dec. 2nd to 7th next. The first convention, held in Washington in 1902, was called in compliance with resolutions relative to sanitary police adopted by the Second International Conference of American States, held in Mexico in 1892. These resolutions were accepted as the basis for the work of the first Convention and resulted in the adoption of certain sanitary and hygienic principles and the establishment of an International Sanitary Bureau at Washington. The Second International Sanitary Convention, held in Washington in 1905, assumed a more formal character than the previous one and resulted in the subscription to a "sanitary convention ad referendum," which codified all the measures destined to guard the public health against the invasion and propagation of yellow fever, plague, and cholera. This sanitary convention ad referendum has been ratified by at least nine republics, and it is provided that the governments which have not signed the present convention are to be admitted to adherence thereto upon demand. The subjects which will especially engage the attention of the third sanitary conference have already been suggested by the Third International Convention of American States held at Rio de Janeiro in 1896. One of them is the establishment and organisation in the place in South America which the conference may designate of a Bureau of Sanitary Information which will furnish to the International Sanitary Bureau already existing the necessary data to comply with recommendations relative to sanitary police. The city of Montevideo is designated as the residence of the Bureau of Sanitary Information.

### *National Sanitary Department for Cuba.*

The Provisional Government of Cuba has created a national sanitary department to meet the emergencies of yellow fever. As organised it consists of a chief sanitary officer, a national sanitary board, the necessary *personnel* for the office and the institutions under its control, a local sanitary officer for each municipality, and the necessary employees. The department is created because the municipal governments have not been able to provide sufficient funds for the support of an efficient sanitary service, nor has there been that concert of action of the municipal authorities so necessary for efficient work during the prevalence of an epidemic. There is no doubt that this nationalised sanitary service will prove of the greatest importance to Cuba, not only in protecting it from yellow fever but in improving the public health of the entire Republic.

Sept. 16th.

# Medical News.

UNIVERSITY OF OXFORD.—The following degrees in medicine have been conferred:—

*Bachelor of Medicine and Surgery.*—John Wallace, Exeter; Richard Evans, Jesus; Cuthbert Taunton Raikes, Trinity; Ernest Laurence Kennaway, New College; Edward Alfred Cockayne, Balliol; Wilfrid Wood Wells, Merton; Arthur Salusbury MacNalty, non-collegiate; and Otto Gustav Ferdinand Luhn, Christ Church.

At examinations held recently the following candidates were successful:—

FIRST M.B. EXAMINATION.

*Organic Chemistry.*—E. G. Beaumont, University; C. H. Budd, Oriel; W. Burridge, Christ Church; F. A. Hampton, New College; A. H. Southam, Christ Church; A. B. Thompson, New College; C. W. Wheeler-Bennett, Christ Church; and J. A. Wood, University.

*Materia Medica.*—H. C. Bazett, Wadham; C. F. Beevor, B.A., Magdalen; W. Burridge, Christ Church; C. B. Fenwick, Magdalen; A. D. Gardner, B.A., University; P. L. Gibson, Trinity; H M. C. Green, B.A., Wadham; N. F. Hallows, Keble; C. H. L. Harper, Wadham; S. Hibbert, University; G. W. Johnson, B A., Brasenose; E. G. Martin, B.A., New College; H. G. Morris, University; E. O'Connor, M.A., Lincoln; R. C. Ozanne, Hertford; J. F. Penson, non-collegiate; A. F. S. Sladden, B.A., Jesus; E. H. Udall, Queen's; G. H. Varley, B.A., St. John's; and W. E. Waller, University.

*Anatomy and Physiology*:—J. L. Birley, University; R. F. B. Bowes, B.A., Queen's; R. F. Bridges, B.A., University; A. R. Chavasse, Hertford; G. H. Cross, B.A., Balliol; D C. Dobell, B.A., Christ Church; P. H. C. Fowell, B.A., St. John's; N. Glover, B.A., Trinity; G. J. Z. Jessel, B.A., University; C. Newcomb, B.A., St. John's; W. J. Oliver, Oriel; A. S. Roe, Balliol; H. W. Scott-Wilson, Queen's; C. J. G. Taylor, University; W. W. Wagstaffe, New College; and R. C. Wingfield, Trinity.

SECOND M.B. EXAMINATION.

*Pathology.*—C. D. H. Corbett, B.A., University; E. P. Cumberbatch, B.A., Keble; G. R. Girdlestone, B.A, New College; B. G. Klein, B.A., Corpus Christi; S. S. Strahan, Keble; J. Wallace, B.A., Exeter; W. W. Wells, B.A., Merton; and W. C. Wigan, B.A., St. John's.

*Forensic Medicine and Hygiene.*—M. B. Baines, B.A., Exeter; C. G. Douglas, B.A., Magdalen; M. W. Flack, B.A., Keble; S. Hartill, B.A., New College; J. F. Hornsey, B.A., Wadham; B. G. Klefn, B.A., Corpus Christi; O. G. F. Luhn, B.A., Christ Church; J. Wallace, B A., Exeter; and W. W. Wells, B.A., Merton.

*Medicine, Surgery, and Midwifery.*—H. B. Billups, M.A., Worcester; E. A. Cockayne, B.A., Balliol; R. Evans, M.A., Jesus; N. Flower, B.A., Exeter; E. L. Kennaway, B.A., New College; O. G. F. Luhn, B.A., Christ Church; A. S. MacNalty, B.A., non-collegiate; C. T. Raikes, B.A., Trinity; and W. W. Wells, B.A., Merton.

M.CH. EXAMINATION.

R. Warren, D.M., New College.

FINAL HONOURS EXAMINATION, SCHOOL OF NATURAL SCIENCE.

*Physiology.*—Class I.—H. J. B. Fry, Magdalen; H. P. Newsholme, Balliol; E. L. Pearce-Gould, Christ Church; and E. W. M. H. Phillips, Jesus. Class II.—P. P. W. Andrews, University; G. W. Carte, New College; W. F. Harvey, Balliol; G. E. Neligan, Exeter; and R. O. Ward, Queen's. Class III.—C. W. Armstrong, Jesus; A. Booth, Keble; A. W. Donaldson, Hertford; and W. J. Pearson, University. Class IV.—T. B. Batchelor, University.

PRELIMINARY EXAMINATION IN NATURAL SCIENCE.

*Mechanics and Physics.*—S. M. Bose, Worcester; R. Dell, non-collegiate; A. W. Dennis, Keble; D. D. Drury, New College; R. J. Ford, Queen's; G. P. Furneaux and R. L. Gillingham, non-collegiate; H. S. H. Guinness, Balliol; H. L. Harvey, Oriel; C. Le P. T. Heaslop, non-collegiate; H. Jervis, Trinity; F. C. Lacaita, Balliol; J. T. Lattey, Christ Church; M. M. Machaya, St. John's; J. D. Mackworth, Corpus Christi; F. A. Mason, St. John's; H W. Normanton, Merton; A. G. Ogilvie, Magdalen; L. A. B. Sharpe, E. A. Sitzler, and T. O. Thompson, St. John's; F. M. Trefusis, Exeter; R. B. Turbutt, Christ Church; B. H. Walker, Queen's; G. E. Webb, non-collegiate; G. E. Whitfield, New College; W. J. Wiltshire, Pembroke; R. B. Winser, Corpus Christi; H. S. Wreford-Glanvill, Merton; W. H. Wyatt, Exeter; and J. V. Young, St. John's.

*Physics.*—J. V. Collier, Christ Church; R. C. Fairbairn, Exeter; A. Jackson, Queen's; A. Juett, Brasenose; E. W. P. Newman and J. N. Oliphant, Christ Church; M. O. Raven, Trinity; and R. Ross, non-collegiate.

*Chemistry.*—W. H. D. Acland, Christ Church; G. H. Alington and O. Barkan, Trinity; E. Benskin, St. John's; A. C. Brandon, Merton; J. V. Collier, Christ Church; G. Cranstoun, Oriel; A. A. M. Davies, University; R. Dell, non-collegiate; D. D. Drury, New College; R. C. Fairbairn, Exeter; R. J. Ford, Queen's; G. P. Furneaux and R. L. Gillingham, non-collegiate; H. S. H. Guinness, Balliol; S. D. Gurney, Wadham; D. B. I. Hallett, University; M. R. Hely-Hutchinson and J. S. Huxley, Balliol; H. Jervis, Trinity; J. L. Kathju, Exeter; J. T. Lattey, Christ Church; M. M. Machaya, St. John's; J. D. Mackworth, Corpus Christi; F. A. Mason, St. John's; E. E. Mather, Exeter; P. E Meadon, St. John's; Hon. P. A. Methuen, New College; E. W. P. Newman, Christ Church; H. W. Normanton, Merton; A. G.

Ogilvie, Magdalen; J. N. Oliphant, Christ Church; D. R. Parry-Jones, St. John's; O. G. Parry-Jones, Magdalen; Q. D. Pictor, Exeter; T. L. Price, Keble; M. O. Raven, Trinity; R. Ross, non-collegiate; L. A. B. Sharpe and E. A. Sitzler, St. John's; G. B. Tarring, Merton; T. O. Thompson, St. John's; G. E. Webb, non-collegiate; G. E. Whitfield, New College; W. J. Wiltshire, Pembroke; H. S. Wreford-Glanvill, Merton; W. H. Wyatt, Exeter; and J. V. Young, St. John's.

*Zoology.*—O. Barkan, Trinity; W. H. Bleaden, Brasenose; A. A. M. Davies, University; W. K. Flemmer, Trinity; G. T. Hebert, Christ Church; A. Jackson, Queen's; G. Meade-Waldo, Magdalen; W. H. Thornton, Trinity; T. A. Townsend, New College; and H. T. Vodden Exeter.

*Botany.*—G. E Beaumont, University; E. Benskin and H. M. Bond, St. John's; C. E. N. Bromehead, Merton; W. A. Cooke, Worcester; C. F. Cranswick, Exeter; V. C. H. Dearden, Wadham; A. W. Dennis, Keble; D. B. I. Hallett, University; J. S Huxley, Balliol; A. Juett, Brasenose; N. S. Lucas, New College; J. C. Moulton, Magdalen; W. H. Ogilvie, New College; R. W. Reed and A. H. Southam, Christ Church; T. A. Townsend, New College; J. F. Venables, Magdalen; H. T. Vodden, Exeter; C. W. Wheeler-Bennett, Christ Church; S. B. White, Keble; J. A. Wood, University; and J. V. Young, St. John's.

UNIVERSITY OF DURHAM.—At examinations for the degree of Bachelor in Medicine held in September the following candidates satisfied the examiners:—

FIRST EXAMINATION.

*Elementary Anatomy and Biology, Chemistry and Physics.—First-class Honours:* John Hamilton Barclay and Michael Brennan, College of Medicine, Newcastle-upon-Tyne. *Second-class Honours:* William Hudson, College of Medicine, Newcastle-upon-Tyne. *Pass List:* Joseph Jopling Brown and Eleanor Walkinshaw, College of Medicine, Newcastle-upon-Tyne.

*Chemistry and Physics.*—John Bain Alderson, Ronald Greig Badenoch, Richard Murray Barrow, Roger Errington, David Farquharson, Sarah Louisa Green, Thomas Albert Hindmarsh, Laurence Heber Warneford Iredale, Frank Hutchinson Kennedy, John Lumb, Benjamin Bell Noble, Charles O'Hagan, and Arthur Hyde Wear, College of Medicine, Newcastle-upon-Tyne.

*Elementary Anatomy and Biology.*—Louis Ernest Sei le Gellé, Edinburgh Medical School; Harold Llewellyn James, Guy's Hospital; and Russell Vyoyan Steele, University College, London.

SECOND EXAMINATION.

*Anatomy, Physiology, and Materia Medica.*—Oscar Frederick Don Airth, Isaac Bainbridge, Helen Grace Clark, Robert Vickers Clayton, Bloomfield George Henry Connolly, John Hare, Samuel Littlewood, George Cuthbert Mura M'Gonigle, and John Howard Owen, College of Medicine, Newcastle-upon-Tyne; Madeline Rosa Shearburn and Matilda Ann Sinclair, London School of Medicine for Women; Eric Hemingway Shaw and Carl Johan Valfrid Swahnberg, College of Medicine, Newcastle-upon-Tyne; Olivia Nyna Walker; London School of Medicine for Women; and Stanley Worthington and James Carruthers Young, College of Medicine, Newcastle-upon-Tyne.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore (University of Maryland):* Dr. Charles W. McElfresh has been appointed to the chair of Medicine.—*Bologna:* Dr. Carlo Comba has been promoted to the Ordinary Professorship of Children's Diseases.—*Chicago (Rush Medical College):* Dr. Norman M. Harris and Dr. Horace T. Ricketts have been appointed Assistant Professors of Pathological Anatomy and Bacteriology.—*Cracow:* Dr. Alexandre Rosner has been promoted to the chair of Midwifery and Gynæcology, vacant by the death of Professor Jordan.—*Greifswald:* Dr. Paul Römer, first assistant to Professor Hess of Würzburg, has been offered the post of Director of the University Ophthalmic Clinic in succession to Dr. L. Heine who is going to Kiel.—*Lemberg:* Dr. K. Kwietnewski, formerly professor in the University of Pisa, has been appointed to the chair of Comparative Anatomy.—*Montreal (McGill College):* Dr. Armstrong has been appointed to the chair of Surgery.—*Moscow:* Dr. Alexinski has been appointed Extraordinary Professor of Surgery.—*Vienna:* Dr. Hugo Salomon has been recognised as *privat-docent* of Medicine.

DEATH OF A CENTENARIAN.—The *Times* of Sept. 18th states that Mrs. Bricknell died at Cheltenham on Sept. 16th. She was born on August 16th, 1806, and was therefore 101 years old. Mrs. Bricknell retained her faculties to the last and was present at church quite recently.

FIRE ENGINE FOR BAGNALL HOSPITAL.—The provision of fire-extinguishing appliances for hospitals is an absolute necessity in view of the helplessness of the inmates, and the governors of such institutions may be relied upon to realise their responsibilities in this connexion. The North Staffs Joint Hospital Board has just procured a Merryweather manual fire-engine for the small-pox hospital at Bagnall. This engine is suitable for use by four men and is equipped with all necessary appliances for working, including an ample supply of delivery hose. In the event of an outbreak of fire at the hospital this engine should prove very valuable.

APOTHECARIES' HALL OF IRELAND.—At a meeting of the court of directors the following were elected examiners for the ensuing year:—Chemistry and Physics: Professor Hugh Ryan, D.Sc., F.R.U.I.; and J. J. A. O'Sullivan, L.R.C.P. & S. Irel., D.P.H. Biology: Professor D. J. Coffey, M.D., F.R.U.I.; and John Knott, M.D. Dub. Anatomy: Professor A. Fraser, M.D. Glasg., F.R.C.S. Irel.; and P. J. Fagan, F.R.C.S. Irel. Physiology: Professor D. J. Coffey, M.D., F.R.U.I.; and John Knott, M.D. Dub. Medical Jurisprudence: W. Fottrell, L.R.C.P. & S. Irel.; and J. C. M'Walter, M.A. R.U.I., M.D. Brux., D.P.H. Pharmacy: J. A. Walsh, L.R.C.P. & S. Edin.; J. C. M'Walter, M.A. R.U.I., M.D. Brux., D.P.H.; and E. F. Hanrahan, M.B., B.Ch. R.U.I. Materia Medica: John Evans, L.R.C.S. Irel.; and John T. D. Crinion, L.R.C.P. & S. Irel. Pathology: J. F. L. Keegan, F.R.C.S. Irel.; and R. J. Rowlette, M.D. Dub. Hygiene: Sir C. Cameron, C.B., M.D. R.U.I.; and C. J. Powell, F.R.C.S. Irel., D.P.H. Ophthalmic Surgery: H. C. Mooney, F.R.C.S. Irel.; and F. Odevaine, F.R.C.S. Irel. Medicine: John Marshall Day, M.D. Dub., D.P.H.; and John O'Donnell, M.B., B.Ch. R.U.I. Surgery (appointed by the General Medical Council): Sir Lambert Ormsby, M.D. Dub., F.R.C.S. Irel.; and Professor F. Conway Dwyer, M.D. Dub., F.R.C.S. Irel. Midwifery and Gynæcology: Gibbon Fitzgibbon, M.D. Dub.; and R. J. Fleming, M.D. Dub.

PROPOSED LABORATORIES FOR THE PREPARATION OF ANTITOXIN SERUM.—At a meeting of the Metropolitan Asylums Board on Sept. 14th a letter was read from the Local Government Board stating that it was willing to assent to the erection and fitting up of a central laboratory for the preparation of antitoxin serum and for bacteriological work, but it was advised that it would be possible to provide what was required at a less cost than £9090, for which the managers had applied for sanction, and it would not be prepared to authorise a total expenditure on the works of more than £6500. The Board was further advised that a saving of not less than £1000 might be effected if the laboratory was erected on the Belmont site at Sutton instead of at Peckham and that the balance of administrative advantage was distinctly in favour of placing the laboratory on that site. On these and other considerations the Board adhered to the suggestion as to the site made in its letter of May 2nd, and it would, therefore, not be prepared to assent to the placing of the proposed buildings at Peckham. Having regard to these views the Asylums Board adopted a recommendation submitted by the hospitals committee agreeing to the alteration of site and authorising the preparation by the architects, Messrs. T. W. Aldwinckle and Son, of an amended scheme.

ST. BARTHOLOMEW'S HOSPITAL AND MEDICAL SCHOOL.—During the past year the following changes have taken place in the teaching staff: Dr. Christopher Addison, who was formerly dean of Charing Cross Medical School and professor of anatomy at the University College, Sheffield, has been appointed lecturer and senior demonstrator of anatomy. Mr. W. D. Harmer has resigned the assistant surgeoncy and has been appointed surgeon in charge of the department for diseases of the throat and nose. Mr. F. A. Rose has been appointed assistant surgeon for diseases of the throat and nose. Mr. G. E. Gask has been appointed assistant surgeon and teacher of clinical surgery. Dr. W. S. A. Griffith has been elected physician-accoucheur with charge of out-patients and will give part of the clinical lectures on diseases of women. Dr. H. Williamson has been elected assistant physician-accoucheur and clinical lecturer in midwifery. Dr. J. A. Willett has been appointed demonstrator of midwifery. Mr. C. E. West has been elected assistant aural surgeon. Mr. C. Gordon Watson has been appointed surgical registrar and has resigned the demonstratorship of anatomy. Mr. L. B. Rawling has been appointed demonstrator of operative surgery. Mr. R. C. Ackland has been appointed dental surgeon and Mr. F. Coleman assistant dental surgeon. Mr. R. C. Elmslie has been appointed demonstrator of pathology and Dr. H. Pritchard and Mr. H. G. Ball have been elected junior demonstrators of pathology. Dr. H. G. Adamson has been appointed chief assistant in the department for diseases of the skin. Dr. C. M. H. Howell has been elected junior demonstrator of physiology and Mr. T. S. Lukis and Mr. C. T. Neve have been appointed assistant demonstrators of biology.—The following awards of scholarships and prizes have been made during the year 1906-07: Lawrence scholarship, G. T. Burke and J. C. Mead (equal); Brackenbury medical scholarship, E. A. Cockayne; Brackenbury surgical scholarship, P. L. Giuseppi; Matthews Duncan Prize, R. B. S. Sewell; Kirkes scholarship and gold medal, G. T. Burke; Walsham prize, P. L. Giuseppi; Bentley prize, H. J. Cates; Hickens prize, S. Dixon; Wix prize, A. W. J. Cunningham; Senior scholarship, A. P. Fry; Junior scholarship, R. G. Hill, C. D. Kerr, and J. W. Trevan (equal); Sir George Burrows prize, A. W. G. Woodforde; Skynner prize, P. L. Giuseppi; Harvey prize, K. Bremer; Treasurer's prize, R. G. Hill; Foster prize, W. C. Dale; and Shuter scholarship, R. R. Armstrong.

A HOLIDAY course of hygiene for teachers in secondary schools will be held at Göttingen under the supervision of E. von Esmarch from Oct. 7th to 12th. The programme is as follows:—First day, morning—introduction, aims and methods, air and water; afternoon—visit to the gas works and electric power stations. Second day, morning—hygiene of the school building, heating; afternoon—visit to the Physics Institute. Third day, morning—ventilation, lighting, seating; afternoon—visits to the gymnasium and to a primary school. Fourth day, morning—hygiene of the teaching staff and of instruction; afternoon—visit to the girls' high school. Fifth day, morning—causes, diagnosis, and prevention of school diseases; afternoon—practical demonstration of disinfection, visits to the university gymnasium and the town baths. Sixth day, morning—visit to Cassel and inspection of hygienic appliances there.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 6, Catherine street, Strand, London, W.C. There were present: Dr. F. de Havilland Hall (in the chair), Dr. F. S. Palmer, Dr. H. A. Sansom, Dr. J. W. Hunt, Dr. M. Greenwood, Dr. W. Knowsley Sibley, Dr. F. J. Allan, Dr. St Clair B. Shadwell, Mr. H. P. Symonds, Mr. J. Brindley James, and Dr. J. B. Ball. The accounts presented showed that during the first eight months of this year the operations of the society had been greater than in any similar period of its working. Since Jan. 1st last nearly £9000 had been distributed to the members in the shape of weekly sick pay and good cash bonuses had been given to those who reached the limiting age of 65 years; yet the funds, which now amounted to over £200,000, had received a substantial increase, as the annual income of the society was considerably larger than its outgo. Prospectuses and all particulars can be had on application to Mr. F. Addiscott, secretary, 33, Chancery-lane, London, W.C.

GROCERY AND ALLIED TRADES ANNUAL EXHIBITION.—The annual exhibition of the grocery and allied trades was opened in the Agricultural Hall, Islington, on Sept. 23rd. The exhibition was a very large and comprehensive one and of course presented several points of interest from a medical standpoint. The food exhibits were on a large scale and comprised almost everything in the tinned-food line. The bakery exhibit was a really remarkable one and showed in a most instructive manner the great progress that has been made in the baker's art. Machinery has to a large extent displaced manual labour in the manufacture of bread, at least in the big bakeries, with probably corresponding advantages to the consumer from the sanitary point of view. The Wilts United Dairies Co., Limited, manufacturers of condensed milk, afforded a practical demonstration of the entire process which milk goes through before it is placed in tins and retailed as condensed milk. Up to a recent period the British condensed milk trade was wholly in the hands of foreigners, and whatever may be the opinion held as to the merits of condensed milk as a food for children it is satisfactory to know that English makers are capable of turning out a product equal to that of foreign manufacturers. Amongst other exhibits of interest may be mentioned those of the Vinolia Company; Field, soap, &c.; Pears' soap, &c.; Caley, chocolate, &c.; Bendorf's Cocoa; Plasmon Co.; and J. A. Sharwood and Co., crystallised fruit. A novel exhibit shown by this last-named company consisted of flowers beautifully made in crystallised sugar. The South African Food Products Co. had an exhibit similar to that shown in the Horticultural Hall, consisting of preserved fruits and wines, berry wax, and calabash pipes. Horlick and Co., makers of malted milk, had a good display. Brand and Co. showed samples of all their well-known products. Armour and Co. had a good exhibit. In fact, all the large firms in any way connected with the grocery and allied trades were showing at the Agricultural Hall, but lack of space forbids a more lengthy account of a very full and instructive exhibition.

BRISTOL MEDICAL SCHOOL.—The annual distribution of prizes in connexion with the Faculty of Medicine of University College, Bristol, will take place in the large hall of the College on Oct. 1st. The prizes will be distributed by Professor Francis Gotch, of the University of Oxford. The annual dinner of the Bristol Medical School, at which Mr. J. H. Parsons, F.R.C.S. Eng., will preside, will take place on the same evening at the Royal Hotel, College Green.

LONDON MEDICAL EXHIBITION.—The Third London Medical Exhibition will be held in the new hall of the Royal Horticultural Society, Vincent-square, Westminster, from Oct. 7th to 11th, from 11 A.M. to 7 P.M. daily. The promoters are putting forth efforts to make the forthcoming exhibition an even more decided success than in previous years. It is understood that the number of exhibitors this year will considerably exceed that of last year. The secretary is sending free tickets of admission to every medical man within a 20-mile radius of London. Application should be made to *The British and Colonial Druggist* offices, 44, Bishopsgate Without, E.C.

VACCINATION FEES IN ESSEX.—At a meeting of the Maldon (Essex) guardians held on Sept. 11th it was stated that the public vaccinators agreed to the new scale of fees so far as the fee of 2*s.* 6*d.* for each case performed at the same house within 24 hours after the first case, but they declined to agree to the alteration in the mileage from 5*s.* to 4*s.* for the first two miles, from 7*s.* 6*d.* to 6*s.* 6*d.* for between two and four miles, and from 10*s.* to 8*s.* 6*d.* after four miles. The matter was referred to the Local Government Board.

ROYAL SOCIETY OF MEDICINE.—The first meeting of the Obstetrical and Gynæcological Section of the Royal Society of Medicine will be held on Thursday, Oct. 10th, at 7.45 P.M. As the agenda shows, this meeting should prove exceptionally interesting. There will be some business connected with the formation of the section, and the paper of the evening, will be on the Physiological Action of the Placenta, by Professor W. E. Dixon and Dr. F. E. Taylor. Future meetings of the section will be held on the second Thursday in each month (except August and September) at 7 45 P.M. Additional meetings may be held from time to time and they will be specially announced.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—On Sept. 21st at Goleen, Co. Cork, the inhabitants of the village presented a wedding gift to Mr. T. Neville, L.R.C.P. & S. Edin., and Mrs. Neville, which took the form of a suite of hall furniture of carved oak, consisting of hall-stand, table, settee, chairs, hall-lamp, hall-clock, and pictures, the latter being views of Dorset chosen to remind Mrs. Neville of her native England. Mrs. Neville is greatly respected by the inhabitants of Goleen and especially by the poor.—Mr. Thomas Gilbert Prosser, M.R.C.S. Eng., L.S.A., J.P., of Monmouth, who for 20 years has been civil surgeon in charge of the Royal Monmouthshire Engineers (Militia), has been presented with a silver coffee service and salver, suitably inscribed, by the past and present officers of the regiment.

DONATIONS AND BEQUESTS.—The late Mr. Samuel Vallentine has bequeathed £1000 to each of the following hospitals for the purpose of endowing a "Jacob and Rachel Vallentine" bed—viz., the London Hospital, St. Peter's Hospital for the Relief of Stone, Charing Cross Hospital, King's College Hospital, Guy's Hospital, St. Thomas's Hospital, the Free Cancer Hospital, and the Metropolitan Free Hospital, Kingsland-road. Such sum as the trustees of his will shall determine has also been left to the Hospital and Home for Incurable Children, Maida Vale, for a "Jacob and Rachel Vallentine" cot.—Under the will of Mr. S. Odames of Leicester £2000 are bequeathed for the endowment of four cots in the Leicester Children's Hospital, £1000 for providing a dispensary, and a like sum to found a cripples' guild.—An anonymous benefactor has promised a donation of £1000 to enable the committee of the Infants' Hospital to begin its work at the new premises, Vincent-square, Westminster, free from debt.—The Royal Dental Hospital of London has received £250, less legacy duty, from the executors of the will of the late Mr. J. L. Toole.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Davidson, G. E., M.B., B.C. Cantab., has been appointed Medical Officer to the Post Office, No. 6 Albury District of the Guildford Union, Public Vaccinator, and Certifying Factory Surgeon

Day, W. F. L., M.B, B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Parndon, Nazeing, and Roydon Districts of the Epping Union.

Evans, R. E., M.D., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Newcastleton District of the county of Roxburgh.

Hilton, Albert, L.S.A., has been appointed Medical Officer of Health to the Hurst District Council, Ashton-under-Lyne.

King, D. Barty, M.D., M.R.C.P. Edin., has been appointed Examiner in Medicine and Clinical Medicine at the University of St. Andrews.

March, Geoffrey Colley, L.R C.P. Lond., M.R.C.S., has been appointed a District Medical Officer by the Dorchester (Dorset) Board of Guardians.

Riggall, Robert Marmaduke, L.R.C.P., has been appointed Third Assistant Medical Officer to the Devon County Asylum, Exminster.

Turnor, P. W., L.R.C.P., M.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Penkridge District of the county of Stafford.

Van Buren, Asa Claude Ali, M.D., B.S. Lond., L.R.C.P., M.R C.S., has been appointed Honorary Anæsthetist to the Torbay Hospital, Torquay.

Vosper, Sydney, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon at the Metropolitan Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

Ayr District Asylum.—Junior Assistant Physician, unmarried. Salary £120, with board, apartments, and laundry.

Birkenhead Borough Hospital.—Junior Resident House Surgeon. Salary £80 and fees.

Birmingham and Midland Free Hospital for Sick Children.—Resident Medical Officer and Resident Surgical Officer for six months. Salary of each officer at rate of £60 per annum, rising to £80, with board, washing, and attendance.

Bradford Poor-law Union Hospital and Workhouse.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

Brompton Hospital Sanatorium.—Assistant Medical Officer. Salary £150, with board, lodging, and washing.

Buxton, Derbyshire. Devonshire Hospital.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

Cambridge, Addenbrooke's Hospital.—House Physician. Salary £65 per annum, with board, residence, and laundry.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistant.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—Pathologist. Salary 100 guineas per annum. Also Two House Physicians for six months. Salary at rate of £50 per annum, with board, washing, and residence.

Clayton Hospital and Wakefield General Dispensary.—Two House Surgeons, unmarried. Salary of Senior £120 and Junior £80 per annum, with board, lodging, and washing in each case

Croydon General Hospital.—Senior and Junior House Surgeons. Salary of former £105, and of latter £60, with board, laundry, and residence in each case.

Durham County Hospital.—House Surgeon. Salary £120, with board and lodging.

Eccles and Patricroft Hospital.—House Surgeon, unmarried. Salary £70 per annum, with board and washing.

Edinburgh, Royal Edinburgh Asylum, Morningside.—Fourth Assistant Physician.

Farringdon Dispensary and General Lying-in Charity, 17, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Dental Surgeon.

Gloucester, General Infirmary and the Gloucestershire Eye Institution.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

Gordon Hospital, Vauxhall Bridge-road, S.W.—Surgeon.

Hospital for Consumption and Diseases of the Chest, Brompton. —Resident House Physicians for six months. Honorarium £25.

Hospital for Sick Children, Great Ormond-street, London, W.C.—House Surgeon, Assistant Casualty Medical Officer, and House Physician, unmarried, all for six months. Salary £20, with board and residence in the hospital in each case.

Hospital for Women, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum. Also Pathologist and Curator of Museum. Honorarium 50 guineas per annum.

Hull City and County Lunatic Asylum.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, and attendance.

Jersey Dispensary.—Resident Medical Officer. Salary £120, with furnished quarters and attendance.

Laboratories of Pathology and Public Health, London, W.—Assistant Pathologist. Commencing salary at rate of £150 per annum, rising to £400.

Lambeth Infirmary, Brook-street, Kennington-road, S.E—Junior Assistant Medical Officer. Salary £100 per annum, with board, residence, &c.

Leicester Infirmary.—House Physician. Salary £100 per annum, with board, lodging, and washing.

Lewes Dispensary and Infirmary and Victoria Hospital.—Resident Medical Officer. Salary £120 per annum, with apartments, board, coal, gas, washing, and attendance.

Liverpool Eye and Ear Infirmary, Myrtle-street.—House Surgeon. Salary £80 per annum.

Liverpool Stanley Hospital.—Second Honorary Anæsthetist.

London Hospital, Whitechapel, E.—Surgeon Dentist.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.

Manchester Royal Infirmary.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

Manchester, University of.—Senior Demonstrator in Physiology. Salary £150, rising to £200 per annum.

Metropolitan Hospital, Kingsland-road, N.E.—Assistant Surgeon.

Newport and Monmouthshire Hospital.—Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

Nottingham General Hospital.—Assistant House Surgeon. Salary £60. with board, lodging, and washing.

Paisley, Riccartsbar Asylum.—Assistant Resident Medical Officer. Salary £120 per annum, with board and apartments.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Port Elizabeth, Provincial Hospital.—Assistant House Surgeon, unmarried. Salary £225, rising to £300, with board and residence.

Portsmouth, Royal Hospital.—House Physician for six months. Salary at rate of £50 per annum, with board, &c.

Prince of Wales's General Hospital, Tottenham, London, N.—House Surgeon and House Physician. Salaries £75 per annum each. Also Junior House Surgeon and Junior House Physician. Salaries £40 per annum each. With residence, board, and laundry in each case; all for six months.

Royal Eye Hospital, or Royal South London Ophthalmic Hospital, Southwark, S.E.—House Surgeon for six months. Salary £52 10s. per annum, with board and residence.

Salford Royal Hospital.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

Seamen's Hospital Society, Greenwich, S.E.—For Dreadnought Hospital: Two House Physicians and Two House Surgeons for six months. Salary at rate of £50 per annum, with board, residence, and washing. For Branch Hospital, Royal Albert Dock, E.: Senior House Surgeon for six months. Salary at rate of £75 per annum and additional £25 per annum for acting as Registrar, &c., with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Throat Hospital, Golden-square, W.—Senior Clinical Assistants.

Valkenberg Asylum, near Cape Town.—Assistant Medical Officer, unmarried. Salary £250 per annum, rising to £300, with board, washing, and lodging.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board and lodging.

West London Hospital, Hammersmith-road, W. — Assistant Physician.

Western General Dispensary, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

Winsley, near Bath, Three Counties (Gloucester, Somerset, and Wilts) Sanatorium for Consumptives.—Resident Medical Officer, unmarried. Salary £200, rising to £300.

Worcester County and City Asylum.—Third Assistant Medical Officer, unmarried. Salary £140, rising to £160, and all found.

The Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Portrush, in the county of Antrim.

# Births, Marriages, and Deaths.

## BIRTHS.

Caley.—On Sept. 19th, at 24, Upper Berkeley-street, W., the wife of H. A. Caley, M.D., F.R.C.P., of a son.

Winton.—On Sept. 21st, at Worple-road, Wimbledon, the wife of W. B. Winton, M.A., M.D., of a daughter.

## MARRIAGES.

Jones—Ensor.—On Sept. 17th. at St. Mary's, Prittlewell, Frank Silva Jones, M.B., M.R.C.S., to Kathleen, younger daughter of Mr. and Mrs. F. G. Ensor of Westcliff, Essex.

Travers—Kinross.—On Sept. 19th, at the Church of St. Alban, Teddington, by the Vicar and the Rev. H. E. Eardley, M.A., vicar of St. John's, Tunbridge Wells, Ernest Frank Travers, M.D., of 22, Upper Phillimore-place, Kensington, fifth son of the late William Travers, M.D., F.R.C.S., and of Mrs. Travers, of 2, Phillimore-gardens, Kensington, to Edith Mary, only daughter of the late John Kinross of Dundee.

## DEATH.

Gould.—On Sept. 22nd, at Hatherleigh, Devon, John Gould, J.P., M.R.C.S., aged 85 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

### MISLEADING PRESS CUTTINGS.

IN our issue of Sept. 7th under this heading we called attention to the fact that the *Baker's Record*, possibly misled by a press-cutting agency, had taken us severely to task for the antiquity of our views concerning the methods of baking, having assumed for that purpose that a communication to our columns printed on August 22nd, 1829, and reprinted under the title "Looking Back," was a recent editorial article. Now it is the turn of *Milling*. In the issue of *Milling* of Sept. 14th the editor regrets that we should now be opening a correspondence on the use of alum in bread, inasmuch as "the day of alum in British bakeries passed away a full generation ago." THE LANCET took vigorous steps to insure that passing away some three generations ago, and we think that the editor of *Milling* might well let his numerous readers know that he has done us an injustice.

### "LOATHSOME BED STUFFING."

*To the Editors of* THE LANCET.

SIRS,—Your article on Sept. 7th, p. 727, on the above subject is a very opportune one in view of the diseases we are having imported into this country and which the authorities profess they do not know the origin of. This being a free trade country we do not have the easy means of knowing where goods originally come from they have in a protected country. Rags come to this country from Russia through Germany, and we know that cerebro-spinal meningitis has had for generations a habitat there. What more likely than that this is the medium of transit? We know that during the late war these rags could not be had; they are again on the market. Why, I have often been asked, if the rags were infected, have no troubles been traced to the factory where they were being torn up? Simply because in the process of teasing there is a natural disinfectant given off. This, however, is absent when one is lying on a bed, and the human system is also more susceptible to disease at night than through the day. Also, and this is important, you may not inhale sufficient microbes in one night to be deadly, but continue the process and see the result. Your correspondent "R. B. K." describes the process of making a new bed (?) and it is certainly bad enough, but he is apparently not aware of a worse evil in the trade—viz., brokers buy at sales old beds and simply put new cases on and sell them for new. In Glasgow recently all the old bedding from a disused poorhouse was sold by auction. Fleas are quite common amongst unwashed flocks, but I must speak respectfully of them as they do not bite me, but I cannot say that they would not carry infection to me on their feet (see THE LANCET, July 27th, p. 216, and Sept. 14th, p. 779). If ever there was a case calling for Parliamentary intervention in the interests of public health surely this is it.

I am, Sirs, yours faithfully,

Sept. 16th, 1907. A. B. DEWAR.

*To the Editors of* THE LANCET.

SIRS,—I have read with great interest "R. B. K.'s" letter descriptive of the "cleaning" of bedding; it is certainly a case typical of hundreds in which, to the uninitiated, everything seems clean and wholesome. Similar deception prevails very largely, I am sorry to say, in the new bedding trade where a clean tick covers the filthy flock, already so graphically and correctly described in your columns, and dealers have the audacity to label these death-traps "sanitary bedding."

I am, Sirs, yours faithfully,

Sept. 16th, 1907. ISIS.

### THE MEDICAL BADGE.

*To the Editors of* THE LANCET.

SIRS,—In support of Dr. J. Dulberg's letter I beg to remind your readers that in 1903 when a commercial traveller in professional attire supplanted an eminent surgeon in attendance on an accident in a Midland town I wrote suggesting a distinguishing badge for medical men and inclosed illustrations that would be definite to the public, accurately descriptive to fellow medical men, and not at all repulsive to the wearer, but no one followed on and the matter ended. Since then I met with occasion for such a mark. I was standing on the platform at Charing Cross terminus when one of two young girls fainted near me, and being the only medical man present, so far as I know, I took charge and had her removed to the waiting-room, where quite half a dozen gentlemen in frock coats and silk hats came up at intervals, felt her pulse, examined her pupils, and asked questions. Wishing to get away, I inquired of each whether he was a medical man and received a negative reply. In these circumstances I remained on duty until the patient recovered, but it was extremely distasteful to me to be subjected to such interferences. Had there been any recognised badge should certainly have stuck it in my coat or hat to avert the attentions of these amateur medical practitioners.

I am, Sirs, yours faithfully,

Knightwick, Worcs., Sept. 16th, 1907. JOHN GOOD.

*** Mr. Good incloses coloured illustrations of his proposed badge. It consists of a shield charged with a Greek cross. This and the shield are to be coloured differently for the different qualifications or for the positions held by the wearer. The cross is also charged with a rose, thistle, or shamrock.—ED. L.

### ENGLISH AS TRANSLATED FROM THE FRENCH.

WE have received from an esteemed correspondent a circular dealing with a purgative medicine which shows very well the pitfalls into which a translator may be led by relying solely on a dictionary. It reminds us of the schoolboy who rendered "He sealed it with his own seal" by "Sigillavit suâ propriâ phocâ."

> Les pastilles auraix sont le seul médicament guérissant la constipation et les affections qui en dérivent. C'est également le seul laxatif agréable à prendre qui n'irrite ni ne congestionne l'intestin, tout en donnant des selles abondantes, sans jamais de coliques.
>
> The pastilles auraix are the only medicament healing the constipation and the affections from it descend. It is the only laxative agreable to take who not incense, and not congestion, the entrails and giving plentiful saddle and never cholic.

### THE CONTROL OF HÆMORRHAGE IN BULLET WOUNDS OF THE LUNGS BY AMYL NITRITE.

Dr. Ernest A. Sweet, in the August number of the *Military Surgeon*, Pennsylvania, advocates the use of amyl nitrite in controlling hæmorrhage in bullet wounds of the lungs. Dr. Sweet has given the drug an extended trial and has succeeded in checking hæmorrhage in every case but one, excepting those cases which proved fatal from rupture of aneurysmal dilatation, causing suffocation of the patients. Since nearly one-half of the men killed in battle succumb from penetrating wounds of the chest followed by hæmorrhage as an immediate and serious complication, the introduction of a satisfactory method of treatment is highly important. The administration of amyl nitrite by inhalation of five minims in the form of glass capsules should differ in no respect from the method adopted in the treatment of angina pectoris and asthma. Dr. Sweet recommends that if bleeding fails to cease after the physiological action of the drug has been produced and maintained for several minutes the administration of the drug should be discontinued, as success is not likely to result.

### EAR PLUGS.

*To the Editors of* THE LANCET.

SIRS,—In answer to "F. G." I recommend Hawksley's Antiphones, or sound deadeners. These plugs, fitted into the external ear, can be worn day or night by those for whom the noise makes study or rest impossible. They have been much used by the Services during big gun or rifle practice, and by sportsmen who fear gun-deafness.

I am, Sirs, yours faithfully,
M.B.

*** We have received specimens of the antiphones from Mr. T. Hawksley, 357, Oxford-street, London, W. They are composed of wax and wool. In cold weather the wearer is instructed to warm them by the hand when they can be easily shaped into a cone and moulded into the external ear by the finger. The price is 3*s*. 6*d*. per pair. We have had letters from medical correspondents advocating the employment of ear plugs in the circumstances described by "F. G.," but we take it that he wants details of a particular apparatus and not recommendations of their use.—ED. L.

### AN APPEAL.

Dr. Herbert A. Smith writes to us on behalf of the wife of a medical man who has been reduced to great poverty owing to the mental failure of her husband who was for some years in practice. He is now under care but his wife has been left with six children and very scanty means. The British Medical Benevolent Fund has granted her some temporary assistance and it is now proposed to place her in a small business, while a friend who keeps a school has offered to board and educate several of the children for a nominal fee. Dr. Herbert Smith is willing to act as treasurer of a fund for her relief and will be happy to send details to anyone who may care to help. Dr. Herbert Smith's address is The Acacias, Uxbridge-road, West Acton, W.

### SECOND-HAND BOTTLES.

*To the Editors of* THE LANCET.

SIRS,—Although my opinion as a bottle manufacturer may be considered biased, nevertheless I venture to give vent to my surprise that no steps have ever been taken to protect the public against the pernicious use of second-hand medicine bottles. Sanitary authorities, who usually are so keen at ferreting out evils, appear to close an indulgent eye to this pernicious practice. Old used bottles, some of them having been the receptacle of poisonous chemicals which crystallise and never can be thoroughly washed out, become the prey of the rag and bone picker, who subsequently sells them to a bottle dealer, who in turn subjects them to an apology for cleaning in surroundings which are anything but salubrious. The greatest surprise, however, I must express that the very persons who should know better—namely, doctors —buy such second-hand bottles because they are a few pence cheaper than new bottles. Some doctors buy these bottles in the full knowledge that they are second-hand; others, again, may do so in ignorance, the bottles having been mixed with new ones by dishonest dealers. I think that so powerful a journal as yours should enter into a vigorous campaign against the use of second-hand bottles of any description whatsoever.

I am, Sirs, yours faithfully,
Holborn, E.C., Sept. 23rd, 1907. O. A. PFEIFER.

### DEATH FROM AN ESCAPE OF COAL GAS (?).

*To the Editors of* THE LANCET.

SIRS,—I should very much like your opinion upon a case recently the subject of an inquest. Deceased was found dead in bed at 7 A.M.; he was in his nightshirt, a sheet partially covering his legs, and he had a book by his side on the bed. The room smelt strongly of gas and the one gas burner, which was about seven feet from his head, was turned on; there was no tubing attached to it. The window was shut and the back of the register was closed; there was no covering over the keyhole of the door and there was a space between the bottom of the door and the oilcloth of one-third of an inch with no mat.

A penny-in-the-slot meter was in use and was empty. It is believed, and so far as possible was proved, that less than one pennyworth of gas was in the meter when he went to bed. He might have got up after midnight, gone downstairs and along a passage, and put more pennies in the meter. He had never done so before and the landlord believes it would have been impossible without rousing the household. The cubic capacity of the room was about 950. One pennyworth of gas, which would have been about four hours in escaping, would be 25 feet. This would give about 2½ per cent. of gas in the atmosphere of the room. Would this produce death? The verdict of the jury was "Accidental death caused by an escape of gas."

I am, Sirs, yours faithfully,
Sept. 21st, 1907. M. C. W.

⁂ We do not think that a proportion of 2½ per cent. of coal gas in the atmosphere of a bedroom would destroy life; that is to say, if the coal gas contained only the usual proportion of carbon monoxide —i.e., about 7 per cent. But the proportion of CO in coal gas varies much and the present fashion of "enriching" ordinary coal gas tends to increase the amount of CO. Our correspondent gives us no information as to the composition of the gas. It must be remembered also that the slot machine may have delivered more gas for a penny than it was estimated to deliver.—ED. L.

◆

*F. I. J.*—We cannot answer our correspondent quite fully. THE LANCET was born in a hurry into a world that was hardly ready to receive it, and its very masculine mother was quite possibly ignorant of the proper steps to take to nurture the infant. The first number appeared on Sunday, Oct. 5th, 1823. It consisted of 36 demy octavo pages and was printed and published by A. Mead at 201, Strand, opposite St. Clement's Church. By the second number the printer and publisher was changed, the name being now given as C. R. Clement, but the same address is used. The reason for the change may have been that the first printer and publisher became timid, for a promise of revelations concerning the manners of a certain minister, which was made in the first number, was very faithfully redeemed in the second number. The third and fourth numbers were printed at 21, Great New-street, by C. R. Clement, and published at 201, Strand, without a publisher's name. By the fifth number a further change had taken place; the printer remained unaltered but the office of issue was now 4, Catherine-street, Strand, no publisher's name being given. The sixth, seventh, and eighth had the same imprint as the fifth, but the ninth number was printed and published by J. Ouwhyn, at 4, Catherine-street, Strand. The address of J. Onwhyn, who was the father of Thomas Onwhyn, the humorous artist, is given in the "National Dictionary of Biography" as 3, Catherine-street, Strand; we like to think that his early connexion with ourselves enabled him to enlarge his premises.

*Belfast.*—There is no one book on the subject. Our correspondent should consult a work on medical electricity, such as "Medical Electricity," by H. Lewis Jones, M.D., fifth edition (London; H. K. Lewis); or "A Manual of Practical Medical Electricity," by Dawson Turner, M.D., fourth edition (London: Baillière, Tindall, and Cox). The process is painful and only about 10 to 20 hairs can be removed at one sitting. The amount of scarring depends upon the skill of the operator.

*Swiss.*—Our correspondent is advised to consult his usual medical attendant.

*Anglo-Indian.*—Our correspondent has omitted to inclose either name or address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

**THURSDAY** (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**THURSDAY** (3rd).—NORTH-EAST LONDON CLINICAL SOCIETY (Prince of Wales's Hospital, Tottenham, N.).—4.15 P.M.: Opening Address:—Dr. H. White: The Various Conditions causing Enlargement of the Liver.

**FRIDAY** (4th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—8.30 P.M.: Annual Presidential Address:—Mr. R. Lake: The Relationship of Disease of the Ear, Nose, and Larynx to General Medicine.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. G. Little: Clinique. (Skin.)

**TUESDAY** (1st).—POST-GRADUATE COLLEGE (West London Hospital Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. H. Campbell: Clinique. (Medical.)

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

**WEDNESDAY** (2nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. J. Berry: Clinique. (Surgical.)

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. F. Taylor:

Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

**THURSDAY** (3rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—4 P.M.: Opening Lecture:—Dr. W. H. White: The Various Conditions causing Enlargement of the Liver. (In conjunction with the North-East London Clinical Society.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square. W.C.).—6 P.M.: Chesterfield Lecture:—Dr. M. Dockrell: The Present Position of Dermatology.

**FRIDAY** (4th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. A. Lawson: Clinique. (Eye.)

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—10 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. W. Edmunds). Clinique:—Ophthalmological (Mr. Brooks). 3 P.M.: Clinique: Medical In-patient (Dr. M. Leslie).

**SATURDAY** (5th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2 P.M.: Medical and Surgical Clinics. Mr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1907, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are :—

| FOR THE UNITED KINGDOM. | |
|---|---|
| One Year ... ... ... | £1 12 6 |
| Six Months ... ... ... | 0 16 3 |
| Three Months ... ... | 0 8 2 |

| TO THE COLONIES AND ABROAD. | |
|---|---|
| One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 17 4 |
| Three Months ... ... | 0 8 8 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch" should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

## TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Sept. 26th, 1907.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 20 | 30 43 | N.E. | ... | 97 | 71 | 53 | 53 | 54 | Foggy |
| " 21 | 30·33 | S.E. | ... | 101 | 67 | 54 | 55 | 56 | Dull |
| " 22 | 30 45 | S.E. | ... | 108 | 63 | 53 | 53 | 55 | Fine |
| " 23 | 30 30 | S.E. | ... | 101 | 63 | 45 | 49 | 52 | Fine |
| " 24 | 30 06 | E. | ... | 105 | 69 | 45 | 47 | 48 | Foggy |
| " 25 | 29 79 | E. | ... | 119 | 81 | 48 | 55 | 56 | Foggy |
| " 26 | 29 71 | S.E. | 0 05 | 77 | 65 | 56 | 61 | 62 | Cloudy |

**During the week marked copies of the following newspapers have been received:**—*Halifax Courier, Westminster Gazette, Daily Chronicle, Edinburgh Dispatch, Morning Post, Daily News, Yorkshire Observer, Glasgow News, Nottingham Evening News, Morning Advertiser, Glasgow Evening Times, Huddersfield Examiner, Nottingham Express, Aberdeen Daily Journal, Sunderland Echo, &c.*

## Communications, Letters, &c., have been received from—

**A.**—Miss Lena Ashwell, Lond.; Ardath Tobacco Co., Lond.; Addenbrooke's Hospital, Cambridge, Secretary of; Anglo-Indian; Apollinaris Co., Lond.; Ayr District Asylum, Ayr, Medical Superintendent of.

**B.**—Dr. Alex. B. Bennie, Knapton; Messrs. Battley and Watts, Lond.; Brompton Hospital Sanatorium, Frimley, Secretary of; Mr. A. A. Bradburne, Southport; Dr. Phillip Boobbyer, Nottingham; Dr. Robert Bing, Bale; Dr. Mildred Burgess, Lond.; British Vice-Consul, Brussels; Dr. L. Napoleon Boston, Philadelphia; Mr. W. L. Bradshaw, High Wycombe; Dr. D. Bower, Bedford; Mrs. Behnke, Lond.

**C.**—Mr. Albert H. Cawson, Lond.; Messrs. J. and A. Churchill, Lond.; Mr. T. Carwardine, Clifton; Clayton Hospital, Wakefield, Secretary of; C. W.; Messrs. Croyden and Co., Lond.; Charing Cross Hospital Post-Graduate Committee, Lond., Hon. Secretary of; Messrs. T. Colman and Co., Lond.; Dr. G. C. Chatterjee, Calcutta; Rev. T. B. Carroll-Baillie, Hereford; Mr. G. Cooper, Lond.; Dr. F. W. Collinson, Preston; Crichton Royal Institution, Dumfries, Assistant Medical Officer of.

**D.**—Dr. Bertrand Dawson, Lond.; Mr. T. W. Drinkwater, Edinburgh; Professor S. Delépine, Manchester; Devonian; D. A. C.; Mr. Rudolph Demuth, Lond.

**E.**—Dr. William Ewart, Lond.; Messrs. Evans and Wormull, Lond.

**G.**—Dr. Dundas Grant, Lond.; Mr. D. J. Guthrie, Jena; Messrs. Glover and Carter, Dartford; Mr. F. Goodingham, Ilford; Dr. Alex. Graham, Woolwich; Mr. J. C. Goodall, Lond.; Mr. Ernest W. Hey Groves, Clifton; Gloucester General Infirmary, Secretary of; Dr. A. Knyvett Gordon, Manchester: Dr. J. H. Garrett, Cheltenham.

**H.**—Mr. R. G. Hebb, Lond.; Dr. R. H. Hodgson, Lond.; Mr. William Heinemann, Lond.; Mr. C. E. Hindley, Hastings; Dr. E. Harland, Osgood; Dr. E. H. Harrisson, St. Neots; Hull Corporation, Clerk to the; Hospital for Sick Children, Birmingham, Secretary of; H. D.; Mr. F. C. Heath, Tunbridge Wells; H. G. D.

**I.**—Dr. W. W. Ireland, Musselburgh; Income-tax Adjustment Agency, Lond., Secretary of.

**J.**—Dr. Robert Johnson, Belfast; Dr. D. Jung, Marseilles; J. O. K.

**K.**—Messrs. Knoll and Co., Lond.; Messrs. B. Kuhn and Co., Lond.; Messrs. S. Kutnow and Co., Lond.; Komitee der Robert Koch-stiftung zur Bekämpfung der Tuberkulose, Berlin; Messrs. R. A. Knight and Co., Lond.; Dr. M. P. Kerrawalla, Brighton.

**L.**—Liverpool Stanley Hospital, Secretary of; Leslies, Ltd., Lond.; *The Laryngoscope*, St. Louis, Managing Editor of; London County Council, Education Department, Executive Officer of.

**M.**—Mr. John C. Matthews, Lond.; Messrs. Mayer and Meltzer, Lond.; Dr. H. D. McCulloch, Bournemouth; Dr. W. R. MacDermott, Poyntzpass; Manchester Medical Agency, Secretary of; Maltine Manufacturing Co., Lond.; Dr. J. McCaw, Belfast; Dr. E. E. Maples, Lagos; Dr. K. A. Moody-Stuart, Errol; Miss Manders, Baden Baden; Professor R. Meldola, Paisley; M.D.

**N.**—Newcastle-upon-Tyne Corporation, Medical Officer of Health of; Newport and Monmouthshire Hospital, Secretary of; Dr. Naz, Lond.; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.; Nottingham General Hospital, Secretary of.

**O.**—Dr. Henry K. Oliver, Vevey; Messrs. A. Owen and Co.; Odol Chemical Works, Lond.; Dr. Thos. Oliver, Newcastle-upon-Tyne.

**P.**—Mr. Y. J. Pentland, Edinburgh; Dr. T. H. S. Pullin, Sidmouth; Mr. A. J. Pressland, Edinburgh; P. S.; Mr. J. G. Pardoe, Lond.; Mr. O. A. Pfeifer, Lond.; Messrs. Peacock and Hadley, Lond.

**R.**—Dr. F. W. Forbes Ross, Lond.; Messrs. W. H. Ransom and Co., Lond.; Royal Society, Lond.; Royal Portsmouth Hospital, Secretary of; Royal Edinburgh Asylum, Superintendent of; Rebman, Ltd., Lond.; R. A. R.; Royal Dental Hospital of London, Medical Staff and Lecturers of; Messrs. Reynolds and Branson, Leeds; Royal Waterloo Hospital, Lond., Organising Secretary of.

**S.**—Dr. Samuel Sloan, Glasgow; Mr. F. A. Southam, Manchester; Dr. Herbert Smith, West Acton; Mr. H. B. Symons, Oxford; Mr. Edward John Sunnucks, Davos-Platz; St. Bartholomew's Hospital, Lond., Dean of the School of; Mr. W. Salt, Lond.; Smith's Advertising Agency, Lond., Manager of; Messrs. Southall Bros. and Barclay, Birmingham; St. John's Hospital for Diseases of the Skin, Lond., Secretary of; Scholastic, Clerical, &c., Association, Lond.; St. Thomas's Hospital, Lond., Chairman and Committee of; Dr. David Sinclair, Bradford.

**T.**—Mr. Bell Taylor, Nottingham; Dr. J. Ashburton Thompson, Sydney; Major R. G. Turner, Port Said; Dr. F. W. Tunnicliffe, Lond.; Dr. Edward Turton, Hull.

**U.**—Under Secretary to the Government of Bengal, Calcutta; University Extension Guild, Westminster, Hon. Secretary of; University College, Lond., Provost of.

**V.**—Mr. H. Vinju, Paris.

**W.**—Mr. J. Williams, Bradford; Winsley Sanatorium, Bath, Secretary of; W. F. K., Reading; Mr. Russ Wood, Shrewsbury; Mr. George W. White, Sheffield; Dr. S. H. West, Lond.; Welsh Gold; White Star Line, Lond.; Dr. G. A. Wright, Manchester; Mr. P. C. West, Windsor; Mr. C. Hamilton Whiteford, Plymouth; Worthing, Borough Meteorologist of. Messrs. H. Wilson and Son, Lond.; Western General Dispensary, Lond., Hon. Secretary of.

**Y.**—Dr. E. S. Yonge, Manchester.

## Letters, each with enclosure, are also acknowledged from—

**A.**—A. I.; A. Z., West Ealing; A. W. B., Brondesbury.

**B.**—Dr. Brooks, Great Malvern; Bradford Union, Clerk to the; Messrs. Begg, Kennedy, and Elder, Glasgow; Captain C. R. Bakhle, I.M.S., Bijapur; Mr. A. Banks, Lewes; Mr. W. J. Baker, Exeter; Dr. R. Bine, Heidelberg; Mr. J. D. Bush, Helensburgh; Mr. H. T. Butlin, Lond.; *Birmingham Daily Post.*

**C.**—Mr. J. J. Culmer, Nassau; Mr. A. G. Caronni, Lanzo d'Intelvi; Sir Halliday Croom, Edinburgh; Dr. W. M. Crofton, Sutton Bridge.

**D.**—Mr. A. Davies, Lond.; Miss C. E. Deane, Great Easton; Derby County Asylum, Mickleover, Clerk to the; Dr. W. T. Dougal, Pittenweem.

**E.**—Dr. G. L. Eastes, Lond.; Messrs. Else and Co., Liverpool; E. G. G; E. A.

**F.**—Fife District Asylum, Cupar, Medical Superintendent of; Dr. P. G. Foulkes, Tring; Dr. G. Foggin, Newcastle-on-Tyne; Mr. F. T. Fagge, Llanfairfechan; F. H.

**G.**—Dr. A. Gibson, Bedford; G. H.; Mr. A. Gregory, Manchester; Messrs. Giles, Schacht, and Co., Clifton; Mr. E. Gooch, Lond.; Mr. F. H. Godsell, Lond.; Messrs W. and A. Gilbey, Lond.; G. J.

**H.**—Mr. John Heywood, Lond.; H. S.; Hull Advertising Agency, Manager of; Mr. K. Honig, Koog; H. D. M. C.; Dr. A. R. Henchley, Canterbury; Mr. John Hart, Lond.; Messrs. Hancocks, Manchester; Mr. F. E. Heubeck, Cwm Aman; H. E. T.

**I.**—Miss Inge, Haslemere.

**J.**—Mr. L. Jones, Sialkote, India; J. W. G., J. W.; J. F., Anerley; J. C. P.; J. H. B.; Mr. R. A. Jones, Menai Bridge; J. T.

**K.**—Messrs C. Knight and Co., Lond.

**L.**—Mr. H. K. Lewis, Lond.; Dr. H. Lissner, Heidelberg; Lancashire County Asylum, Winwick, Clerk to the.

**M.**—Mr. B. J. Mayne, Carn Brea; Messrs. Menzies and Co., Glasgow; Medicus, Sheffield; Miol Manufacturing Co., Lond., Secretary of; Dr. Michou, Khartoum; Messrs. Menzies, Edinburgh; Medical Mission Hospital, Canning Town, Hon. Secretary of; Midland Educational Co., Birmingham; Messrs. C. Mitchell and Co., Lond; Mr. J. J. McCormick, Dublin; M.D., Grantham; Dr. M. C.; Mr. K. MacKinnon, Guelph, Canada; Messrs. McKesson and Robbins, New York.

**N.**—Mr. A H. Nicoll, Ramsbury; Mr. M. Nierenstein, Liverpool; Surgeon-Captain J. Norman, Vepery.

**P.**—Poplar Hospital, Lond., Secretary of; P. H.; Dr. A. Pick, Karlsbad.

**R.**—Mr. C. A. Ryde, Brussels; Royal Society of Tasmania, Hobart, Hon. Secretary of the Medical Section; Royal National Orthopædic Hospital, Lond., Secretary of.

**S.**—Dr. B. B. Sapwell, Aylsham; Messrs. Spiers and Pond, Lond.; Dr. A. E. Stevens, Portpatrick; Salford Royal Hospital, Secretary of; S. D. S.; Messrs. W. H. Smith and Son, Lond.; Salford Union, Clerk to the; Messrs. Squire and Sons, Lond.; *South Wales Argus*, Newport, Manager of; Mr. C. H. Sers, Brighton; Salford Corporation, Treasurer to the.

**T.**—Mr. W. I. Travers, Lond.; Mr. J. Thin, Edinburgh; Mr. J. Van S. Taylor, Grenada; Messrs. R. Tidey and Son, Lond.; T. J. D.; T. T.

**V.**—Mr. F. Vacher, Birkenhead.

**W.**—Mr. W. F. A. Walker, Dinas Mawddwy; W. C.; W. B. K; Messrs. Wilcox and Co., Lond.; West Ham, &c., Hospital, Secretary of; W. H. M.

**Y.**—Mr. W. E. Young, Beckenham.

---

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

### SUBSCRIPTION, POST FREE.

| FOR THE UNITED KINGDOM. | £ | s. | d. |
|---|---|---|---|
| One Year ... ... ... | £1 | 12 | 6 |
| Six Months ... ... ... | 0 | 16 | 3 |
| Three Months ... ... | 0 | 8 | 2 |

| TO THE COLONIES AND ABROAD. | £ | s. | d. |
|---|---|---|---|
| One Year ... ... ... | £1 | 14 | 8 |
| Six Months ... ... ... | 0 | 17 | 4 |
| Three Months ... ... | 0 | 8 | 8 |

Subscriptions (which may commence at any time) are payable in advance.

### ADVERTISING.

| | | £ | s. | d. |
|---|---|---|---|---|
| Books and Publications ... | Seven Lines and under | £0 | 5 | 0 |
| Official and General Announcements | Ditto | 0 | 5 | 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... | Ditto | 0 | 4 | 6 |
| | Every additional Line | 0 | 0 | 6 |

Situations wanted: First 30 words, 2*s.* 6*d.*; per additional 8 words, 6*d.*

Quarter Page, £1 10*s.* Half a Page, £2 15*s.* An Entire Page, £5 5*s.*

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.**

UNIVERSITY of ILLINOIS.

10.5
LA

# THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—
LANCET, LONDON

[*TWO HUNDRED AND TWENTY-FOUR PAGES.*]

TELEPHONE NUMBER—
5356 GERRARD

No. I. of Vol. II., 1907.
**No. 4375. Vol. CLXXIII.**

LONDON, SATURDAY, JULY 6, 1907.

PRICE *7d.*; POST FREE, *7½d.*
**[Pp. 120+104.**

New Work. 240 pp. Illustrated. 5s. net.
**SPINAL CURVATURES: The General Principles of their Mechanical Treatment.**
With a Critical Analysis of the Gymnastic Theories.
"*We must not fail to recognise, and to record our recognition of, the care and fulness with which the author has treated his subject. The book will be of value as containing the best exposition of this method of treatment.*"—THE LANCET.
By HEATHER BIGG, F.R.C.S. Ed.
J. & A. Churchill. London.

NOW READY. Demy 8vo, cloth. 5s. 6d. net.
**HAY FEVER, HAY ASTHMA, and its TREATMENT.**
By WILLIAM LLOYD,
Surgeon in Charge of the Nose, Ear, and Throat Department.
Kensington General Hospital, &c.
London: H. J. Glaisher, 57, Wigmore-street, W.

**BY C. MANSELL MOULLIN, M.D. Oxon.,** F.R.C.S., Senior Surgeon and Lecturer on Surgery at the London Hospital; late Examiner in Surgery at the Universities of Oxford and Cambridge.
ENLARGEMENT of the PROSTATE. Third Edition. Price 6s.
INFLAMMATION of the BLADDER and URINARY FEVER. Price 5s.
London: H. K. Lewis, 136, Gower-street.
WHEN to OPERATE in INFLAMMATION of the APPENDIX.
Second Edition. Price 2s. 6d.
THE SURGICAL TREATMENT of GASTRIC ULCER. Price 2s. 6d,
London: J. Bale & Danielsson, Ltd., 83–89, Gt. Titchfield-street.

Just Published.
**DR. HARRY CAMPBELL'S TREATMENT.**
5s. net.
Baillière, Tindall & Cox.

This day. Royal 8vo, cloth, gilt top. 18s. net. With many Engravings and Plates in Colour.
**EYE INJURIES and their TREATMENT.**
By A. MAITLAND RAMSAY, M.D., Author of Atlas of External Diseases of the Eye, &c
Glasgow: James MacLehose & Sons, Publishers to the University.
London and New York: Macmillan & Co., Ltd.

By W. ARBUTHNOT LANE, M.S.
**CLEFT PALATE and HARE LIP.**
New Edition, in large, clear type, demy 4to. 5s.
"Mr. Lane makes out a clear case for early and almost immediate operation. To sum up: Mr. Lane has absolutely proved his contention, and rendered it quite clear, that early operation is the right course on every ground, developmental and otherwise; and, further, that delay in performing staphylorrhaphy until the third to the sixth year is fraught with most harmful results, and should not be permitted."—BRITISH MEDICAL JOURNAL. Jan. 27th. 1906.
OPERATIVE TREATMENT of FRACTURES. New Edition, uniform with above, 7s. 6d.
THE OPERATIVE TREATMENT of CHRONIC CONSTIPATION. New Edition, uniform with above, 2s. 6d.
The Medical Publishing Company, Ltd., 2½, Bartholomew Close, E.C.

1907. Just Published. 15s. net.
**CLIMATOTHERAPY & BALNEOTHERAPY.**
Being a Third Edition of "The Mineral Waters and Health Resorts of Europe," much Enlarged in respect to Medical Climatology. By Sir HERMANN WEBER, M.D., F.R.C.P., and F. PARKES WEBER, M.D., F.R.C.P., Physician to the German Hospital, London, and to the Mount Vernon Hospital for Diseases of the Chest, Hampstead. Edited by F. PARKES WEBER
London: Smith, Elder & Co., 15, Waterloo-place.

Price 2s. 6d. net.
**ON MEANS for the PROLONGATION of LIFE.**
Second Edition (1906) of a Lecture delivered before the Royal Colleges of Physicians in 1903. By Sir HERMANN WEBER, M.D., F.R.C.P.
John Bale & Sons, Great Titchfield-street. London. W.

**THE FOOD FACTOR in DISEASE.** Including the Pathology and Treatment of Bilious Attacks, the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, &c.), Gout, High Blood-pressure, &c. By FRANCIS HARE, M.D., Consulting Physician, Brisbane Hospital. For abstract see THE LANCET review—Feb. 17th, 1906, pp. 453 to 455.—Longmans, Green & Co. In two volumes Price 30s.

Just published. Third Edition. Entirely rewritten. Demy 8vo.
Price 5s. net, by post 5s. 4d.
**INDIGESTION: The DIAGNOSIS and TREATMENT of the FUNCTIONAL DERANGEMENTS of the STOMACH.** With an Appendix on the preparation of food by cooking, with especial reference to its use in the treatment of affections of the stomach. By GEORGE HERSCHELL, M.D.Lond.
H. J. Glaisher, 57, Wigmore-street, W.

NOW READY. Complete in Two Volumes. Price 21s. net.
SECOND EDITION. THOROUGHLY REVISED and Enlarged.
Vol. I., General Surgery. Crown 8vo, cloth. Pp. xxiv.-808, with 313 Illustrations in the Text. Vol. II., Regional Surgery. Pp. xvi.-816, with 203 Illustrations in the Text.
**MANUAL of SURGERY.** By ALEXIS THOMSON M.D., F.R.C.S. Ed., Assistant Surgeon, Edinburgh Royal Infirmary; Surgeon to the Deaconess Hospital, Edinburgh; and ALEXANDER MILES, M.D., F.R.C.S Ed., Assistant Surgeon, Edinburgh Royal Infirmary; Surgeon to Leith Hospital.
Young J. Pentland.
Edinburgh: 11, Teviot-place. London: 21, Warwick-lane, E.C.

**SAUNDERS' NEW BOOKS.**

KELLY & NOBLE'S GYNECOLOGY
AND ABDOMINAL SURGERY.
IN TWO VOLUMES. VOLUME I. JUST ISSUED.
BEAUTIFULLY ILLUSTRATED.

See Advertising Page 9.

Now Ready. 10s. 6d. net.
**GOUT: Its Pathology, Forms, Diagnosis, and Treatment.**
By ARTHUR P. LUFF, M.D., B.Sc., F.R.C.P.,
Physician to St. Mary's Hospital.
Third Edition, Revised and Enlarged.
Cassell & Co., Ltd., London, and all Booksellers.

Now Ready. Demy 8vo. 324 pp. Illustrated. Price 7s. 6d. net.
**THE MEDICAL DISEASES of EGYPT. Pt. I.**
By F. M. SANDWITH, M.D., F.R.C.P.
London: Henry Kimpton, 13, Furnival-street, Holborn, E.C.

Now Ready. Price 15s. net.
**THE DIAGNOSIS of NERVOUS DISEASES.**
By PURVES STEWART, M.A., M.D., F.R.C.P.,
Physician to Out-Patients at the Westminster Hospital, and Joint Lecturer on Medicine in the Medical School.
Demy 8vo. With many Original Illustrations from photographs and Coloured Plates. 15s. net.
London: Edward Arnold, 41 and 43, Maddox-street, W.

**INSANITY CURED by a NEW TREATMENT.**
Details of Twenty-one Cases.
By C. W. SUCKLING, M.D. Lond.
Birmingham: Cornish Brothers, Ltd.. 37, New-street.
Price 2s. net; by post 2s. 2d.

Just published. Price 8s. 6d. net.
A HANDBOOK OF
**SKIN DISEASES and their TREATMENT.**
By ARTHUR WHITFIELD, M.D. (Lond.), F.R.C.P., Professor of Dermatology at King's College, London. With numerous Original Illustrations from Photographs. Crown 8vo.
London: Edward Arnold, 41 and 43, Maddox-street, W.

687 pages, with 249 Illustrations. Royal 8vo. 15s. net.
**LAWSON.—DISEASES of the EYES.** Sixth Edition. Revised and Rewritten by ARNOLD LAWSON, F.R.C.S. Assist. Surg., Roy. Lond. Ophth. Hosp.
London: Smith. Elder & Co., 15, Waterloo-place, S.W.

By W. McADAM ECCLES, M.S., F.R.C.S.
**HERNIA.** Second Edition Price 7s. 6d. net.
54 Plates and 63 Illustrations.

THE IMPERFECTLY DESCENDED TESTIS.
Recently published Price 7s. 6d. net.
41 Plates and 76 Figures.
London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

Now Ready. Demy 8vo. Price 1s. net.
**PROLONGED ANÆSTHESIA UNDER NITROUS OXIDE AND OXYGEN FOR DENTAL OPERATIONS.**
By H. BELLAMY GARDNER, M.R.C.S., L.R.C.P. Lond., late Assistant Anæsthetist to the Royal Dental Hospital of London, &c
Bale, Sons & Danielsson, Ltd., 83–89, Great Titchfield-street, W.

**No. 4375.]** THE LANCET is registered as a Newspaper. All rights reserved. [FOUNDED **1823**

BY ROYAL WARRANT OF APPOINTMENT

DAIRYMEN

TO H.R.H.
THE PRINCE OF WALES.

ICH DIEN

# HUMANIZED MILK

BEST AND MOST RELIABLE,

Being prepared from Perfectly Fresh Milk, produced on the Company's Own Farms.

**No. 1.**
**"Facsimile Human Milk."**

Prepared from Milk constituents only. Analogous to the Best Mother's Milk.

SAMPLES FREE TO MEMBERS OF THE MEDICAL PROFESSION.

**No. 2.**
**"Modified Humanized Milk."**

With a minimum percentage of Casein. For very young and delicate infants.

FROM OUR OWN HERD OF MILCH ASSES

# ASSES' MILK

SUPPLIED ON RECEIPT OF TELEGRAM TO ANY PART OF THE KINGDOM.

## MEDICAL PRESCRIPTIONS OF MILK,

To contain any required proportion of Fat, Milk Sugar, Proteids, &c., prepared by the Company's Resident Chemist.

## KOUMISS, PEPTONIZED MILK, STERILIZED MILK, &c.

Full particulars of Milk Preparations and Nursery Supplies on application.

# WELFORD & SONS (DAIRY COMPANY) Ltd.

Own Farms:
Harlesden and Willesden.

CHIEF DAIRY & OFFICES:
**ELGIN AVENUE,**
**MAIDA VALE,**

**BEING THE LARGEST DAIRY IN LONDON.**

Branch Dairies
in all parts of Metropolis.

TELEGRAPHIC ADDRESS—"WELFORDS," LONDON." PRINCIPAL TELEPHONE—No. 107, PADDINGTON.

# THE LANCET.

No. 4375. Vol. CLXXIII. LONDON, SATURDAY, JULY 6, 1907. [Pp. 120+104

## CONTENTS.

*The whole of the literary matter in THE LANCET is copyright.*

**THE INGLEBY LECTURES** on Pelvic Inflammations in the Female. Delivered at the University, Birmingham, on May 9th and 16th, 1907, by THOMAS WILSON, M.D. Lond., M.Ch. Birm., F.R.C.S. Eng., Obstetric Officer to the General Hospital, Birmingham.—Lecture II. ......... 1

**THE HARBEN LECTURES** on Experimental Researches on Specific Therapeutics. Delivered at 20, Hanover-square, London, under the auspices of the Royal Institute of Public Health, by Professor PAUL EHRLICH, M.D., Director of the Königliches Institut für Experimentelle Therapie, Frankfort. Lecture II. (delivered on on June 10th) ........................ 9

### ORIGINAL ARTICLES.

Two Cases of Intermittent Hydronephrosis treated by Operation. By W. WATSON CHEYNE, C.B., LL.D., F.R.S., F.R.C.S.Eng., Senior Surgeon to King's College Hospital, &c. (*Illustrated*) ........................ 11

An Improved Preparation for Intra-muscular Injections of Insoluble Salts of Mercury in the Treatment of Syphilis. By F. J. LAMBKIN, L.R.C.P. & S. Irel., Colonel, R.A.M.C. ......... 13

Separation of the Acetabular Epiphysis of the Femur: its Relation to Adolescent Coxa Vara. By PERCY W. G. SARGENT, M.A., M.B., B.C. Cantab., F.R.C.S.Eng., Assistant Surgeon to St. Thomas's Hospital and the National Hospital for the Paralysed and Epileptic, Queen-square; Surgeon to the Victoria Hospital for Children, Chelsea; and HAROLD A. KISCH, M.B., B.S.Lond., late Assistant in the X Ray Department; formerly House Surgeon, St. Thomas's Hospital. — (*Illustrated*) .............................. 14

The Opsonic Index and Agglutination in Cerebro-spinal Meningitis. By ALICE TAYLOR, L.R.C.P.Irel.—(*Illustrated*) ... 16

An Investigation of Some of the More Unusual Forms of Acute Conjunctivitis. By A. C. HUDSON, M.D. Cantab., F.R.C.S.Eng., House Surgeon at the Royal London Ophthalmic Hospital; and P. N. PANTON, M.B., B.C. Cantab., M.R.C.S. Eng., Assistant Director of the Louis Jenner Clinical Laboratory, St. Thomas's Hospital .............................. 19

Important Epochs in the History of the Old School of Medicine of Paris. By H. MACNAUGHTON-JONES, M.D. Q.U.I.—(*Illustrated*)................ 42

### CLINICAL NOTES:

#### MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

Notes of a Case of Distal Ligature of the Common Carotid Artery for Aneurysm. By J. CRAWFORD RENTON, M.D. Edin., Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow ............... 24

A Case of Foreign Body in the Female Bladder. By WILLIAM HOOK, L.S.A. ......................... 24

A Case of Prolonged Retention of Food in an Œsophageal Pouch. By WILLIAM AYRES, M.D.Dub. ............................. 24

### MEDICAL SOCIETIES.

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE: Presidential Address.—A Lantern Demonstration on Some Points in Tropical Diseases...... 25

MEDICO-LEGAL SOCIETY: Opinion and Fact in Medical Evidence ............................. 25

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND: Exhibition of Cases ................ 26

### REVIEWS AND NOTICES OF BOOKS.

A Text-book of the Practice of Medicine for Students and Practitioners. By Hobart Amory Hare, M.D., B.Sc. Second Edition ..................... 27
Annual Report of the Sanitary Commissioner with the Government of India for 1905, with Appendices and Returns of Sickness and Mortality among European Troops, Native Troops, and Prisoners in India for the Year 1905...................... 27
The Drink Problem in its Medico-Sociological Aspects. Edited by T. N. Kelynack, M.D.Vict., F.R.C.P.Lond. ...... 28
A Health Reader. By C. E. Shelly, M.D. Cantab., and E. Stonehouse, B.Sc. .................. 28
A Monograph of the Culicidæ or Mosquitoes. By Fred. V. Theobald, M.A. ..................... 28
The American Medical Directory 29
The Edinburgh Medical Journal 29
The Scottish Medical and Surgical Journal ......................... 29
The Dublin Journal of Medical Science .................................. 29
The Medical Chronicle............... 29

### NEW INVENTIONS.

Modification of Bartrina's Prostatic Catheter....................... 29

An Apparatus for Sterilising Sutures, Ligatures, and Needles.—(*Illustrated*) ............ 30

### LOOKING BACK.

(From THE LANCET, Saturday, July 4th, 1829.)

Preservation of the Ergot of Rye ........................................ 30
New Food at the French Hospitals ....................................... 30

### LEADING ARTICLES.

THE IMPERIAL CANCER RESEARCH FUND: FIFTH ANNUAL REPORT ............................. 31

THE ANNUAL REPORT OF THE COUNCIL OF THE CORONERS' SOCIETY ............................. 32

THE BACILLUS PARALYTICANS AND GENERAL PARALYSIS OF THE INSANE ........................ 33

KING EDWARD'S HOSPITAL FUND FOR LONDON ........................... 34

### ANNOTATIONS.

Presentation of the Freedom of the City of London to Lord Lister ................................. 36
The Workmen's Compensation Act: Medical Men and the Borough Council of Westminster ................................. 36
The Birthday Honours............... 37
The Report of the Egyptian Government Hospital for the Insane for 1906...................... 37
Some Consolations of a Cold Summer ................................ 38
The Suture of Blood-vessels ...... 38
Public Analysts and State Medicine ..................................... 39
The Oxford Pageant ................... 39
Rupture of the Mesentery due to a Fall ................................... 39
An Act to Prevent Procreation of Unfit Persons ..................... 40
Operative Treatment of the Large Bowel ................................... 40
The Royal Anthropological Institute.................................... 41
Shelter for Homeless Women ... 41
Epidemic Cerebro-spinal Fever .. 41
The Retirement of Postal Medical Officers under an Age-limit ................................... 41

VITAL STATISTICS:

Health of English Towns ...... 47
Health of Scotch Towns ......... 47
Health of Dublin .................. 47

### SPECIAL ARTICLES.

Medicine and the Law: Trial for Murder and Concealment of Birth in Essex; an Action to Recover Fees ..................... 43
Imperial Cancer Research Fund.. 44
Epsom College .......... ............... 45
Asylum Reports: Derby Borough Asylum; Chartham Asylum; City and County of Bristol Asylum ..................................... 46
The Services: The Birthday Honours .. .. ......................... 48
Some Turkish Lazarets and other Sanitary Institutions in the Near East. By the British Delegate on the Constantinople Board of Health. IX.: The Water-supply of Jeddah (*continued*). — (*Illustrated*) ...................................... 51
Manchester ............................. 52
Wales and Western Counties Notes .................................... 53
Scotland.................................. 53
Ireland ................................... 54
Paris ...................................... 55
Berlin ..................................... 56
Italy....................................... 56
New York ................................ 57

### CORRESPONDENCE.

The Surgical Treatment of Constipation (Mr. C. B. Keetley, Mr. J. Hopkins Walters)......... 48
Grocco's Triangle: Physical and Anatomical Explanation (Dr. William Ewart) ..................... 49
The Medical Faculty of the University of London and St. George's Hospital (Mr. A. William West)......................... 49
Notes of a Case in which Glycosuria, depending upon Cholecystitis and Cholangitis, disappeared after Drainage of the Bile-ducts (Mr. C. Mansell Moullin)................................ 50
Insurance against Sickness ........ 50
The New Vaccination Order ...... 50
Nisbet's Medical Directory......... 50
Speed *versus* Comfort on Railways .................................... 70

### OBITUARY.

Sir William Tennant Gairdner, K.C.B., M.D.Edin. and Dub., LL.D.Edin., F.R.S., F.R.C.P. Edin. and Irel., Honorary Physician-in-Ordinary to H.M. the King in Scotland, &c.—(*With Portrait*) ................................ 58
Deaths of Eminent Foreign Medical Men.......................... 61

### MEDICAL NEWS.

Fourteenth International Congress of Hygiene and Demography .................................. 8
King's College Hospital ............ 42
Missionary Hospital in Persia ... 50
Pass-list of Trinity College, Dublin ..................................... 61
Foreign University Intelligence.. 61
Central Midwives Board ............ 62
Society of Arts.......................... 62
The Eleventh Annual Report of the National Association for the Feeble-minded ................. 62
Westminster Hospital Medical School..................................... 62
Durham County Consumption Sanatorium .......................... 62
Medical Affairs in Ashanti ......... 63
The British Antarctic Expedition 63
The Cancer Hospital ................. 63
Poor-law Medical Officers' Association of England and Wales.. 63
Milk Contamination and Distribution ............................ 63
The Barker Anatomical Prize...... 64
Presentations to Medical Practitioners ................................ 64
National Society for Employment of Epileptics ................. 64
Donations and Bequests ............ 64
Hampstead General Hospital ... 64

### PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics ............ 64
House of Lords ......................... 65
House of Commons ................... 65
King Edward's Hospital Fund for London Bill .. .................. 66
The Public Health Bill............... 67

Books, &c., received .................. 67
Appointments ........................... 68
Vacancies ................................. 69
Births, Marriages, and Deaths..... 69
Notes, Short Comments, and Answers to Correspondents...... 70
Medical Diary ........................... 70

INDEX.................................. iii.-l.
TITLE-PAGE.

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

# INDEX.

## MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

**COVER.**

PAGE

**ARNOLD:—**
Stewart .... Nervous Diseases ...... i
Whitfield .. Skin Diseases, &c. ...... i

**BAILLIERE, TINDALL & COX:—**
Campbell .. Treatment ........ i
Eccles ...... Hernia ........ i
,, ...... Imperfectly Descended Testis ........ i

**BALE, SONS, & DANIELSSON:—**
Gardner .... Prolonged Anæsthesia i
Moullin .... Inflammation of the Appendix ........ i
,, .... Treatment of Gastric Ulcer ........ i
Weber ...... Prolongation of Life .. i

**CASSELL & CO.:—**
Luff ........ Gout ........ i

**CHURCHILL, J. & A.:—**
Bigg ........ Spinal Curvatures...... i

**CORNISH BROS.—**
Suckling .... Insanity ........ i

**GLAISHER:—**
Herschell .. Indigestion ........ i
Lloyd ...... Hay Fever, &c. ........ i

**KIMPTON:—**
Sandwith.... Medical Diseases of Egypt ........ i

**LEWIS:—**
Moullin .... Enlargement of the Prostate ........ i
,, .... Inflammation of the Bladder ........ i

**LONGMANS, GREEN & CO.:—**
Hare ........ Food Factor in Disease i

**MACLEHOSE & SONS:—**
Ramsay .... Eye Injuries ........ i

PAGE

**MEDICAL PUBLISHING CO.:—**
Lane ........ Cleft Palate and Hare Lip ........ i
,, ........ Treatment of Fractures i
,, ........ Chronic Constipation .. i

**PENTLAND, Y. J.:—**
Thomson & Miles...... Manual of Surgery .... i

**SAUNDERS COMPANY:—**
Saunders' New Books ........ i

**SMITH, ELDER & CO.:—**
Lawson .... Diseases of the Eyes .... i
Weber & Weber .... Climatotherapy and Balneotherapy ........ i

**BAILLIERE, TINDALL & COX:—**
Bigg ........ Constipation ........ 8
Campbell.... Treatment ........ 5
Crook ...... High Frequency Currents 5
Kitt ........ Comparative Pathology 5
Latham .... Pulmonary Consumption ........ 5
May & Worth Diseases of the Eye .... 5
McKisack .. Dictionary of Medical Diagnosis ........ 5
Politzer .... Diseases of the Ear .... 5
Tuckey .... Hypnotism ........ 5
Williams.... Minor Maladies, &c..... 5

**CASSELL & CO.:—**
Bruce ...... Materia Medica, &c..... 7
Herman .... First Lines in Midwifery 7
Hutchison & Rainy .... Clinical Methods ...... 7
Madden .... Bilharziosis ........ 7
Morris, H. .. Surgery of the Kidney and Ureter ........ 6
,, .. Injuries and Diseases of Genital, &c., Organs .. 6
Page ........ Elements of Physics.... 7

PAGE

**CHURCHILL, J. & A.:—**
Bigg ........ Spinal Curvatures...... 8
,, ........ Spinal Caries ........ 8
,, ........ Deformities of the Head and Neck ........ 8
,, ........ Amputations and Artificial Limbs ........ 8
,, ........ Hernia, &c. ........ 8
Butlin ...... Operative Surgery of Malignant Disease .... 8
Cripps ...... Cancer of the Rectum .. 6
,, ...... Diseases of the Rectum 6

**CORNISH BROS.:—**
Suckling .... Movable Kidney ...... 10

**GRIFFIN & CO.:—**
Blyth & Blyth...... Foods ........ 7
,, ...... Poisons ........ 7
Evans ...... Physico-Chemical Tables 7
Mitchell .... Flesh Foods ........ 7
Nicholson .. Smoke Abatement...... 7
Oppenheimer Toxines and Antitoxines 7
,, Ferments, &c. ........ 7
Reid ........ Practical Sanitation.... 7
Wood ...... Sanitary Engineering .. 7

**KIMPTON:—**
Russell...... Medical Philosophy.... 6

**LEWIS:—**
Beaumont .. Injuries of the Eyes .... 10
Lewers...... Diseases of Women .... 8
,, ...... Cancer of the Uterus .. 6

**LONGMANS, GREEN & CO.:—**
Goodsall & Miles .... Diseases of the Anus and Rectum ........ 10

**MACMILLAN & CO.:—**
Hewitt ...... Anæsthetics and their Administration ...... 8
Huggard .... Climatic Treatment .... 8

**MURRAY:—**
Science Progress in the Twentieth Century ........ 6

PAGE

**REBMAN:—**
Beck ........ Surgical Dis. of Chest.. 6
Von Schrötter Hygiene of the Lung .. 8
Wilcox ...... Treatment of Disease .. 6

**RENSHAW:—**
Wood ...... Application of Trusses 10

**SAUNDERS COMPANY:—**
Eisendrath .. Surgical Diagnosis .... 9
Kelly & Noble .... Gynecology, &c........ 9
Kerr ........ Diagnostics of Children's Diseases ........ 9

**SMITH, ELDER & CO.:—**
Barnes ...... Midwifery for Midwives 3
Chance...... Bodily Deformities .... 3
Cheadle .... Artificial Feeding ...... 3
Clinical Manual for the Study of Medical Cases ........ 3
Dictionary of Practical Surgery...... 3
Ellis ........ Demonstrations of Anatomy ........ 3
Herter ...... Chemical Pathology.... 3
Juler........ Ophthalmic Science, &c. 3
Keetley .... Orthopædic Surgery.... 8
,, .... Gastric Ulcers ........ 8
,, .... Complicated Fractures 8
Lawson .... Diseases of the Eyes .... 3
Leftwich.... Index of Symptoms .... 3
Marshall .... Vertebrate Embryology 3
Marshall & Hurst .... Practical Zoology ...... 3
Playfair .... Science and Practice of Midwifery ........ 3
Schäfer .... Practical Histology .... 3

**MEDICAL LIBRARIES, &c.:—**
Baker—Bargains in Books ........ 10
Behnke—Stammering ........ 10
Institute of Hygiene—Hygienic Handbook ........ 8
Royal Statistical Society's Journal .. 10
Seymour—How to Speak Effectively.. 10

## OFFICIAL AND GENERAL ANNOUNCEMENTS.

**APPOINTMENTS VACANT:—**
Ayr County Hospital ........ 84
Ayr District Asylum ........ 84
Bolton Infirmary and Dispensary .... 85
B. P. B., Cornhill ........ 84
Bristol Royal Infirmary ........ 87
Cancer Hospital, Fulham-road........ 84
Chelsea Infirmary ........ 87
Clinical Research Assoc., Adelphi.... 84
Coventry and Warwickshire Hospital 85
Department of Public Health, Cairo.. 84
Derbyshire Royal Infirmary, Derby .. 85
Dreadnought Hospital, Greenwich.... 86
Dumfries and Galloway Royal Infirmary ........ 86
Essex and Colchester General Hos. .. 85
General Infirmary, Gloucester........ 88
Hastings St. Leonards, &c., Hospital 84
Hospital for Epilepsy, &c., Maida Vale 86
Ingham Infirmary, &c., South Shields 86
Leeds Union Infirmary ........ 85
Liverpool Infirmary for Children .... 84
Liverpool Stanley Hospital ........ 85
London Temperance Hospital ........ 85
Loughborough and District Gen. Hos. 85
Macclesfield General Infirmary ...... 85
Manchester Royal Infirmary ...... 85, 86
Middlesex Hospital ........ 86
Monmouthshire Asylum, Abergavenny 86
Newport and Monmouthshire Hos. .. 85
Norfolk and Norwich Hospital ...... 84
Northampton General Hospital ...... 84
Nottingham Children's Hospital ...... 86
No. 762, L.O., Strand........ 85
Parish of Birmingham Workhouse Infirmary ........ 85
Poplar Hospital for Accidents........ 86
Radcliffe Infirmary, &c., Oxford...... 87
Rotherham Hospital and Dispensary 86
Royal Eye Hospital, Southwark...... 86
Royal Hampshire County Hospital, Winchester........ 87
Royal Infirmary, Hull........ 84
Royal Institute of Public Health .... 85
Royal Surrey County Hos., Guildford 85
Royal Waterloo Hospital for Children 84
St. Luke's Hospital ........ 8[illegible]
Stockport Infirmary ........ 85
Stockton and Thornaby Hospital, Stockton-on-Tees ........ 86
Taunton and Somerset Hospital ...... 86
Teignmouth Hospital, South Devon.. 85
Victoria Hospital, Burnley ........ 86
West Bromwich District Hospital.... 84
West Suffolk General Hospital, Bury St. Edmunds ........ 84

**ASSISTANCIES, MEDICAL ........ 94**

**ASYLUMS, HOMES, &c.:—**
Ashwood House, Kingswinford ...... 76
Baden-Baden Sanatorium ........ 81
Bailbrook House, Bath ........ 75
Barnwood House Hospital ........ 77
Bauer's Institute for Diabetes, Dresden 81
Bethel Hospital for Mental Diseases .. 83
Buntingford House Retreat, Buntingford ........ 79
Camberwell House, Peckham-road.... 75
Cheadle Royal ........ 76
Clarence Lodge, Clapham-park ...... 83
Conifers, Hampton Wick........ 74

**ASYLUMS**—(Continued).
Coppice, The, Nottingham ........ 77
Cotswold Sanatorium ........ 80
Court Hall, Kenton ........ 76
Crooksbury Sanatorium, Surrey ...... 80
Dadson Nursing Homes ........ 76
Dalrymple Home, Rickmansworth .. 76
David Lewis Colony, Alderley Edge .. 75
Dr. Teuscher's Sanatorium, Weisser .. 81
East Anglian Sanatorium, Nayland .. 80
Fairford Retreat, Gloucestershire .... 75
Flower House, Catford........ 76
Grove House, Church Stretton ........ 77
Grove, The, Catton, Norwich ........ 77
Haslemere Nursing Home ........ 74
Haydock Lodge, Newton-le-Willows 78
Heigham Hall, Norwich ........ 75
Hitch, Mrs., Hollington ........ 77
Home for Epileptics, Maghull ........ 75
Invernith Lodge Retreat, Colinsburgh 78
Lady Superintendent, Streatham...... 84
Lawson, Nordrach-on-Dee, Banchory 79
Leigh House, Warwick........ 83
London Fever Hospital ........ 75
London Open Air Sanatorium, Wokingham ........ 79
Malling-place, Kent ........ 76
Manor Valley Sanatorium, Peebleshire ........ 83
Melbourne House, Leicester ........ 77
Middleton Hall, Co. Durham........ 76
Miss Goffe's Nursing Home, Finchley 83
Moat House, Tamworth ........ 77
Newmains Retreat, Lanarkshire...... 78
Nordrach-upon-Mendip Sanatorium .. 79
Northlands Retreat, Wandsworth .... 76
Northumberland House, Finsbury-park ........ 82
Northwoods House, Winterbourne.... 78
Norwood Sanatorium ........ 79
No. 103, L.O., Strand........ 83
No. 116, L.O., Strand........ 84
No. 242, L.O., Strand........ 83
No. 490, L.O., Strand........ 83
No. 537, L.O., Strand........ 84
No. 597, L.O., Strand........ 83
Ochil Hills Sanatorium, Kinross-shire 80
Peckham House, Peckham-road ...... 78
Physician, Wimbledon........ 83
Plas-yn-Dinas, Merionethshire........ 78
Plympton House, South Devon ...... 77
Sanatorium Clavadel........ 81
Shaftesbury House, Formby ........ 78
Springfield House Private Asylum, Bedford ........ 77
St. Andrew's Hospital, Northampton 77
St. Luke's Hospital, E.C........ 75
Stocker, Craven-street ........ 83
Stretton House, Church Stretton ...... 77
The Lodge, Carnoustie........ 76
The Retreat, York ........ 75
Throxenby Hall, Scarborough ........ 75
Tower House, Leicester ........ 77
Vale of Clwyd Sanatorium........ 80
Warneford Asylum, Oxford ........ 76
Weir Hall Retreat, Edmonton ........ 78
White Hall, South Norwood Hill .... 74
Whitmead Hill Sanatorium, Farnham 79
Wise, Dartmouth ........ 75
Wonford House, Exeter ........ 77
Wye House, Buxton ........ 77

**ASYLUMS**—(Continued).
Wyke House, Isleworth ........ 77
Yarrow Convalescent Home, Broadstairs........ 80
25, Rue des Mathurins, Paris ........ 83

**FINANCIAL, &c.:—**
Birkbeck Bank ........ 73
Equitable Reversionary Interest Soc. 73

**HEALTH RESORTS, BATHS, &c.:—**
Aberystwyth, the Biarritz of Wales .. 82
Badgastein ........ 82
Bath of Ems ........ 81
Guernsey........ 83
Harrogate ........ 83
Homburg-Bath........ 82
Ilfracombe—Cliffe Hydro ........ 75
Leysin, Switzerland ........ 81
Plombières........ 82
Schinznach les Bains........ 81
Smedley's, Matlock ........ 75
St. James's Electric, Light, and Pine Baths ........ 83
Surrey Hills Hydropathic, Caterham 82
Teplitz-Schönau, Bohemia........ 82

**HOMES WANTED:—**
No. 114, L.O., Strand........ 84
No. 119, L.O., Strand........ 84
No. 120, L.O., Strand........ 84
W., Hollington ........ 83

**HOTELS:—**
Rad Nauheim—Park Hotel ........ 83
Barton Court Hotel, New Milton .... 83
Ilfracombe Hotel ........ 83

**HOUSE & ESTATE AGENTS:—**
A. E. G., Staple Inn ........ 92
Aldridge & Co., Cannon-street ........ 92
Avranches, Croydon ........ 92
Bedford & Co., Wigmore-street........ 87
Bottomley & Son, Ashton-under-Lyne 92
Elliott, Son & Boyton, Vere-street.... 92
Estate Office, Addison Bridge ........ 92
Frank Newman & Blunt, Savile-row 92
Geen, Lewisham ........ 92
Glasier & Sons, St. James's-street .... 92
Hyman, Caledonian-road ........ 93
Loveys & Son, Moretonhampstead.... 92
No. 754, L.O., Strand........ 92
CONSULTING-ROOMS:—
No. 100, L.O., Strand........ 93
No. 107, L.O., Strand........ 93
No. 112, L.O., Strand........ 93
Robins, Gore, & Mercer, Wardour-street........ 93
15, Harley-street........ 93

**LIFE & FIRE ASSURANCES:—**
General Life Assurance Co. ........ 73
Guardian Assurance Company ........ 13
National Provident Institution ...... 73
Prudential ........ 73

**MEDICAL ACCOUNTANTS, &c.:—**
Turner ........ 93

**MEDICAL AGENTS:—**
Aked & Aked........ 87
Fieldhall, Limited ........ 88

**MEDICAL AGENTS**—(Continued).
Manchester Medical Agency ........ 87
Manchester Medical Association ...... 91
Medical Agency ........ 92
Needes, Herbert ........ 92
Needes, J. C. ........ 91
Peacock & Hadley ........ 87
Reynolds & Branson ........ 91
Scholastic, Clerical, &c., Assoc. ...... 89
Turner ........ 90
Wilson & Son ........ 91

**MEDICAL SCHOOLS** (LONDON):—
Cooke's School of Anatomy ........ 72
Medical Graduates' College, &c. ...... 71
St. Mary's Hospital Medical School .. 71
West London Post-Graduate College.. 72

**NURSING INSTITUTES:—**
General Nursing Association........ 74
Hospital for Sick Children, Great Ormond-street ........ 73
Incorporated Society of Trained Masseuses ........ 74
Leeds Trained Nurses' Institution .... 73
London Nurses' Association ........ 74
Male and Female Nurses' Assoc........ 74
Male Nurses' Association ........ 74
Male Nurses' Co-operation ........ 74
Middlesex Hos. Trained Nurses' Inst. 73
National Hos. Male Nurses' Assoc. .. 73
Nurses' Co-operation, Portland-place 73
Queen Charlotte's Lying-in Hospital.. 73
Registered Nurses' Society ........ 73
St. John's House ........ 73
St. Luke's Hospital, E.C........ 75
Temperance Male and Female Nurses' Co-operation ........ 74
Temperance Male Nurses' Co-operation ........ 74

**OFFICIAL NOTICES:—**
Central Midwives Board ........ 71
College of Preceptors, London ........ 71
Edinburgh Post-Graduate Vacation Course ........ 71
Pathological Laboratories, Langham-place........ 71
Pathological Laboratories, Portland-place ........ 71
Royal College of Surgeons in Ireland 71
Royal London Ophthalmic Hospital.. 72
Royal Naval Medical Examination .. 71
St. Mary's Hospital Medical School .. 71
Western Skin Hospital ........ 71

**PARTNERSHIPS & PRACTICES 93**

**RAILWAY & STEAMSHIP CO.'S:—**
Albion S.S. Co.—Norway Pleasure Cruises ........ 73
Booth S.S. Co.'s Tours ........ 73
Great Eastern Railway Co.—Holidays on the Austrian Tyrol .. 73
New Zealand Shipping Co........ 73
Royal Mail Steam Packet Co.—Tours 73

**TUTORS & LECTURERS:—**
Behnke ........ 72
Fellowship .... 72
Gooch ...... 72, 73
Kerin ........ 72
Knight ........ 72
Schnelle ...... 72
Van Praagh.... 73
Weymouth .... 72

*(For Index to Trade and Miscellaneous Advertisements see page 4.)*

# SMITH, ELDER & CO.'S PUBLICATIONS.

---

## ELLIS'S DEMONSTRATIONS OF ANATOMY.

*Being a Guide to the Knowledge of the Human Body by Dissection.*

Edited by **CHRISTOPHER ADDISON, M.D., F.R.C.S.,**

Lecturer on Anatomy at Charing Cross Hospital Medical School.

TWELFTH EDITION. With over 300 Illustrations. Small 8vo, 12s. 6d. net.

THE LANCET. — "Eminently practical and devoid of superfluous matter."

MEDICAL PRESS AND CIRCULAR.—"Worthy of taking its place among the standard text-books of human anatomy."

BRITISH MEDICAL JOURNAL.—"Will no doubt receive a warm welcome from students on account of its compactness, clearness, and the fact that all the information necessary for dissecting-room purposes is contained in one volume."

---

## A JUNIOR COURSE OF PRACTICAL ZOOLOGY.

By the late A. MILNES MARSHALL, M.D., D.Sc., M.A., F.R.S., Professor in the Victoria University; Beyer Professor of Zoology in Owens College; and the late C. HERBERT HURST, Ph.D., Lecturer in the Victoria University, &c.

SIXTH EDITION, Revised by F. W. GAMBLE, D.Sc., Lecturer in Zoology in the University of Manchester. With Illustrations. Crown 8vo, 10s. 6d.

BRITISH MEDICAL JOURNAL.—"Few text-books of practical zoology have met with such deserved success. ...... The present edition is, as usual, excellent and up-to-date."

## ARTIFICIAL FEEDING & FOOD DISORDERS OF INFANTS.

By W. B. CHEADLE, M.A., M.D. Cantab., F.R.C.P. Consulting Physician to St. Mary's Hospital, &c.

SIXTH EDITION. Edited and Revised by J. F. POYNTON, M.D. Lond., F.R.C.P., Sub-Dean to the Medical Faculty, University College, London. Crown 8vo, 5s.

NURSING TIMES.—"The standard English reference book on the subject. It has run through five editions, and the sixth, which is just published, has been brought thoroughly up to date in every particular."

## BODILY DEFORMITIES. Volume I. A Series of Lectures

on their Nature, Causes, Variety, and Treatment, delivered at the City Orthopædic Hospital by the late E. J. CHANCE, F.R.C.S. Eng. EDITED BY JOHN POLAND, F.R.C.S. Eng., Senior Surgeon to the City Orthopædic Hospital; Senior Surgeon to the Miller Hospital, &c. SECOND EDITION, with numerous Illustrations. Crown 8vo, 6s. net.

☞ *Volume II., completing the work, is in the press. Each Volume is complete in itself.*

## AN INDEX OF SYMPTOMS AS A CLUE TO DIAGNOSIS. By

RALPH WINNINGTON LEFTWICH, M.D., late Assistant Physician to the East London Children's Hospital. THIRD EDITION. Revised and Enlarged. Small crown 8vo, 6s. net.

## A HANDBOOK OF OPHTHALMIC SCIENCE AND PRACTICE.

By HENRY E. JULER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the London Lock Hospitals. THIRD and ENLARGED EDITION. With 8 additional Plates and 29 new Illustrations in the Text. 8vo, 21s. net.

## DISEASES AND INJURIES OF THE EYE, with their Medical

and Surgical Treatment. By GEORGE LAWSON, F.R.C.S. Eng., Surgeon-Oculist in Ordinary to Her late Majesty Queen Victoria; late Member of the Council of the Royal College of Surgeons of England; Consulting Surgeon to the Royal London Ophthalmic Hospital and to the Middlesex Hospital. SIXTH EDITION, with 249 Illustrations. Revised, and in great measure rewritten, by ARNOLD LAWSON, F.R.C.S. Eng., Assistant Surgeon to the Royal London Ophthalmic Hospital; Ophthalmic Surgeon to the Paddington Green Children's Hospital. Royal 8vo, 15s. net.

## A TREATISE ON THE SCIENCE & PRACTICE OF MIDWIFERY.

By the late W. S. PLAYFAIR, M.D., LL.D., F.R.C.P., Physician-Accoucheur to H.I. and R.H. the Duchess of Saxe-Coburg and Gotha (Duchess of Edinburgh); Emeritus Professor of Obstetric Medicine in King's College, &c. NINTH EDITION. With over 200 Illustrations and 8 Plates. Two vols., demy 8vo, 28s.

## A MANUAL OF MIDWIFERY FOR MIDWIVES. By Fancourt

BARNES, M.D., Consulting Physician to the Royal Maternity Charity, London. With numerous Illustrations. NINTH EDITION. Crown 8vo, 6s.

## A COURSE OF PRACTICAL HISTOLOGY. By Edward Albert

SCHÄFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College. SECOND and CHEAPER EDITION. With numerous Illustrations, crown 8vo, 7s. 6d.

## CLINICAL MANUAL FOR THE STUDY OF MEDICAL CASES.

Edited by JAMES FINLAYSON, M.D., LL.D., President of the Faculty of Physicians and Surgeons, Glasgow, &c. With Special Chapters by Sir W. T. GAIRDNER, K.C.B., F.R.S., Emeritus Professor of Medicine in the University of Glasgow, on the Physiognomy of Disease; Professor ALEXANDER ROBERTSON, St. Mungo's College, Glasgow, on Insanity; the late Professor COATS on the Throat; Professor STEPHENSON, University of Aberdeen, on Disorders of the Female Organs; Dr. SAMSON GEMMELL, Professor of Clinical Medicine in the University of Glasgow, on Physical Diagnosis. THIRD and CHEAPER EDITION, Revised, with Illustrations, crown 8vo, 8s. 6d.

## VERTEBRATE EMBRYOLOGY. A Text-Book for Students and

Practitioners. By the late A. MILNES MARSHALL, M.D., D.Sc., M.A., F.R.S., Professor in the Victoria University; Beyer Professor of Zoology in Owens College; late Fellow of St. John's College, Cambridge. With numerous Illustrations, 8vo, 21s.

## LECTURES ON CHEMICAL PATHOLOGY IN ITS RELATION TO

PRACTICAL MEDICINE. Delivered at the University and Bellevue Medical Schools, New York City. By C. A. HERTER, M.D., Professor of Pathological Chemistry, University and Bellevue Medical Schools, New York; Visiting Physician to the City Hospital; late Consulting Physician to the Babias Hospital; Consulting Pathological Chemist to the Craig Colony for Epileptics, &c. Crown 8vo. 7s. 6d.

## A DICTIONARY OF PRACTICAL SURGERY. By various British

Hospital Surgeons. Edited by CHRISTOPHER HEATH, F.R.C.S., Hulme Professor of Clinical Surgery in University College, London; Surgeon to University College Hospital; Member of the Council and Court of Examiners of the Royal College of Surgeons of England. In 2 vols., comprising 1864 pages. THIRD EDITION. Royal 8vo. Price 32s. bound in cloth; or in half-morocco, marbled edges, 42s.

---

London: SMITH, ELDER & CO., 15, Waterloo Place, S.W.

# INDEX—(Continued).

## TRADE AND MISCELLANEOUS ADVERTISEMENTS.

### COVER.

PAGE

**CHEMISTS & DRUGGISTS:—**
- British Oxygen Co.—Oxygen .......... iii

**FOODS:—**
- Fry's Malted Cocoa .......... iii
- Welford & Sons—
  - Humanized Milk .......... ii
  - Asses' Milk .......... ii

**MINERAL WATERS:—**
- Apollinaris Co.—Apenta Water .......... iv
- Ingram & Royle—
  - Evian Source Cachat .......... iii

---

**AMBULANCES, &c.:—**
- St. John Ambulance—
  - Invalid Carriages .......... 14

**ANATOMICAL MECHANICIANS:—**
- Grossmith's Artificial Legs, &c. .......... 67

**BICYCLES, &c.:—**
- Swift Cycles .......... 14

**BOTTLE MERCHANTS:—**
- Isaacs .......... 70
- Islington Bottle Co. .......... 70
- Kilner Bros., Ltd. .......... 70

**CARRIAGES, MOTORS, &c.:—**
- Armstrong—
  - Coachmen's and Grooms' Liveries 14
- B., Roehampton—
  - Napier Landaulette .......... 14
- Drykitt—Motor Clothing .......... 14
- Keele & Co.—
  - Darracq Landaulette .......... 14
- Reo Motors, Ltd.—
  - Reo Motor Cars .......... 15
- Star Engineering Co.—
  - Motor Cars .......... 15
- 67, George-street, Portman-square—
  - Secondhand Carriages .......... 14

**CHEMISTS & DRUGGISTS:—**
- Aeosan Co.—
  - Carbonic Acid Oxygen Baths .......... 95
- Allen & Hanburys—
  - Solurol .......... 59
  - Antitoxins .......... 51
  - Byno-Hypophosphites .......... 44
  - Medical Izal .......... 43
- Andrus & Andrus—
  - Formolyptol .......... 24
- Antikamnia Chemical Co.—
  - Antikamnia Tablets .......... 25
- Armbrecht, Nelson & Co.—
  - Pyrethrum .......... 67
- Armour & Co.—
  - Glycerine Extract of Red Bone Marrow .......... 49
- Battley & Watts—Liquors .......... 50
- Bengue & Co.—
  - Analgesic Balsam .......... 69
  - Ethyl Chloride .......... 69
- Bristol-Myers Co.—
  - Sal. Hepatica .......... 61
- British Antitoxine Manufacturing Co.—
  - Antitoxine .......... 61
- Bullock & Co.—
  - Pepsina Porci .......... 35
  - Acid Glycerine of Pepsine .......... 35
  - Improved Gregory Powder .......... 36
  - Aural Ovoids .......... 35
- Chemische Fabrik Von Heyden—
  - Xeroform .......... 55
  - Collargol .......... 55
  - Salit .......... 55
  - Novargan .......... 55
- Christy & Co.—
  - Glyco-Thymoline .......... 33
  - Glyco-Heroin .......... 32

**CHEMISTS—(Continued).** PAGE
- Comar & Son—
  - Nourry's Iodinated Wine .......... 55
  - Cacodylate of Sodium .......... 55
  - Lecithine .......... 65
- Denver Chemical Co.—
  - Antiphlogistine .......... 36
- Dinneford's Fluid Magnesia .......... 60
- Duncan, Flockhart & Co.—
  - Chloroform .......... 28
  - Chloryl Anæsthetic .......... 28
- Fairchild Bros. & Foster—
  - Pepsencia .......... 40
- Fassett & Johnson—Emol-Keleet .......... 11
- Fellows—Syr. Hypophos. Co., Fellows 53
- Giles, Schacht & Co.—
  - Schacht's Fluid Pepsine .......... 34
- Greef & Co.—Kélène .......... 96
- Hewlett & Son—
  - Mist. Pepsinae Co. c. Bismutho .. 38
- Horsford Acid Phosphate .......... 54
- Huggins—Ozone Paper for Asthma .. 60
- Kreochyle Co.—
  - Barff Boro-Glyceride .......... 64
- Kutnow & Co.—
  - Kutnow's Powder .......... 31
- Lambert Pharmacal Co.—
  - Listerine .......... 30
- Martindale—
  - Granular Effervescent Preparations .......... 23
- Matthaei & Co.—
  - Ferro-Mangan .......... 51
  - Bromo-Mangan .......... 51
  - Iodo-Mangan .......... 51
- Merck—
  - Dionine .......... 46
  - Iodipin .......... 46
  - Stypticin .......... 46
  - Veronal .......... 46
  - Perhydrol .......... 46
  - Tannoform, &c. .......... 46
- Newbery & Sons—
  - Pulvis Jacobi Ver. .......... 60
  - Ingluvin .......... 29
  - Borobenphene-Heil .......... 52
  - Glycobenphene-Heil .......... 52
- Parke, Davis & Co.—
  - Chloretone .......... 37
- Pierre's Eau Dentifrice .......... 63
- Raimes & Co.—
  - Slinger's Nutrient Suppositories .. 62
- Reitmeyer & Co.—
  - Catheterpurin .......... 64
- Saccharin Corporation—Novocain .... 62
- Salamon & Co.—
  - Chloroform .......... 60
  - Æther Puriss .......... 60
- Sanatogen Co.—Sanatogen .......... 18
- Smith, Ltd.—
  - Chloroform .......... 42
  - Tela Vesicatoria .......... 42
  - Emp. Canth. Liq. .......... 42
- Society of Chemical Industry in Basle—Phytin .......... 54
- Squire & Sons—
  - Aromatic Aperients .......... 39
  - Phosphate Preparations .......... 39
  - Formate Formulas .......... 39
  - Nuclein Novelties .......... 39
- Wand Manufacturing Co.—Pills .......... 59
- Willows, Francis, Butler & Thompson, Ltd.—
  - Pollantin .......... 63
- Wright, Layman & Umney—
  - Liquor Carbonis Detergens .......... 12
- Zimmermann, A. & M.—
  - Beta Eucain Lactate .......... 50
  - Urotropin .......... 50
  - Herbanin .......... 53

**FOODS:—**
- Allen & Hanburys—
  - Allenburys Diet .......... 45
- Aylesbury Dairy Co.—Humanoid .... 65

**FOODS—(Continued).** PAGE
- Benger's Food, Ltd.—
  - Benger's Food .......... 26
- Blatchley's Diabetic Preparations .... 65
- Bonthron & Co.—
  - Diabetic Foods .......... 63
- Brand & Co.—Meat Juice .......... 64
- Burroughs, Wellcome & Co.—
  - Wyeth Beef Juice .......... 47
- Callard & Co.—
  - New Diabetic Foods .......... 62
- Cerebos Salt .......... 21
- Clarke & Sons—Nursery Milk .......... 61
- Coleman & Co.—Wincarnis .......... 64
- Fairchild Bros. & Foster—
  - Panopepton .......... 41
- Nestlé & Anglo-Swiss Condensed Milk Co.—Milo Food .......... 20
- Nicolay & Co.—Hæmatogen .......... 27
- Oxo .......... 63
- Peek, Frean & Co.—
  - Tilia Cocoa .......... 20
  - „ Biscuits .......... 20
- Protene Foods .......... 60
- Savory & Moore—Best Food .......... 48
- Tibbles' Vi-Cocoa, Ltd.—
  - Vi-Cocoa .......... 21
- Van Abbott & Sons—Gluten Flour .... 65
- Van Houten's Cocoa .......... 19
- Valentine's Meat Juice Co.—
  - Meat Juice .......... 96
- Verini—Goat's Milk .......... 95
- Watson & Co.—
  - Skipper Sardines .......... 62

**FURNITURE, &c.:—**
- Army and Navy House Furnishing Company .......... 11
- Carter—Invalid Furniture .......... 16
- Foot & Son—
  - Self-adjustable Wheel Chairs .... 14
- Maple & Co.—Bedroom Furniture .... 17

**MED. & SURG. APPLIANCES:—**
- Bailey & Son—
  - Elastic Stockings .......... 17
  - Washable Trusses .......... 17
- Cox—X-Ray Tubes .......... 11
- Ernst—Orthopædic Apparatus .......... 67
- Holland—Instep Arch Sock .......... 67
- Hooper's Water Beds .......... 68
- Leslies, Ltd.—
  - Plasters, Surgical Dressings, &c... 22
- Maw, Son & Sons—
  - Artificial Limbs .......... 70
  - Orthopædic Appliances .......... 70
  - Hospital Furniture, &c. .......... 70
- May, Roberts & Co.—
  - Absorbent Tissue .......... 96
  - Cotton Wools .......... 96
  - Gamgee Tissue .......... 96
  - Lints .......... 96
  - Waterproof Sheetings .......... 96
- Millikin & Lawley—Osteology, &c. .. 87
- Pond—Toe Spring .......... 66
- „ Arch-Support Socks .......... 86
- Robinson & Sons—
  - Gamgee Tissue .......... 61
- Southall Bros. & Barclay—Tenax .... 66
- St. Dalmas & Co.—
  - National Rubber Adhesive Plaster 16
  - Leicester Surgical Strapping .......... 16
- Sykes, Josephine & Co.—
  - Corsets and Belts .......... 67

**MINERAL WATERS:—**
- Bishop & Anderson—
  - Brut Royal .......... 65
- Christy & Co.—
  - Arabella Water .......... 58
- Contrexeville Pavillon .......... 65
- Davis—Tarasp Water .......... 66
- Hogg & Son—Lithia Waters .......... 60

**MINERAL WATERS—(Continued).** PAGE
- Ingram & Royle—
  - Carlsbad Salt .......... 57
  - Wildungen .......... 56
- Marienbad, Kissengen, and Natural Springs Products Co.—Marienbad .. 18
- Sanlaville—Villacabras .......... 61

**PRINTERS & ENGRAVERS:—**
- Cooke & Co.—
  - Brass Name Plates and Lamps .... 14
- Culleton—
  - Brass Door Plates .......... 70
  - Heraldry, &c. .......... 70
- Moring—Brass Door Plates .......... 69

**SANITARY APPLIANCES, &c.:—**
- Condy's Fluid .......... 68
- Manlove, Alliott & Co.—
  - Steam Disinfecting Apparatus .... 11
- Newton, Chambers & Co.—Izal .......... 43
- Ozonair, Ltd.—
  - Ozone for Therapeutic Purposes .. 68
- Papkerchief Syndicate—Papkerchiefs 66
- Sanitas Co.—
  - Standard Disinfectants .......... 59
- Southall Bros. & Barclay—
  - Accouchement Sets .......... 68
  - „ Sheets, &c. .......... 68

**TAILORS, BOOTMAKERS, &c.:—**
- Emerson Boot Store—
  - Emerson Boot .......... 68
- Evans & Co.—
  - Summer Suits .......... 11
  - Frock Coat .......... 11
  - Evening Dress Suits .......... 11
- Holland—Natural Shaped Boots .......... 67

**TOBACCO, CIGARS, &c.:—**
- Masta Pipe Co.—Masta Pipe .......... 70

**VACCINE LYMPH:—**
- Allen & Hanburys—
  - Calf Lymph .......... 69
- Assoc. for Pure Vaccine Lymph .......... 69
- Jenner Institute for Calf Lymph .......... 69
- Renner's Calf Lymph Establishment .. 69
- Roberts & Co.—
  - Chaumier's Calf Lymph .......... 69
- Wyleys, Ltd.—Calf Lymph .......... 69

**WINES, BEER, SPIRITS, &c.:—**
- Back & Co.—
  - "G.B." Diabetic Whisky .......... 60
- Brown & Pank—
  - Fine Vintage Brandy .......... 60
- Buchanan & Co.—
  - Black and White Scotch Whisky .. 62
- Finsbury Distillery Co.—
  - Wolfe's Schnapps .......... 81
- Mackenzie & Co.—
  - Pure Highland Malt Whisky .... 66
- Martell's Three Star Brandy .......... 57
- Nicholson & Co.—
  - Dry Gin .......... 58
- Sawood & Co.—
  - Fromy's Medical Reserve Cognac 61
- Schluter & Co.—
  - Austrian Voeslau-Goldeck Wines 60

---

**MISCELLANEOUS:—**
- Claxton's Clutch Bedrest .......... 70
- Hancock—White Wrapping Paper .... 95
- Martin—P.O P. Postcards .......... 95
- No. 110, L.O., Strand—
  - P. & O. Surgeon's Uniform for sale 95
- Partridge & Cooper, Ltd.—
  - Referee Filing Cabinet .......... 10
- Reavell Bros.—
  - Electric Hygienic Food Warmer .. 66

---

EVERY FRIDAY.

# THE LANCET.

PRICE SEVENPENCE.

## SUBSCRIPTION, POST FREE.

| For the United Kingdom. | | To the Colonies and Abroad. | |
|---|---|---|---|
| One Year ... ... ... ... | £1 12 6 | One Year ... ... ... | £1 14 8 |
| Six Months ... ... ... | 0 16 3 | Six Months ... ... ... | 0 17 4 |
| Three Months ... ... ... | 0 8 2 | Three Months ... ... | 0 8 8 |

**Subscriptions** (which may commence at any time) are payable in advance

## ADVERTISING.

| | | |
|---|---|---|
| Books and Publications ... ... | Seven Lines and under | £0 5 0 |
| Official and General Announcements | Ditto. | 0 5 0 |
| Trade and Miscellaneous Advertisements and Situations Vacant ... ... ... | Ditto. | 0 4 6 |
| | Every additional line | 0 0 6 |

Situations Wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

An original and novel feature of "The Lancet General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to insure insertion the same week) should be delivered at the Office not later than Wednesday, *accompanied by a remittance.*

Answers are now received at this Office, by special arrangement, to advertisements appearing in The Lancet.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. Charles Good, The Lancet Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

The Lancet can be obtained at all Messrs. W. H. Smith & Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

**OFFICES: 423 and 424, STRAND, LONDON, W.C.; and 1, 2, and 3, BEDFORD STREET Adjoining.**

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnieres, Paris.

# Baillière, Tindall & Cox's

## SELECTED LIST

### CROOK'S HIGH-FREQUENCY CURRENTS.

*"This work offers a practical summary of the more important details in connection with the medical electricity of high frequency currents, and no one interested in this mode of treatment can afford to pass it by unread."—ARCHIVES OF RONTGEN SOCIETY.* Pp. x. + 206. With 44 Illustrations. Price 7/6 net.

### TUCKEY'S HYPNOTISM and SUGGESTION.

*With an Introductory Chapter by Sir FRANCIS R. CRUISE, M D., D.L., K.S.G., Honorary Physician to the King in Ireland.*

*"Dr. Tuckey treats of his subject exhaustively both as regards history, theory, and practice, and the reader will find many prejudices removed and fallacies unmasked."—GENERAL PRACTITIONER.*

Fifth Edition. Pp. xxviii. + 340. Price 10/6 net.

### WILLIAMS' MINOR MALADIES.

*"The medical man desires a concisely written handbook full of practical hints and definite methods of treatment which have proved useful. ...... Dr. Williams's book fulfils these requirements."—LANCET.* Pp. x. + 384. Price 5/- net.

### LATHAM'S PULMONARY CONSUMPTION.

*"The information, which is original and practical, is given with a perspicuity and precision which makes the reading of it a pleasure."—ST. GEORGE'S HOSPITAL GAZETTE.* Third Edition. Pp. viii. + 260. Price 5/- net.

### McKISACK'S DICTIONARY of MEDICAL DIAGNOSIS.

*This treatise on the Signs and Symptoms observed in Diseased Conditions by HENRY LAWRENCE McKISACK, M.D., M.R.C.P. Lond., and Physician to the Royal Victoria Hospital, Belfast, should command the attention of all physicians.*

Pp. xii. + 583. With 77 Illustrations. Price 10/6 net.

### POLITZER'S DISEASES of the EAR.

*Translated at the personal request of the Author and edited by M. J. BALLIN, M.D., and C. H. HELLER, M.D.*

*"The most valuable book of reference on aural surgery, as it contains reference to all that is known on the subject."—LANCET.*

Fourth Edition. Pp. xiv. + 884. With 346 Original Illustrations. Price 25/- net.

### CAMPBELL'S TREATMENT.

*This work by HARRY CAMPBELL, M.D., F.R.C.P., Physician to the North-West London Hospital, has been cordially received as a most useful handbook and should in a very short time become as popular as it is useful.*

Pp. viii. + 421. Price 5/- net.

### MAY & WORTH'S DISEASES of the EYE.

*"We know of no work of the kind in which so excellent and profuse a display of pictorial art has been made use of."—MEDICAL PRESS AND CIRCULAR.* Pp. viii. + 400. With 335 Illustrations, plain and coloured. Price 10/6 net.

### KITT'S COMPARATIVE GENERAL PATHOLOGY.

*Translated from the German by Dr. WILLIAM W. CADBURY, Assistant Demonstrator of Pathology. Edited by Dr. ALLEN J. SMITH, Professor of Pathology in the University of Pennsylvania.*

Royal 8vo. Pp. xiv. + 472. With 4 Coloured Plates and 131 Illustrations. Price 25/- net.

*All Students' Books supplied. Catalogues post free.*

**BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden,
London.**

# THREE NEW BOOKS

## JUST READY.

One Royal 8vo. 911 pp.
Cloth, price 24s. net.

## TREATMENT OF DISEASE

By **REYNOLD WEBB WILCOX** M.A., M.D.,
LL.D., Professor of Med. at the N. Y. Post-Graduate Med. School and Hospital, &c.

While etiology is important, pathology is interesting and a sound basis, and **diagnosis is essential,** it is from a thorough and **broad knowledge of therapeutics** in its larger sense that the practitioner will achieve his greatest success. With these facts in view this book has been written.

One Royal 8vo. 371 pp. With 178 Illustrations (16 coloured). Cloth, price 20s. net.

## SURGICAL DISEASES OF THE CHEST

By **CARL BECK, M.D.,**
Professor of Surgery in the N. Y. Post Graduate Med. School and Hospital, &c.

The enormous possibilities of Bacteriology, Asepsis, and the Roentgen method in the Thoracic Region have been properly considered. Stress has been laid on diagnostic points and by accentuating the border-line character of the work, the book has been rendered of especial value to the General Practitioner.

One Crown 8vo. 135 pp. With 16 Illustrations. Cloth, price 2s. net.

## HYGIENE OF THE LUNG
### IN HEALTH AND DISEASE.

By Professor Dr. **LEOPOLD von SCHRÖTTER.**

Translated by H. W. ARMIT, M.R.C.S., L.R.C.P.

Hygiene is essentially a social science, and the Author has been happy in his selection of the limits necessary for lay instruction.

Catalogue and Descriptive Circulars on application.

LONDON: **REBMAN Ltd.** 129, Shaftesbury Av., W.C.

---

JUST PUBLISHED

By **HARRISON CRIPPS,**
Senior Surgeon to St. Bartholomew's Hospital.

## CANCER OF THE RECTUM.

Especially considered with regard to its Surgical Treatment.

INCLUDING A TABLE OF 380 CONSECUTIVE CASES.

Fifth Edition, price 5s. net.

BY THE SAME AUTHOR. JUST PUBLISHED.

## DISEASES OF THE RECTUM.

INCLUDING THE JACKSONIAN ESSAY.

Third Edition, with numerous Illustrations, price 10s. 6d. net.

J. & A. Churchill, 7, Great Marlborough-street.

---

## By HENRY MORRIS.

## THE SURGERY OF THE KIDNEY AND URETER.

In Two Volumes. Extensively Illustrated by Wood Engravings.

"The most complete, the most thorough, and the most satisfactory any treatise on the surgery of the kidney and ureter with which we are acquainted, contains a vast amount of information thoroughly digested and very readable."—THE LANCET.

"The abundant fulness of knowledge displayed by the author, and the great accuracy in regard to minute details, places this production in the very first rank, and marks it out as the most practical and exhaustive treatise on the subject."—THE CLINICAL JOURNAL.

"Mr. Morris has enriched the surgical literature of this country by the publication of those two handsome volumes. The work as a whole bears the stamp of soundness and breadth of view. It is most exhaustive and without doubt the most important work which has yet appeared on this subject."—THE PRACTITIONER.

*By the Same Author.*

## THE INJURIES AND DISEASES OF THE GENITAL AND URINARY ORGANS.

CASSELL & CO., Limited.

---

## LEWERS'S DISEASES OF WOMEN.

SIXTH EDITION, 12th Thousand, Crown 8vo, 10s. 6d.

A Practical Text-book. By **ARTHUR H. N. LEWERS,** M.D. (Lond.), F.R.C.P. (Lond.), Senior Obstetric Physician to the London Hospital, &c.

***By the same Author.***

## CANCER OF THE UTERUS.

Its Diagnosis & Treatment.

**With the After-Results in a Series of Cases treated by Radical Operation.** 10s. 6d. net.

"The book is a treatise, pathologically, surgically, and clinically of standard value, and deserves to be widely known and studied."—BRITISH MEDICAL JOURNAL.

London: H. K. Lewis, 136, Gower-street, W.C.

---

The GREATEST MEDICAL & PHILOSOPHICAL WORK of the DAY
The unanimous medical teaching of 2200 years in a nutshell.

## MEDICAL PHILOSOPHY:

*Man's Peculiarities, Weaknesses, Diseases, Degeneration, and Remedies.*

Showing the simplicity of the Science of Health and Disease, as taught by the best writers in all ages, in all parts of the world.

## By W. RUSSELL.

The author found it difficult to reconcile the medical teaching of 2000 years that disease arises from morbid humour or putrefaction with the modern theory that disease is caused by microbes until he read the following extracts. He now proposes that "putrefaction" and "bacteria" are synonymous. If this be proved, it harmonises the principal medical theories from the time of Hippocrates to the present day.

*Extracts from the Presidential Address at the 66th Annual Meeting of the British Association, by Sir Joseph Lister, Bart., D.C.L., LL.D., P.R.S.:—*

"...... Pasteur had shown that putrefaction was a fermentation caused by the growth of microbes. ...... Putrefaction of microbic origin."

Cloth, demy 8vo, 518 pp. 21/- net.

London: HENRY KIMPTON, 13, Furnival Street, Holborn, E.C.

# CHARLES GRIFFIN & CO., LTD., PUBLISHERS.

JUST OUT. FOURTH EDITION. Thoroughly Revised. Reset Throughout. With Tables and Illustrations. 21s. net.

# POISONS:

## THEIR EFFECTS AND DETECTION.

By **ALEXANDER WYNTER BLYTH,** M.R.C.S., F.I.C., F.C.S., &c., Barrister-at-Law; Public Analyst for Devon, &c. and **MEREDITH WYNTER BLYTH,** B.A.Cantab., B.Sc.Lond., F.I.C., F.C.S., Public Analyst for the Boroughs of Brighton and Eastbourne.

CONTENTS:—I.—Historical Introduction. II.—Classification—Statistics—Connexion between Toxic Action and Chemical Composition—Life Tests—General Method of Procedure—The Spectroscope—Examination of Blood and Blood Stains. III.—Poisonous Gases. IV.—Acids and Alkalies. V.—More or less Volatile Poisonous Substances. VI.—Alkaloids and Poisonous Vegetable Principles. VII.—Poisons derived from Living or Dead Animal Substances. VIII.—The Oxalic Acid Group. IX.—Inorganic Poisons. *Appendices:* Treatment, by Antidotes or otherwise, of Cases of Poisoning.—INDEX.

*THE LANCET* SAYS OF THIS WORK:—"The best source of reference on the chemistry of poisons."

**FOODS: Their Composition and Analysis.** By A. W. BLYTH, M.R.C.S., F.I.C., F.C.S., and M. W. BLYTH, B.A., B.Sc., F.C.S. Fifth Edition, Revised, Enlarged, and Rewritten. 21s.
"Enriched with all the recent discoveries."—CHEM. NEWS.
"Simply indispensable."—THE LANCET.

**FLESH FOODS: Their Chemical, Microscopical,** and Bacteriological Examination. By C. AINSWORTH MITCHELL, M.A., F.I.C., Member of Council, Society of Public Analysts. With Tables, Illustrations, and a Coloured Plate. 10s. 6d.
"A book which NO ONE whose duties involve considerations of food-supply CAN AFFORD TO BE WITHOUT."—MUNICIPAL JOURNAL.

**FERMENTS AND THEIR ACTIONS.** Text-book on the Chemistry and Physics of Fermentative Changes. By CARL OPPENHEIMER, Ph.D., M.D. 7s. 6d net.
"Such a veritable *multum in parvo* has never before appeared."—BREWERS' JOURNAL.

**TOXINES AND ANTITOXINES.** By Carl Oppenheimer, Ph.D., M.D. Translated by C. A. MITCHELL, M.A., F.I.C., F.C.S. A companion volume to "FERMENTS," by the same Author. Crown 8vo, with Diagrams, 7s. 6d. net.
"The preparation of the book has been so conscientiously carried out that it is one that we can heartily recommend."—SANITARY RECORD.

**PRACTICAL SANITATION.** By George Reid, M.D., D.P.H., Med. Off. Staff. County Council. With Appendix (Rewritten) on Sanitary Law by HERBERT MANLEY, M.A., M.B., D.P.H., Barrister-at Law. 13TH EDITION, Revised. 6s.
"A HANDBOOK useful to SANITARY INSPECTORS and ALL interested in sanitary matters."—SANITARY RECORD.

**SANITARY ENGINEERING: A Practical Manual** of Town Drainage & Sewage and Refuse Disposal. By FRANCIS WOOD, A.M.Inst.C.E., F.G.S. 2ND EDIT., Revised. 8s. 6d. net.
"A veritable pocket compendium of sanitary engineering."—PUBLIC HEALTH ENGINEER.

**SMOKE ABATEMENT: A Manual for Medical** Officers of Health, Manufacturers, Inspectors, Engineers, and others. By WM. NICHOLSON. In handsome Cloth, with 59 Illustrations. 6s. net
"We welcome such an adequate statement on an important subject."—BRITISH MEDICAL JOURNAL.

**PHYSICO-CHEMICAL TABLES: for the Use of** Analysts, Physicists, and others. By JOHN CASTELL-EVANS, F.I.C., F.C.S.
Vol. I.: Chemical Engineering, Physical Chemistry. 24s. net.
Vol. II.: Chemical Physics, Pure and Analytical Chemistry. [*Shortly.*

*** *A COMPLETE DESCRIPTIVE CATALOGUE OF MEDICAL WORKS SENT FREE ON APPLICATION.*

**LONDON: CHARLES GRIFFIN & CO., LTD., EXETER ST., STRAND.**

---

## A SELECTION OF
# CASSELL & COMPANY'S MEDICAL WORKS.

NOW READY. PRICE 3/6 NET.

# BILHARZIOSIS

By **FRANK COLE MADDEN, M.D. (Melb.), F.R.C.S. (Eng.),**
Professor of Surgery, Egyptian Government School of Medicine; Senior Surgeon, Kasr-el-Ainy Hospital, Cairo.

*With Numerous Illustrations reproduced from Photographs and Photo-Micrographs of Specimens and Cases.*

This important work deals with the subject fully and lucidly, and describes the life-history of the parasite, its geographical distribution, modes of infection, development, &c. It includes chapters on "The Pathological Changes Produced by Bilharzia," "Bilharziosis of the Urinary System," "Bilharziosis of the Intestinal Tract," "Bilharziosis of the Female Generative Organs," and "Bilharziosis of the Skin and Subcutaneous Tissues."

**Elements of Physics for Medical** STUDENTS. By **FREDERIC JAMES M. PAGE,** B.Sc.Lond., F.I.C., Lecturer on Physics and Chemistry to the London Hospital Medical College, Examiner in Physics and Chemistry to the Society of Apothecaries, London. With Coloured Frontispiece and 230 Figures in the Text. 5s.

**Clinical Methods:** A Guide to the Practical Study of Medicine. By **ROBERT HUTCHISON,** M.D., F.R.C.P., Assistant Physician to the London Hospital, and **HARRY RAINY,** M.A., M.D., F.R.C.P Edin., F.R.S.E., Hon. Sec. of and Examiner to the Royal College of Physicians, Edinburgh, &c. With 9 Coloured Plates and upwards of 150 Illustrations. Revised Edition. (21st Thousand.) 10s. 6d.

**Materia Medica and Therapeutics.** An Introduction to the Rational Treatment of Disease. By **J. MITCHELL BRUCE,** M.A., LL.D. Aberd., M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital. Revised and Enlarged Edition. (47th Thousand.) 7s. 6d.

**First Lines in Midwifery.** A Guide to Attendance on Natural Labour for Medical Students and Midwives. By **G. ERNEST HERMAN,** M.B. Lond., F.R.C.P., Consulting Obstetric Physician to the London Hospital, &c. With 81 Illustrations. New and Revised Edition, with a Supplementary Chapter containing the Rules of the Central Midwives Board, with Comments. (22nd Thousand.) 5s.

CASSELL & COMPANY, LIMITED, LONDON, PARIS, NEW YORK, TORONTO, AND MELBOURNE.

# SCIENCE PROGRESS IN THE TWENTIETH CENTURY.

*A QUARTERLY JOURNAL OF SCIENTIFIC THOUGHT.*

Edited by N. H. ALCOCK, M.D., and W. G. FREEMAN, B.Sc., F.L.S.

*Just Out.*] JULY. 178 pp. 5s. net. [*Commencing New Volume.*

CONTENTS:—

THE APPLICATION OF EXPERIMENT TO THE STUDY OF CANCER. By E. F. BASHFORD, M.D.

THE USE OF THE ELECTROMAGNET IN PETROGRAPHY. By T. CROOK, A.R.C.Sc.I., F.G.S. (Illustrated.)

THE COAGULATION OF THE BLOOD. By GEORGE A. BUCKMASTER, M.A., D.M. Oxon.

PROTEIN METABOLISM. By E. P. CATHCART, M.D.

THE WORK OF EMIL FISCHER AND HIS SCHOOL ON THE CHEMISTRY OF THE PROTEINS. By R. H. ADERS-PLIMMER, D.Sc.

SOME RECENT RESEARCH UPON THE BIRTH AND AFFINITIES OF CRYSTALS. By Prof. H. A. MIERS, D.Sc., F.R.S. (Illustrated.)

DOUBLE SALTS. By IDA FREUND. (Illustrated.)

THE MECHANISM OF TISSUE RESPIRATION. By H. M. VERNON, M.A., M.D.

**JOHN MURRAY, ALBEMARLE STREET, W.**

---

THIRD EDITION, REVISED. JUST PUBLISHED.

# ANÆSTHETICS AND THEIR ADMINISTRATION.

*A TEXT-BOOK FOR MEDICAL AND DENTAL PRACTITIONERS AND STUDENTS.*

By FREDERIC W. HEWITT, M.V.O., M.A., M.D. Cantab., Anæsthetist to His Majesty the King; Physician-Anæsthetist to St. George's Hospital; Consulting Anæsthetist and Emeritus Lecturer on Anæsthetics at the London Hospital. Illustrated. 8vo, 15s. net.

MACMILLAN & CO., LTD., LONDON.

---

# A HANDBOOK OF CLIMATIC TREATMENT INCLUDING BALNEOLOGY.

## By WILLIAM R. HUGGARD, M.A., M.D., F.R.C.P. *8vo, 12s. 6d. net.*

JOURNAL OF BALNEOLOGY AND CLIMATOLOGY.—"This is unquestionably the best book which has appeared on this subject in the English language. ...... A work which fully deserves all the praise which can be bestowed upon it. There is, so far as we know, nothing in the English language which can compare to Dr. Huggard's book in completeness, in lucidity, and simplicity."

GENERAL PRACTITIONER.—"For the first time, and thanks to Dr. Huggard's plan, a complete classification of climates throughout the world is now made possible. Nor, and it had better be stated again to avoid misconception, does the thoroughness of the investigation lead to dulness. Far from it, for the whole book is interesting and in many parts actually fascinating. ...... Of the actual material presented to us under this heading [Physiology of Climate] it is difficult to write without the use of superlatives ...... for whether in the consideration of the results of temperature on metabolism, muscle, nerve, respiration, &c., or in dealing with the effects of pressure on circulation or red blood cells, the author is equally learned, lucid, and happy. ...... One of the most scientific, interesting, and useful books it has been our good fortune to handle."

BIRMINGHAM MEDICAL REVIEW.—"The book is a really admirable addition to medical literature and should be widely appreciated."

BRITISH MEDICAL JOURNAL.—"This is no hastily put together compilation, but the outcome of much study, consideration, and personal observation on which both the author and his readers are to be congratulated."

THE LANCET.—"We may congratulate Dr. Huggard upon the success which has attended his treatment of his subjects, for the result has been to produce a volume which is a mine of useful information, written in a manner most convenient for reference and in interesting style. ...... He is always clear in his statements and practical in his recommendations."

BRISTOL MEDICO-CHIRURGICAL JOURNAL.—"The writer ...... has had exceptional opportunities of working at the subject, and has collected materials steadily during many years. He has accordingly produced, as he might be expected to do, a standard work founded greatly on personal experience. ...... His book may be taken as a trusty guide by all those who seek information on climatic and balneological questions."

THE TIMES.—"The book is carefully and clearly written, and is creditably free from any tendency to exaggerate the effects with which it deals."

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.—"Alles in Allem: Auf verhältnismässig kleinem Raum, 536 Seiten, ein reicher Inhalt, das Ergebnis vieljähriger Arbeit."

MACMILLAN & CO., LTD., ST. MARTIN'S STREET, LONDON, W.C.

---

# CONSTIPATION.

By G. SHERMAN BIGG, F.R.C.S.E.,

Author of "ANGLO-INDIAN'S HEALTH."

London: Baillière, Tindall, & Cox, 8, Henrietta-street, Covent Garden.

---

Works on the

# DEFORMITIES,

Debilities, and Deficiencies of the Body.

By HEATHER BIGG, F.R.C.S. Ed.

SPINAL CURVATURES

Illustrated. 240 pp. 5s. net.

*"We must not fail to recognise the care and fulness with which the author has treated his subject. The book will be of value as containing the best exposition of treatment."*—THE LANCET.

SPINAL CARIES

Illustrated. 82 pp. 2s. 6d. net.

DEFORMITIES OF THE HEAD AND NECK

72 pp. 2s. 6d. net.

AMPUTATIONS AND ARTIFICIAL LIMBS

(Out of print.)

HERNIA AND THE CORRECT USE OF TRUSSES

(In preparation.)

J. & A. CHURCHILL, London.

---

# THE HYGIENIC HANDBOOK

(228 pages), giving full details, in catalogue form, of the PRODUCTS, PREPARATIONS, and APPLIANCES passed by the EXAMINING BOARD OF THE INSTITUTE OF HYGIENE, will be forwarded to any Member of the Medical Profession post free on receipt of a postcard addressed to the Secretary.

INCORPORATED INSTITUTE OF HYGIENE,
Devonshire Street, Harley Street, W.

---

SECOND EDITION of

# THE OPERATIVE SURGERY OF MALIGNANT DISEASE.

By HENRY T. BUTLIN, F.R.C.S., D.C.L.

With 12 Engravings. 8vo, 14s.

J. & A. CHURCHILL.

---

# By MR. KEETLEY.

## ORTHOPÆDIC SURGERY.

Demy 8vo, 530 pp. Illustrated. Price 16s

## GASTRIC ULCERS;

*THEIR SURGICAL TREATMENT.*

Demy 8vo, 54 pp. Price 2s. 6d.

## COMPLICATED FRACTURES.

Demy 8vo, 37 pp. Price 1s.

London: Smith, Elder & Co., 15, Waterloo-place, S.W.

# Kelly & Noble's Gynecology and Abdominal Surgery

**VOLUME I.**
**JUST READY**

This work is doubly valuable, for not only the gynecologist and general practitioner will find it an exhaustive treatise, but the surgeon also will find here the latest technic of the various abdominal operations. It possesses a number of valuable features not to be found in any other publication covering the same fields. It contains **a chapter upon the bacteriology and one upon the pathology of gynecology,** dealing fully with the scientific basis of gynecology. In no other work can this information, prepared by specialists, be found as separate chapters. There is a large chapter devoted entirely to **medical gynecology** written especially for the physician engaged in general practice. Heretofore the general practitioner was compelled to search through an entire work in order to obtain the information desired. **Abdominal Surgery** proper, as distinct from gynecology, is fully treated, embracing operations upon the stomach, upon the intestines, upon the liver and bile-ducts, upon the pancreas and spleen, upon the kidneys, ureter, bladder, and the peritoneum. Special attention has been given to **modern technic,** and illustrations of the very highest order have been used to make clear the various steps of the operations. Indeed, the 650 original illustrations are truly magnificent, being the work of **Mr. Herman Becker** and **Mr. Max Brodel,** of the Johns Hopkins Hospital. A number are in colours.

**Edited by HOWARD A. KELLY, M.D., Professor of Gynecology in Johns Hopkins University; and CHARLES P. NOBLE, M.D., Clinical Professor of Gynecology in the Woman's Medical College, Philadelphia. Two imperial octavo volumes of 900 pages each, containing 650 original illustrations, some in colours. Cloth, per volume, 35s. net.**

# Eisendrath's Surgical Diagnosis

**JUST ISSUED**

In this entirely new work Dr. Eisendrath sets forth in a systematic and comprehensive way the means of correctly diagnosing each disease and injury amenable to surgical treatment. **The subject has been presented from the clinical standpoint,** and the injuries and diseases grouped in the manner in which the surgeon or general practitioner considers them in examining the patient for the purpose of making a diagnosis. The importance of **differentiating simulating affections** has been constantly borne in mind, and every assistance given along these lines. Special effort, too, has been exerted to furnish the means of making a correct diagnosis in the early stages of the condition. The chapters on cystoscopy and urethral catheterization are unusually instructive. Dr. Eisendrath, being a strong advocate of the teaching of surgery by the education of the eyes, has had specially made a large number of superb illustrations. These four hundred and eighty-two pictures are not only artistic but practical, for **each one gives practical assistance in diagnosing the condition** under consideration.

**By D. N. EISENDRATH, M.D., Adjunct Professor of Surgery, College of Physicians and Surgeons, Chicago. Octavo of 775 pages, with 482 original illustrations, 15 in colours. Cloth, 28s. net.**

# Kerr's Diagnostics of Children's Diseases

**JUST READY**

Dr. Kerr has discussed his subject with the *objective symptoms* as the foundation, presenting them so clearly and concisely that his work will be of inestimable value to every practitioner. The constant aim throughout has been to render a correct diagnosis as early in the course of the disease as possible, and for this reason differential diagnosis is presented from the very earliest symptoms. Just sufficient of etiology and pathology has been introduced to assist in arriving at right conclusions; and the sequelæ of the various diseases have been considered only to the extent that they may be of value in anticipating them and thus aiding in their early diagnosis. The many original illustrations are all of a high order. The *physician will find these pictures a source of much information and help* in his daily pediatric work.

**By LE GRAND KERR, M.D., Professor of Diseases of Children, Brooklyn Post-Graduate Medical School. Octavo of 550 pages, illustrated. Cloth, 21s. net.**

---

**Send for Saunders' Complete Illustrated Catalogue.**

## W. B. SAUNDERS COMPANY

9, HENRIETTA STREET, LONDON, W.C.

**Australian Agency: 430, Bourke St., Melbourne, where our books can be bought at London prices.**

Just Published. Crown 8vo, 5s.

## Injuries of the Eyes of the Employed and the Workmen's Compensation Act:

PROBLEMS IN PROGNOSIS.

By **W. M. BEAUMONT,**
Surgeon to the Bath Eye Infirmary.

"A convenient and pleasantly written account is provided. The teaching is sound and trustworthy."—THE LANCET.

London: H. K. Lewis, 136, Gower Street, W.C.

---

Now ready, price 1s.

## APPLICATION OF TRUSSES

to HERNIÆ. Clinical Lecture delivered at King's College Hospital. By the late JOHN WOOD, F.R.S., Senior Surgeon to King's College Hospital. Reprinted from "Medical Examiner," and Illustrated by Matthews Brothers, Surgical Instrument Makers, 10, New Oxford street, W.C.
London: Henry Renshaw, 356, Strand.

---

IN TWO PARTS.

## DISEASES OF THE ANUS & RECTUM

By **D. H. GOODSALL, F.R.C.S.,**
*Late Senior Surgeon, Metropolitan Hospital; and St. Mark's Hospital;*
AND
**W. ERNEST MILES, F.R.C.S.**
*Surgeon Cancer Hospital; Surgeon Gordon Hospital.*
PART I., 8vo., 7s. 6d. net. PART II., 8vo, 6s. net.
LONGMANS, GREEN & CO., LONDON, NEW YORK, BOMBAY

---

Medium 8vo. 132 pp. Illustrated.

## MOVABLE KIDNEY

A CAUSE OF
INSANITY, HEADACHE, NEURASTHENIA, INSOMNIA, MENTAL FAILURE, and other DISORDERS of the NERVOUS SYSTEM;
A CAUSE ALSO OF
DILATATION of the STOMACH.
*With a description of Goelet's Operation.*
BY
**C. W. SUCKLING, M.D.(LOND.),**
Consulting Physician to the Queen's Hospital, Birmingham.

Birmingham: CORNISH BROTHERS, Ltd., 37, New Street.
London: SIMPKIN, MARSHALL & Co., Ltd.

*5/- net; by post, 5/4 net.*

---

## STAMMERING

*ITS NATURE AND TREATMENT.*

By **EMIL BEHNKE**

Price 1s., post free, of Mrs. Emil Behnke, 18, Earl's-court-square, S.W. who receives Stammerers for Treatment. REFERENCES to Doctors whose stammer Mrs. Behnke has cured, and to others.

---

GLOBE says: "H.T.S.E. is an excellent book for public speakers."
DAILY NEWS says: "Explains in a practical way."

375 pp. 3/3. post free from the Author,
CHARLES SEYMOUR,
358, Strand, W.C.

## How to Speak Effectively.

Mr. SEYMOUR gives private lessons in Elocution (Lectures, Extempore Addresses, After-Dinner Speeches), Voice Culture, Accent.
Terms forwarded:—Studio, 358, Strand, London.

---

Book Bargains.—Burton's Arabian Nights, 17 vols., unexpurgated, £15 15s.; Cruikshanks' Water Colours, 42s., for 21s; Haydn's Dictionary Dates, (25s. net), for 16s.; "Times" Encyclopædia, 35 vols., cloth £13; Yarrell's Birds, 4 vols., last Edition, £3 3s.; Bartholomew Survey Gazetteer, British Isles (21s. net), for 12s 6d.; Burke's Peerage, 1906 (42s. net), for 25s; Goodwin's British Mezzotinters, 2 vols. (42s. net), for 22s.; Massé's Catalogue Pewter Exhibition. Plates, 1904, 35s; Scottish Pewter Ware (15s. net) for 9s. 6d. Sports, Big Game, Natural History, Science. &c. 1200 Books List free — Baker's Bookshop, John Bright-street, Birmingham.

---

NOW READY.

## JOURNAL of the ROYAL STATISTICAL SOCIETY.

Vol. LXX, Part 2. 30th June, 1907.

*PRINCIPAL CONTENTS.*

1. The Alleged Increase of Insanity. By NOEL A. HUMPHREYS, I.S.O.
2. The Herring Fishery. By ALBERT E. LARK, F.C.A.
3. The Decline in Number of Agricultural Labourers in Great Britain. By Lord EVERSLEY.

ROYAL STATISTICAL SOCIETY, 9, Adelphi Terrace, Strand, W.C.

---

Crown 8vo, 240 pp., paper cover, price 1s., by post 1s. 3d.

## THE BATTLE OF THE CLUBS:

Being a Reprint of the Special Articles furnished to THE LANCET by their Commissioner as the outcome of an exhaustive Enquiry into the Relations between the Medical Profession and Medical Aid Societies all over the Kingdom. This book deals with the numerous questions which arise in the consideration of what is now admitted to be the most important problem in medical politics, and no member of the profession can afford to be without the special information that it conveys.

THE LANCET Offices, 423 & 424, Strand, W.C.; and
1 & 2, Bedford-street, adjoining.

---

Crown 8vo, price 6d., by post 6½d.

## DIFFICULTIES UNDER THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1895:

Being a Reprint of the Series of Articles on this subject which appeared in THE LANCET. Doubtless many will care to possess, and will find extremely useful, an elucidation of the principal points on which doubts and difficulties have arisen, and the various decisions and official interpretations which have been given with regard to them.

THE LANCET Offices, 423 & 424, Strand, W.C.; and
1 & 2, Bedford-street, adjoining.

---

## CLOTH CASES FOR BINDING

THE HALF-YEARLY VOLUMES OF

## "THE LANCET"

Can be obtained of any Bookseller in town or country. Or from THE LANCET Office.

**Price 2s. each; by post, 2s. 3d.**

Volumes for the first half of the year 1907 can also be had, bound in cloth, gilt lettered, price 18s.

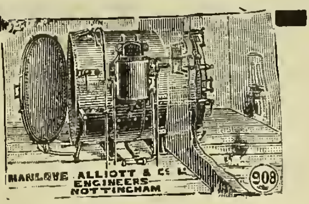
Office: 423, Strand, W.C., and 1 & 2, Bedford-street, adjoining.

---

The "Referee" Filing Cabinet

Write for illustrated & Priced Catalogue No16

PARTRIDGE & COOPER LTD
191, Fleet St London, E.C.


MANLOVE ALLIOTT & Co Ld ENGINEERS NOTTINGHAM
908

## STEAM DISINFECTING APPARATUS.

The Alliott & Paton Improved Washington Lyon Disinfector, employing high pressure "saturated" steam, ensures absolutely certain results It performs the operation of disinfection simply and quickly, and may be used in every recognised method—with high pressure, low pressure, or current steam, hot air, or in conjunction with Formalin or other chemical disinfectant.

**STRONG. SIMPLE. RAPID. PERFECT.**

---

*Steam Sterilising Apparatus.*

---

**MANLOVE, ALLIOTT & CO., Ld.,**
ENGINEERS, NOTTINGHAM.

---

*YOU CANNOT IMPROVE ON THIS.*

**ARMY & NAVY**
**HOUSE FURNISHING CO.,**
**LIMITED,**
18, REGENT STREET, WATERLOO PLACE, LONDON, S.W.
*Chairman*—Major-General HALE-WORTHAM, R.A.

The only Perfect and economical system of Hire Purchase.
For Prospectus write Secretary as above.

---

Telegraphic address—
EVANOPOLIS, LONDON.
Telephone—
527 Mayfair.
Established January, 1886.

## W. EVANS & CO.

*Tailors and Breeches Makers,*
*Ladies' Habit and Costume Makers,*
77, GT. PORTLAND STREET
LONDON, W. (adjoining Queen's Hall)

WE KEEP EXPERT CUTTERS AND EMPLOY FIRST-CLASS WORKMEN

***Summer Vacation, 1907.***

| | |
|---|---|
| FLANNEL COAT & TROUSERS | from £2 10 |
| YACHTING SUITS (consisting of Blue Serge Reefer and White Serge Trousers ... ... ... ... | 3 gns. |
| NORFOLK COATS ... | from £2 6 6 |
| FROCK COATS ... ... | from £2 15 0 |
| EVENING DRESS SUITS | from £5 5 0 |

Gentlemen are invited to inspect our large and choice selection of goods for Town and Country wear at prices strictly moderate compatible with good work.

TRUTH says: "*Our latest discovery in tailoring is Evans, 77, Gt Portland-street, London, W., who can actually fit.*"

---

# Indispensable to all Users of X-Ray Tubes

NEW DEVICE for fixing between Induction Coil and X-Ray Tube which

## ENTIRELY OBVIATES THE REVERSION OF THE X-RAYS.

*Price and particulars on application to the Manufacturers—*

**HARRY W. COX, LTD.,** MAKERS OF X-RAY AND ALL KINDS OF ELECTRO-MEDICAL APPARATUS,
CONTRACTORS TO THE ADMIRALTY, WAR OFFICE, POST OFFICE, COLONIAL OFFICE, INDIAN GOVERNMENT, &c,
1A, Rosebery Avenue, and 15-21, Laystall Street, London, E C.

---

## After Vaccination

and in cases of Acne, Eczema, Hard Skin Growths, Scarlet Fever, Measles and whenever the skin is moist or sensitive, Emol-Keleet Natural Dusting Powder speedily soothes and allays irritation. Besides having the characteristics of superior Fuller's Earth, Emol-Keleet possesses a high therapeutic value. It is anti-pruritic, mildly astringent, highly absorbent, of impalpable texture, and perfectly innocuous.

**FREE SAMPLES.** The Medical Profession are requested to apply for samples and particulars of this authoritatively recommended Dusting Powder. Post free from FASSETT & JOHNSON, 31 and 32 Snow Hill, London, E.C.

*We ask the favour that*
*Physicians will prescribe*

# Liquor Carbonis Detergens

(Registered Trade Mark)

## (WRIGHT'S)

*The necessity for this request is made apparent in the 'Chemist & Druggist,'*

*which says—*

"The B.P. preparation (Liq. Picis Carbonis) is, it should be noted,

**MUCH BEHIND THE ORIGINAL**

and differs from it in composition, and therefore in efficacy. We call the attention of Dispensers to this point because it seems to be natural to suppose that when the B.P. imitates an article such as 'Liquor Carbonis Detergens' it is not immoral to substitute the official preparation for the proprietary one. This is, of course, absurd, because the compilers of the British Pharmacopœia have

**NO MORE RIGHT TO INFRINGE**

other people's proprietary rights than the man in the street."

*FORTY YEARS' REPUTATION.*

**Wright, Layman & Umney**
(LIMITED),
SOUTHWARK, LONDON.

# MEDICAL MEN AND WORKMEN'S COMPENSATION.

## *MEDICAL INSURANCE COMMITTEE.*

A Committee of Medical Men has been formed, at the instance of THE LANCET and the BRITISH MEDICAL JOURNAL, to consider the liabilities which will be imposed on medical men by the New Workmen's Compensation Act which comes into force on July 1st, 1907.

After careful inquiry the Medical Insurance Committee is able to announce that arrangements have been made for offering special facilities and terms to Medical Practitioners who insure through the Committee with

# The GUARDIAN ASSURANCE COMPANY, Ltd.

(ESTABLISHED 1821)

**HEAD OFFICE: 11, LOMBARD STREET, E.C.**

| | | | |
|---|---|---|---|
| **Subscribed Capital - -** | **£2,000,000** | **Total Assets over - -** | **£6,000,000** |
| **Capital paid up - - -** | **£1,000,000** | **Total Income over - -** | **£1,000,000** |

The Medical Insurance Committee is now prepared to arrange Insurances for Medical Practitioners in respect of:—

**Fire.** **Life.**
**Accidents to Employees.** **Personal Accident.** **Burglary and Theft.**

*(Please detach here and return completed proposal to undermentioned address.)*

## PROPOSAL FORM.

*Agency*—MEDICAL INSURANCE COMMITTEE,
c/o BRITISH MEDICAL ASSOCIATION,
6, Catherine Street, Strand, London.

*Policy No.* ..........................

### FULL AND COMPLETE INDEMNITY UNDER WORKMEN'S COMPENSATION ACTS, 1906, 1900, & 1897, THE EMPLOYER'S LIABILITY ACT, 1880, FATAL ACCIDENTS ACT, 1846, AND AT COMMON LAW FOR ACCIDENTS TO:—

| Number Employed. | Persons Assisting in Conduct of Practice. | Total wages and other earnings. | Premium. | | |
|---|---|---|---|---|---|
| | | £ | £ | s. | d. |
| | Medical Assistance { at 10s. per cent. on the sum expended during the year on Medical Assistants, Locum Tenents, Dispensers and Boys ... ... ... ... | | | | |
| | Trained Nurse ... at 7s. 6d. per cent. on salary ... ... ... | | | | |
| | (In estimating total salaries or wages a sum of £25 to be added for each person boarded or housed.) | | | | |
| | *N.B.—It is necessary to include in the wages the estimated amount paid to temporary as well as regular employees.* | | | | |

| Number Employed. | Domestic Servants, In-door and Out-. | PREMIUM. | | | | |
|---|---|---|---|---|---|---|
| | | Rate per head. | | Total Premium. | | |
| | | s. | d. | £ | s. | d. |
| | Indoor Servants ... ... ... ... ... | 2 | 6 | | | |
| | Gardeners ... ... ... ... ... | 5 | 0 | | | |
| | Coachmen, Grooms and Stablemen ... ... | 7 | 6 | | | |
| | Chauffeurs ... ... ... ... ... | 20 | 0 | | | |
| | Occasional Labour* ... ... ... ... | * See note below. | | | | |

*** To Occasional or Casual Domestic Labour.**—25 per cent. on total premium for permanent domestic staff, with minimum of 2s. 6d. a year. By permanent domestic staff is meant regular staff of domestic servants not including medical assistants.

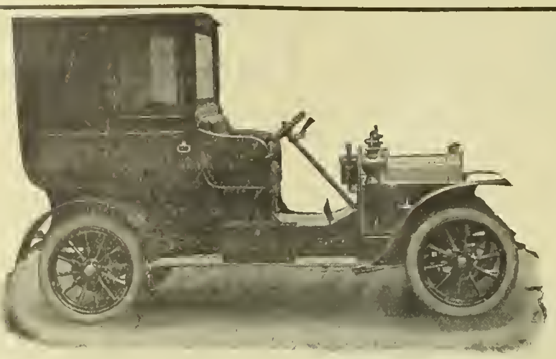
*Please cover risks for me as marked in the above Schedule, and advise amount premium due, also please send prospectus relating to*..................................................................*Insurance.*
*(Write Clearly).*

*Name*..............................................................................

*Full Address*.....................................................................

*Date*.............................................

**The Committee will allow a commission upon all Insurances, other than Fire, effected through its Agency.**
***Particulars of other advantages given on application.***



**1907 10-12 H.P.**

# DARRACQ

## LANDAULETTE

with Best English Body.

*ONLY* **£397** *complete.*

*ONLY FROM* **J. KEELE & CO.,** 28, BROOK ST., BOND ST., W.

---

For Sale, 18-20 4-Cylinder Napier Single LANDAULETTE. Perfect order. All spare parts. Stepney wheel. Durandel Non Skids. Can be seen and tried by appointment. Price £400.—Write B., Grove House, Roehampton, S.W.

---

Secondhand Carriages.—Intending purchasers should send for OFFORD'S MONTHLY LIST of 150 Carriages by best makers, for SALE or HIRE, at moderate prices.—Post free from 67, George-street, Portman square, London.

---

Coachmen's and Grooms' Liveries.—Large stock of Top Coats, Drab and Coloured; Summer Coats, Waistcoats, Drab and White Doeskin Cloth Breeches, Buckskin Breeches, Top Boots, Hats and Gloves, in first-class condition. Lot of new Liveries, never worn. Best Cloths; best West-end of London make. Cheap. On approval. Send for Price List.—Armstrong, Livery Tailor and Motor Suits, 33, Connaught-street, Marble Arch, Hyde Park, W. Telephone, 1999 Paddington.

---

## ST. JOHN AMBULANCE ASSOCIATION.

### INVALID TRANSPORT SERVICE

THE ST. JOHN AMBULANCE ASSOCIATION

(under the patronage of many leading physicians and surgeons), for the conveyance of sick and injured patients (infectious cases excepted) to and from all parts. The Association has a fully-trained Staff and all necessary appliances.—For particulars apply to the Transport Manager, St. John's Gate, Clerkenwell, E.C. Telegrams: First-aid, London Telephone, 861 Holborn.

---

SWIFT
10/- DOWN
SECURES "THE WORLD'S BEST CYCLE" £6.10.0. OR ON PAY AS YOU RIDE TERMS
If the best cycle is good enough write the SWIFT CYCLE CO. LTD. COVENTRY. for lists, terms, etc. You'll then find the best cheap enough, & easy enough to get.
DEPT. W 56.

---

For Motor Clothing, Liveries, etc.

Dryfutt Ltd.

369, Oxford Street, W.,
NEAR Bond St. Tube Station.

---

# FOOT'S

## SELF-PROPELLING & SELF-ADJUSTABLE WHEEL CHAIRS

Constructed on new and improved principles which enables the occupant to change the inclination of the back or leg-rest either together or separately to any desired position, meeting every demand for comfort and necessity; made with single or divided extensible leg-rests. No other Wheel Chair is capable of so many adjustments.

*We make many different styles of Easy, Self-adjustable Invalids' Chairs. Prices from* 40/-.

WRITE FOR CATALOGUE F 10.

**J. FOOT & SON,** Patentees and Manufacturers, 171 NEW BOND ST., LONDON, W

---

# BRASS NAME PLATES

## AND LAMPS

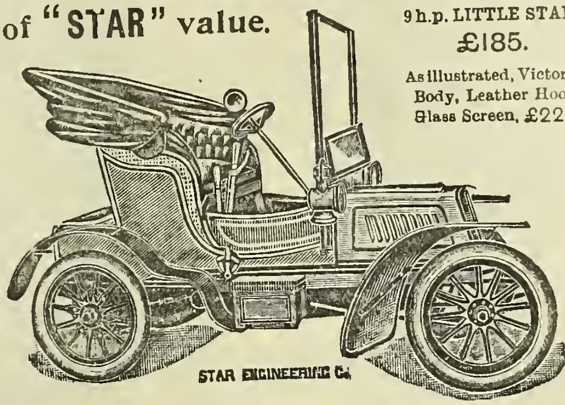
Specially adapted for **THE PROFESSION.** The Name Plates manufactured in Stout Metal, Deeply Engraved, Mounted on Polished Mahogany Blocks with Fastenings ready for fixing, from **10/6** each.

**J. W. COOKE & CO.,**
PRACTICAL BRASS PLATE ENGRAVERS. MEMORIAL BRASSES.
75, FINSBURY PAVEMENT, LONDON, E.C.
SEND FOR NEW ILLUSTRATED LIST.
*Telephone 573 London Wall.*

# PROOF POSITIVE

of "STAR" value.

In a letter received from the Royal Automobile Club, dated April 3rd (copy of which we shall be glad to send to anyone on application), it is stated that the 14 H.P. "STAR" Car supplied to that Club for driving lessons, and general instruction, had been in continual use for over 13 months. The Car had run 10,000 miles and the repairs and replacements to the mechanical portion of the car had been *nil*, gears showing only the slightest wear, and the ball bearings being perfect.


STAR ENGINEERING Co.

9 h.p. LITTLE STAR,
£185.

As illustrated, Victoria Body, Leather Hood, Glass Screen, £225.

SEND FOR LIST NO. 4 TO—

**STAR ENGINEERING CO.,** Wolverhampton.

London Agents: STAR MOTOR AGENCY, Ltd., 16, UPPER ST. MARTIN'S LANE, LONDON.

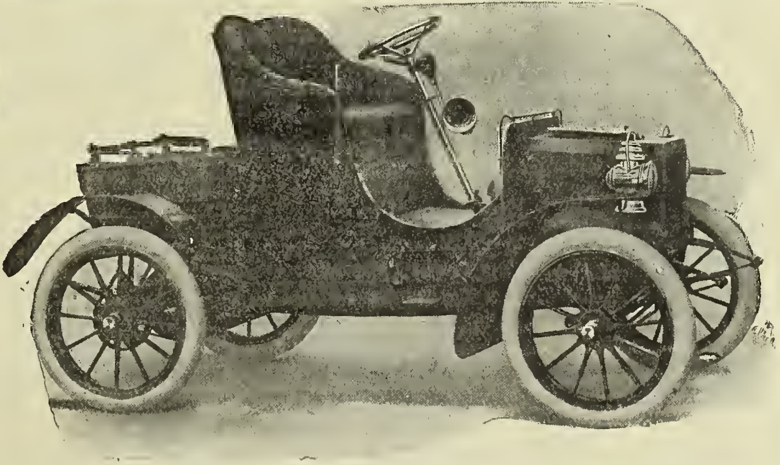
---

# REO

## CARS

do what is claimed for them, neither more nor less:

**FIRST COST MODERATE.**
**UPKEEP LOW.**
**SILENT AND SIMPLE.**
**WILL CLIMB ANY HILL.**



10 h.p **REO**, complete as illustrated, with folding back seat, **£165.**

**STURDY AND STRONG.**

*Immediate Delivery.*

18 h.p. **REO** Touring Car,
**£300** complete.

Telegraphic Address: "Jelamco, London."
Telephone No. 59 Westminster.

**REO MOTORS, LTD.,**
Broad Sanctuary, Westminster,
London, S.W.

AGENT—PEACOCK AUTOCAR CO., 10, Exchange Square, Glasgow.

## "NATIONAL"

(TRADE MARK)

## RUBBER ADHESIVE PLASTER

(ANTISEPTIC).

**Will stick at ONCE and PERFECTLY in any temperature, without warming.**

In Tins containing 1 yard—

On Strong Cotton Cloth, 7 inches wide ... per tin 1/-
On Holland ,, ,, 7 inches wide ... ,, 1/3

*

Very Tenacious

*

*

Non-Irritant.

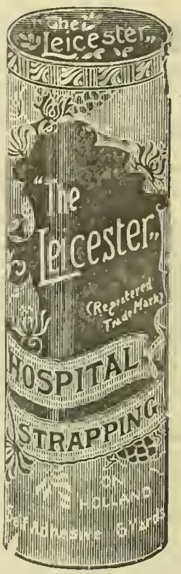
*

On Spools containing 10 yards :—

| | ¼ in. | ½ in. | ¾ in. | 1 in. | 1½ in. | 2 in. | 2½ in. | 3 in. | |
|---|---|---|---|---|---|---|---|---|---|
| On Strong Cotton Cloth | 9/- | 10/- | 12/6 | 15/- | 19/- | 23/- | 27/- | 30/- | per doz. |
| On Holland | — | 10/6 | 13/6 | 16/- | 20/- | 24/- | 29/- | 33/- | |

## "THE LEICESTER"

(TRADE MARK)



## SURGICAL STRAPPING

(SELF-ADHESIVE).

Specially prepared for

**HOSPITAL AND ACCIDENT PRACTICE.**

Per 6-yard Tin :—

HOLLAND ... ... 2/4
PURE CALICO ... 1/10

*May be obtained from any Wholesale House.*

MAKERS :

## A. de St. DALMAS & CO., Leicester.

**Contractors to His Majesty's Government.**

ROYAL WARRANT TO HIS MAJESTY THE KING.

ILLUSTRATED CATALOGUES Post Free.

# CARTERS

**COMPLETE HOSPITAL FURNISHERS,**

BY SPECIAL APPOINTMENT Invalid and General Furniture Manufacturers to the British Home and Hospital for Incurables.

## 6A, NEW CAVENDISH ST., PORTLAND PLACE, LONDON, W.

Telephone No.
1040 MAYFAIR.

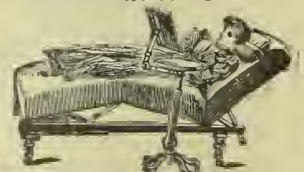
Adjustable Couches and Beds from £1 17s. 6d.

Operating and Dressers' Tables.
Reclining Boards, 25/-.
Walking Machines.
Portable W.C.'s.
Air and Water Beds, Urinals, &c.
Electric Bells.
Reclining Chairs.

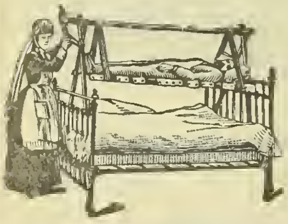
## Literary Machine,

*For holding a book or writing desk in any position over an easy chair, bed or sofa, obviating fatigue and stooping. Invaluable to Invalids and Students.* Prices *from* 17/6.

| | |
|---|---|
| Bed Rests | 7/6 |
| Leg Rests | 10/- |
| Crutches | 8/6 |
| Bed Baths | 12/6 |
| Commodes | £1 1/- |



## INVALID COMFORTS

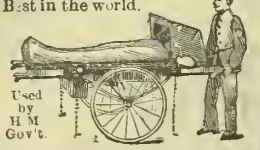


Bed Lifts, £4 10s.

Carrying Chairs from £1 1s.

Self-Propelling Chairs from £2 2s.

AMBULANCES—Hand or Horse. Best in the world.

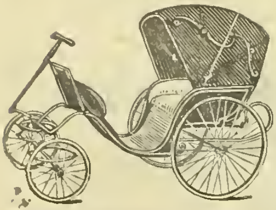

Used by H M Gov't.

Adopted by the Hospitals Association for the Street Accident Service of London.

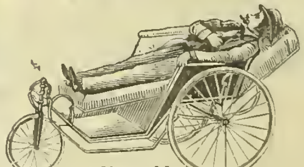
Breakfast-in-Bed Tables, 25/-

## BATH CHAIRS FROM £1 10s.

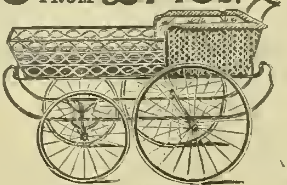
20 GOLD MEDALS AND AWARDS.



Bath Chairs for Hand or Pony.



Adjustable Bath Chair or Spinal Carriage.



Spinal Carriages.

THE LARGEST STOCK IN THE WORLD

**MAPLE & CO**

EASILY FIRST FOR

**BEDROOM FURNITURE**

20,000 BEDSTEADS AND COTS
1,000 BEDROOM SUITES
10,000 SETS OF TOILET WARE

HUNDREDS OF TONS OF HAIR are used annually in the Bedding manufactory besides a correspondingly large quantity of Down, Feathers and Wool

**BED LINENS, QUILTS, BLANKETS, CURTAINS, BLINDS, CARPETS, MATTINGS**

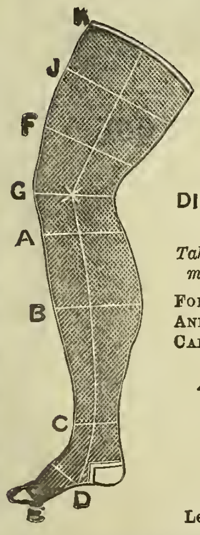
UNEQUALLED VARIETY AND VALUE

PRICES QUITE DIFFERENT FROM THOSE QUOTED ELSEWHERE
CATALOGUES & PATTERNS FREE ON RECEIPT OF REQUIREMENTS

LONDON BUENOS AIRES PARIS

**BAILEY'S ELASTIC STOCKINGS**

*From* 3/6 *each.*



**KNEE CAPS**

*From* 2/6

DIRECTIONS FOR MEASUREMENT:

*Take the Exact Circumference, and make no allowance for Pressure.*

| | | | |
|---|---|---|---|
| FOR A KNEE CAP ... | F | G | A |
| ANKLET ... ... ... | C | D | E |
| CALF-PIECE ... ... | A | B | C |

STOCKING
A B C D E
Length A to D

THIGH STOCKING.
K J F G A
B C D E
Length K to G G to D

**W. H. BAILEY & SON,**
38, OXFORD STREET, LONDON.

**BAILEY'S WASHABLE AND OTHER TRUSSES**

*For the Bath, Sea-Bathing, &c.*

MADE AND FITTED ON THE PREMISES.

INFANTS' TRUSSES with Pneumatic Pads.
Single, 5/-; Double, 7/6 each.

38, OXFORD ST. LONDON

# In Treatment of GOUT

All medical authorities are agreed that Alkaline **natural** mineral waters are strongly indicated for eliminating from the system uric acid concretions and chalky deposits.

# MARIENBAD

## RUDOLF-SPRING

owing to its richness in Carbonic Acid, Carbonates of Lime, and Magnesium, effects this speedily without undue neutralisation of urine, and for this reason takes absolute front rank amongst **natural** Alkaline waters.

*Medical Men should apply for Samples and Brochure to*

**The MARIENBAD, KISSINGEN,**
and NATURAL SPRING PRODUCTS CO., Ltd.,
7, BOROUGH HIGH STREET, LONDON, S.E.

---

# SANATOGEN

## A MOST RELIABLE NUTRIENT

**A Powerful Restorative of the Nervous System.**
**An Unrivalled Reconstituent of the Blood.**

*Stimulates Mental and Physical Powers.*
*Promotes Sleep and Digestion.*

Largely employed as a Nutritive Tonic in Hospitals and other Public Institutions, and extensively prescribed and favourably reported upon by very many well-known Medical authorities.

*Samples & Literature on Application to*
THE SANATOGEN Cº 83, Upper Thames St. LONDON, E.C.

# The "Lancet" on Cocoa.

Of the beverages in common use (Tea, Coffee & Cocoa), Cocoa is the best, because—

1. It is not a mere stimulant; it is also a true food.
2. Its stimulant value is similar to that of beef tea, and its nutritive value bears comparison with that of milk.

Of test cocoas bought in the open market, Van Houten's proved to be the best; because—

1. It is the most finely sub-divided, leaving no sediment in the cup.
2. It is the most soluble and perfectly miscible, consequently the most economical in use.
3. It is the most readily digested in the gastric juices.
4. It contains the maximum proportion of the proximate principles of food.

These facts, **elicited by unbiassed scientific investigation (vide "Lancet," Jan. 7th and Feb. 4th, 1905)** place Van Houten's Cocoa in the front rank of modern dietetic preparations.

It is quickly absorbed in the stomach, leaving no undigested irritant residue, and is therefore pre-eminently suitable for invalids.

## VAN HOUTEN'S COCOA.

POWDER **TILIA** REGD. COCOA

BISCUITS

SOLE MANUFACTURERS:

**PEEK, FREAN & CO., LTD., LONDON, S.E.**

# MILO FOOD

## FOR INFANTS

Has been Awarded the

**GOLD MEDAL**

at the

**CAPE TOWN EXHIBITION,**

also the

**CERTIFICATE OF MERIT by the INSTITUTE OF HYGIENE, LONDON.**

*Examined, Passed, and Exhibited by the Institute of Hygiene at 34, Devonshire-street, Harley-street, W., where the Food can be seen and its value explained.*

SAMPLE AND PAMPHLET FREE IN THE BRITISH ISLES ON APPLICATION TO

**HENRI NESTLÉ, 6 & 8, EASTCHEAP, LONDON, E.C.**

BY APPOINTMENT TO
H.M. THE KING.

BY APPOINTMENT TO
H.R.H. THE PRINCE OF WALES.

# CEREBOS SALT

## *Extract from* THE LANCET.

No. 4359. Vol. CLXXII. LONDON, SATURDAY, MARCH 16, 1907. [Pp. 120+56.

There is no mystery about CEREBOS SALT. It is simply salt to which has been added a definite proportion of phosphates. This addition serves two important ends—first, it prevents the salt from becoming wet and from caking; and, secondly, it adds substances of distinct dietetic importance. The added phosphates convert the deliquescent magnesium chloride present into dry magnesium phosphate and so CEREBOS SALT indefinitely preserves its fine dry and powdery state. It is therefore both culinary and a dietetic improvement. We are sometimes asked by correspondents as to whether there is anything harmful in CEREBOS SALT, the question having been prompted probably by the fact that in water it yields a turbid fluid due to insoluble phosphates of lime and magnesia. To this we can reply in the negative.

---

# PERFECTLY PURE BUT NOT INSIPID.

## "THE LANCET"

AND

TIBBLES' VI-COCOA

**THE LANCET** says:

"Vi-Cocoa must be assigned a place in the front rank of really valuable foods, since it is the embodiment of all the numerous principles contained in Malt, Hops, Kola, and Cocoa."

THE

## "BRITISH MEDICAL JOURNAL"

AND

TIBBLES' VI-COCOA

**The BRITISH MEDICAL JOURNAL says:**

"Vi-Cocoa is a very palatable beverage of great stimulating and sustaining properties."

## THE "MEDICAL MAGAZINE"

AND

TIBBLES' VI-COCOA

**The MEDICAL MAGAZINE says:**

"Medical practitioners will find a valuable weapon in Tibbles' Vi-Cocoa in combating the various conditions of nervous exhaustion and enfeebled digestion. The ingredients of which it is composed are carefully selected and of undoubted purity and strength."

## AN ANALYST

AND

TIBBLES' VI-COCOA

**From MATTHEW A. ADAMS, F.R.C.S.,**
F.I.C., F.C.S., *Trinity House, Maidstone; Public Analyst in the County of Kent and Past President of Society of Public Analysts.*

"In my opinion Vi-Cocoa is a happy combination, enhancing the food value of ordinary cocoas."

# LESLIES'

## PLASTERS, CRÊPE BANDAGES, THERMOMETERS, &c.

Inventors and Original Manufacturers of BROWN HOLLAND STRAPPING, in widths from ½ in. to 16 in. on reels and rollers. As used in all the Principal Hospitals in Great Britain and the Colonies.

## LESLIE'S SURGICAL PLASTERS.

**PLUMBI BASE—**

SURGICAL CASE, 8 different widths and descriptions, 10/6.

TAPES, ¼ to 1½ in., Calico or Pink Cambric, 1/- each; 9/- per doz. On Holland, ½ to 1½ in., 1/- each; 9/- per doz. 2 in., 1/3 each; 12/- per doz. 3 in., 1/6 each; 15/- per doz.

6-YARD TINS, 6 in., Calico or Pink Cambric, 2/6 each.

12-YARD TINS, 6 in., 4/6 each.

6-YARD TINS, 6 in., HOLLAND, 3/- each.

12-YARD TINS, 6 in., HOLLAND, 5/6 each.

Also in 10-yard Caddies and 100-yard Store Boxes, 6 inch, and 6-and 12-yard Roller Boxes, 16 inch, for Hospital use.

**RUBBER BASE—**

ADHESIVE or ZINC OXYD., SELF-ADHESIVE and ANTISEPTIC.

On FINE CALICO.

On SPOOLS, 6-yard Lengths—

| | | | | | | |
|---|---|---|---|---|---|---|
| Width: | ¼, | ½, | 1, | 1½, | 2, | 3 inches. |
| Price: | 8/- | 8/- | 12/- | 15/- | 18/- | 24/- per doz. |

On SPOOLS, 12-yard Lengths—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Width: | ¼, | ½, | 1, | 1½, | 2, | 2½, | 3 inches. |
| Price: | 12/- | 12/- | 17/- | 23/- | 26/6 | 32/6 | 36/- per doz. |

In TINS, 7 in. wide, 1 yard, 1/2.

On BROWN HOLLAND.

On SPOOLS, 5-yard Lengths—

| | | | | | |
|---|---|---|---|---|---|
| Width: | ½, | 1, | 1½, | 2, | 3 inches. |
| Price: | 10/- | 14/- | 16/- | 20/- | 27/- per doz. |

On SPOOLS, 10-yard Lengths—

| | | | | | |
|---|---|---|---|---|---|
| Width: | ½, | 1, | 1½, | 2, | 3 inches. |
| Price: | 14/- | 18/-, | 24/- | 30/- | 36/- per doz. |

In TINS, 7 in. wide, 1 yard, 1/6.

## LESLIE'S PHARMACEUTICAL PLASTERS

On CALICO or MOLESKIN, in 1- or 6-yard Tins—Plain or Porous.

Emp. Ammon. c. Hyd.
" Belladon. Leaf or Root Extract.
" Canthar.
" Cer. Sap.: Hyd. Co. (Scott's Dressing).
" Menthol, Opii, Roborans.
" Zinc Oxyd.

All in Plumbi or Rubber Base.

POROUS PLASTERS (all descriptions).
BREAST "
MUSTARD LEAVES.

## GENEVA CRÊPE BANDAGES. WOVEN EDGE.

Equal to any Crêpe Bandage in the Market.

ELASTIC—POROUS—WASHABLE.

Made in two qualities—Red Line: All Wool.
Orange Line: Half Wool.

RED LINE.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1½, | 2, | 2½ | 3, | 3½, | 4, | 5, | 6 inches. |
| 8/- | 10/- | 12/- | 14/- | 16/- | 18/- | 22/- | 26/- per doz. |

8 inch, 36/- per doz.; 11 inch, 42/- per doz.; 13 inch, 48/- per doz.

ORANGE LINE.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1½, | 2, | 2½, | 3, | 3½, | 4 | 5, | 6 inches. |
| 6/- | 8/- | 10/- | 12/- | 14/- | 16/- | 20/- | 24/- per doz. |

8 inch, 30/- per doz.; 11 inch, 36/- per doz.; 13 inch, 42/- per doz.

The 11- and 13-inch Binders are most useful in Obstetrics.

AVOID CHEAP WORTHLESS IMITATIONS.

## GENEVA CRÊPE DE SANTÉ BODY BELTS.

POROUS, allowing free perspiration.
Readily WASHABLE.
Much superior to the ordinary Flannel or Felt Belts.
Men's, 34, 36, 38, 40, 42 inches, 3/- each.
Ladies', Slender, Medium, and Full, Winter Weight 3/6 each; Summer Weight, 3/- each.

## LESLIE'S GUARANTEED CLINICAL THERMOMETERS.

2 min., 1/3; 1 min., 1/8; ½ min., 2/- each.
Magnifying Lens—
2 min., 2/2; 1 min., 2/6; ½ min., 3/- each.

Every Instrument guaranteed correct.

*EVERY DESCRIPTION OF BANDAGE AND SURGICAL DRESSING SUPPLIED.*

Please, when ordering from your Wholesale House, specify LESLIES'. Every packet of our preparations bears our Name.

## Contractors to His Majesty's Government and the Hospitals.

LISTS POSTED ON APPLICATION.

*LESLIES' goods may be obtained through all Drug or Sundry Houses, or direct from the Company—*

**LESLIES LTD.,** Hopetoun House, 5, LLOYD'S AVENUE, LONDON, E.C.
*25 Years in Walbrook.*

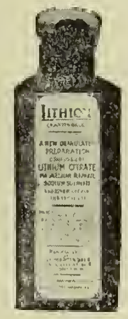
# Granular Effervescent Preparations

# "MARTINDALE"

TRADE MARK.

*A few are:—*

| | | Professional Prices per dozen bottles. (Single bottles at the same rate.) |
|---|---|---|
| | **Effervescent Glycerophosph. Co.**<br>Contains Glycerophosphates of Calcium, Iron, Magnesium, or Potassium ... ... ... ... ... ... ... | 24/- |
| | **Effervescent Magnesium Citrate** - - | 9/- & 16/- |
| ,, | **Lecithin** (3 grains in drachm) - | 43/- |
| ,, | **Piperazin** (A solvent of uric acid and urates.)<br>5 grains in drachm ... ... ... ... | 27/-, 54/-, & 102/- |
| ,, | **Piperazin c. Phenocoll**<br>In Painful Rheumatic Affections ... ... | 33/-, 60/-, & 114/- |
| ,, | * **Sodio-Magnesian Aperient**<br>* W. MARTINDALE was the first to Manufacture this Preparation. | 14/- 24/-, & 33/- |
| ,, | **Sodio-Magnesian Aperient c. Caffeine**<br>An Extremely Useful Preparation ... ... | 19/- & 30/- |
| ,, | **Sodium Phosphate** - - | 14/- & 24/- |
| ,, | **Sodium Sulphate** - - | 14/- & 24/- |



To secure Accurate and Reliable Therapeutic Action, we respectfully suggest the following form of prescription:—

℞ *Effervescent* ........................ *Martindale's Original Package.*

| | |
|---|---|
| **Lithion (non-effervescent)**<br>In Rheumatic Affections ... ... ... ... ... | Doz., 24/- & 43/- |

N.B.—Dose of Martindale's Granular Preparations is from One to Two Drachms.

*The above is of necessity only an abridged List. SAMPLES and Complete Lists will be gladly sent to Medical Men on receipt of card.*

## W. MARTINDALE, Pharmaceutical Chemist,

10, NEW CAVENDISH STREET, LONDON.

*Wires:* Martindale, Chemist, London. *'Phones:* Gerrard 4688; Paddington 1797.

# BOWEL WASHING

in the gastro-enteric disorders of children is an essential procedure. Why not employ a perfectly safe but highly efficient germicidal solution for this purpose?

## "Formolyptol"

is equal to 1-1000 sublimate solution and is, at the same time, devoid of irritant or toxic properties, and does not stain hands or linen. One to two tablespoonfuls to the pint is sufficiently strong for children.

ANDRUS & ANDRUS
46 Holborn Viaduct, London, E. C

Representing
THE PALISADE MFG. CO., New York

NO DRUG HABIT—NO HEART EFFECT.

# Antikamnia Tablets

OPPOSED TO PAIN.

## ANALGESIC. ANTIPYRETIC. ANODYNE.

In the administration of Remedies to relieve **PAIN,** the element of exhilaration should be considered, as many produce such delightful sensations as to make them dangerous to use.

Such is not the case with Antikamnia Tablets.

They are simply pain relievers—not stimulants—not intoxicants. Their use is not followed by depression of the heart.

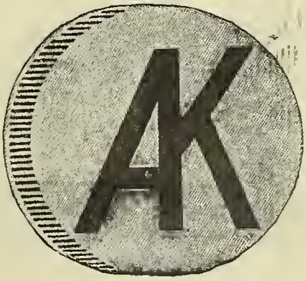
**ANTIKAMNIA TABLETS.** Usual dose, One or Two tablets every 3 or 4 hours.

**ANTIKAMNIA and HEROIN TABLETS.** In relieving Coughs, Bronchitis, Laryngitis, Pneumonia, Whooping Cough, Phthisis, Asthma, & Respiratory affections. Dose, One tablet every 2 or 3 hours as indicated.

**LAXATIVE ANTIKAMNIA and QUININE TABLETS.** Colds, Coryza, La Grippe, Chills and Fever, Malaria, Biliousness, &c. Dose, Two tablets every 3 hours as directed.

Antikamnia & its Combinations in 1 oz. packages only.

**THE ANTIKAMNIA CHEMICAL COMPANY,**
46, Holborn Viaduct,
London, E.C.



*The LONDON MEDICAL RECORD says:*

*"We have found it invaluable for old people, whose digestive powers are feeble, and also in convalescence from acute diseases."*

# BENGER'S FOOD

## For Infants, Invalids, and the Aged.

*GOLD MEDAL AWARDED Health Exhibition, London, Adelaide and Melbourne.*

---

When mixed with warm new milk, or milk and water, the digestive principles contained in the Food not only render the farinaceous elements soluble, but further, reduce the casein of the milk to a condition similar to that existing in human milk, so that hard indigestible masses cannot be formed in the stomach. The degree of digestion can be regulated.

---

**BENGER'S FOOD with milk forms a delicate and delicious cream, rich in all the elements necessary to maintain vigorous health.**

IT IS ENJOYED BY INFANTS, INVALIDS, CONVALESCENTS, AND THE AGED.

☛ *Sample, Analysis, and Report sent upon application to any member of the Medical Profession.*

---

BENGER'S FOOD may be obtained in various sized tins of leading Chemists, etc., everywhere ; wholesale of all Wholesale Houses ; or of

**BENGER'S FOOD, Ltd., Otter Works, MANCHESTER.**

Telegraphic Address : "BENGER'S, MANCHESTER."

## SUPERIOR TO COD LIVER OIL OR TINCTURE OF IRON.

# HOMMEL'S HÆMATOGEN

(Purified and concentrated Hæmoglobin 80%, chemically pure glycerine 20%, containing a slight trace of Aromatic Flavouring.)

## AN ENERGETIC BLOOD FORMER. IMPROVES THE APPETITE.

## FREE FROM ALCOHOL & ETHER

**EXTREMELY USEFUL** in Rickets, Scrofula, General Debility, Anæmia, Weak Heart, Neurasthenia, and Convalescence from illness such as Pneumonia or Influenza.

**VERY PALATABLE** and taken with the utmost relish even by children.

**FREE FROM BORIC ACID, SALICYLIC ACID,** or other chemical preservatives of any kind. Contains along with purified Hæmoglobin all the salts of fresh blood, and **valuable compounds of Phosphorus,** such as **Lecithin, Phosphate of Sodium,** and **Phosphate of Potassium,** together with the important albuminous constituents of the blood serum, all in a concentrated, purified, and undecomposed state.

**A BLOOD FORMER RICH IN ORGANICALLY-COMBINED IRON,** and a strengthening Dietetic Remedy of the highest value for children and adults in debility of any kind.

**FREE FROM BACTERIAL GROWTH. UNCHANGED BY KEEPING.** These important qualities are guaranteed by using the highest permissible temperature in the process of manufacture (130° to 140° Fahr. for 24 hours). No guarantee of this description is possible for preparations made by a cold process with ether.

*DOSE:*

**Infants** - From Half a Teaspoonful to One Teaspoonful, twice a day in milk.
**Children** - One or Two Dessertspoonfuls daily, either pure or mixed with any convenient liquid.
**Adults** - One Tablespoonful twice a day before the principal meals.

*Only supplied in FLUID, not in capsules or other forms.*

SAMPLES AND LITERATURE ON APPLICATION.

☞ In prescribing always state HOMMEL'S HÆMATOGEN, as spurious imitations are offered.

**NICOLAY & CO., 36, St. Andrew's Hill, London, E.C.**

# DUNCAN'S CHLOROFORM.

Below we append facsimile of the label now in use.

| | |
|---|---|
| CHLOROFORM<br>**DUNCAN'S PURE S.G. 1·490.**<br>PREPARED ENTIRELY FROM<br>BRITISH ETHYLIC ALCOHOL<br>BY<br>**DUNCAN, FLOCKHART & Co.,**<br>EDINBURGH & LONDON. | *NOTE.*—**This, which is prepared entirely from British Ethylic Alcohol, is the only CHLOROFORM which we supply as *Duncan's Pure,* S.G. 1·490.**<br>To be kept Cool, and not exposed to a Strong Light.<br>**POISON.** |

# CHLORYL ANÆSTHETIC

## (DUNCAN).

## (ABSOLUTE CHLORIDE OF ETHYL.)

*FOR*

General and Local Anæsthesia.

In 60 c.c. Tubes and in Glass Capsules of 3 and 5 c.c.

## DUNCAN, FLOCKHART, & CO.,

**Manufacturing Chemists, EDINBURGH.**

Tele-grams { "Dunhart, Edinburgh." "Dunhart, London."

London Branch: 143 Farringdon Rd., E.C.

Tele-phone { Edinburgh: No. 3274 Central; London: No. 10654 „

# THE CLINICAL APPLICATION OF INGLUVIN.

"The virtues of Ingluvin reside in a peculiar bitter principle* which enters into its composition. It is prescribed in the same doses and combinations as pepsin, and was introduced to the notice of the medical profession about 18 years ago. It is of special benefit in the relief of sick stomach. Ingluvin may be given with success when vomiting depends upon organic affections of the stomach, as in acute and chronic gastric catarrh and in gastric ulcer. Nausea, due to disease of either abdominal or pelvic viscera, as the liver, kidneys, uterus, and ovaries, is likewise relieved by the administration of this remedy. It allays the gastric irritability which accompanies tabes mesenterica and marasmus. Vomiting produced by over-indulgence in liquor has been subdued by its powers. It has been found of advantage in cases of sea-sickness, and in the relief of the gastric irritability of bottle-fed babes. Its peculiar province, however, is alleviation of the vomiting of pregnancy, in which it approaches the character of a specific. As everyone knows, this difficulty is frequently very intractable, and one approved remedy after another may be used without avail. To those who have witnessed repeated failures of medication, Ingluvin can be recommended as one of the most efficient remedies which we possess for the relief of this distressing symptom. Ingluvin is likewise beneficial in dyspepsia, when produced by functional inactivity. It is able to promptly check the diarrhœa which is caused by indigestion. By reason of its influence upon the stomach and bowels, Ingluvin is capable of marked services in cases of cholera infantum and cholera morbus. From the preceding account it will be seen that Ingluvin possesses an exceedingly important sphere of usefulness.

"Ten grains I found generally a sufficient dose. In some instances 20 grains were required, while in the milder forms of indigestion a 5 grain tablet, after each meal, accomplished the desired purpose. To infants I gave the remedy in doses of 1 or 2 grains.

"A series of cases during the past few years in which Ingluvin was administered with benefit has been selected as affording a typical example of the efficacy of Ingluvin. The total number amounted to 49, and a brief history is given of each case. They were classified as follows: 4 cases of cholera morbus; 8 of infantile diarrhœa; 9 of diarrhœa in the adult; 2 of dysenteric diarrhœa; 1 of acute indigestion; 3 of dyspepsia; 2 of dyspepsia with reflex symptoms; 1 of dyspepsia from uterine disease; 2 of flatulent dyspepsia; 1 of nervous dyspepsia; 2 of gastralgia; 2 of colic; 4 of gastric and gastro-intestinal catarrh; 1 of gastric ulcer; 1 of vomiting caused by alcoholism; 6 of vomiting of pregnancy."—*Abstract of a paper by John V. Shoemaker, A.M., M.D., in the* MEDICAL BULLETIN.

* Natural Dycholic Acid.

---

***Per oz., 4s., and in Tablets at same price.***

**Samples & Full List of W. R. Warner & Co.'s Preparations free to Practitioners.**

*British Depôt*—**F. NEWBERY & SONS, Ltd.** (Estab. A.D. 1746),
**27 & 28, Charterhouse Square, LONDON, E.C.**

# LISTERINE

**The standard American antiseptic for internal and external use.**

*Awarded Gold Medal (Highest Award) Lewis & Clark Centennial Exposition, Portland, 1905; Awarded Gold Medal (Highest Award) Louisiana Purchase Exposition, St. Louis, 1904; Awarded Bronze Medal (Highest Award) Exposition Universelle de 1900, Paris.*

The word Listerine assures to the Medical Profession a non-poisonous antiseptic of well proven efficacy; uniform and definite in preparation, and having a wide field of usefulness.

Listerine represents the maximum of antiseptic strength in the relation that it is the least harmful to the human organism in the quantity required to produce the desired result; as such, it is generally accepted as the standard antiseptic preparation for general use, especially for those purposes where a poisonous or corrosive disinfectant can not be used with safety. It has won the confidence of medical men by reason of the standard of excellence (both as regards antiseptic strength and pharmaceutical elegance), which has been so strictly observed in its manufacture during the many years it has been at their command.

The success of Listerine is based upon merit, i. e. the best advertisement of Listerine is—Listerine.

## Lambert Pharmacal Company,

**St. Louis, U.S.A.**

¶ In combating serious illness, it is doubly important to be assured that the patient is supplied with genuine Listerine, as the substitutes sometimes offered by the trade are generally of undetermined antiseptic strength, and too often worthless for the purpose for which they are required.

# KUTNOW'S POWDER

INDICATED IN

## Gastritis, Gall-Stones, Renal Calculi, Gout, Rheumatism and the Uric Acid Diathesis

Kutnow's Powder is a reproduction of the curative virtues of the most famous European Spas; it possesses the same medicinal qualities, but in a palatable condition. It dissolves uric acid and phosphatic sediments as well as other products difficult of elimination, while at the same time it produces a gently stimulating effect upon the organism, and thereby facilitates the speedy removal of insoluble and deleterious materials from the body.

### THE KING'S PHYSICIAN

**DR. E. O.,**

**Physician to His Majesty King Edward VII. at Marienbad,**

WRITES:

"I have for some time prescribed Kutnow's Powder for many of my patients as an after-cure to the treatment here in Marienbad, and have always received very good reports from them as to its efficacy. I consider Kutnow's Powder a most efficient purgative, as it produces a free, bilious motion, without discomfort, griping, or any bad after-effects. In many cases of inactivity of the liver, I was delighted with the prompt effect. I found it of good use in very bad cases of Dyspepsia, and can therefore conscientiously say that Kutnow's Powder is one of the best, most efficient, and agreeable aperient medicines.

" Marienbad, 9th September, 1902." " E.O., M.D."

**SAMPLES FREE TO PHYSICIANS**

### SIGN THIS FORM

And send it to S. Kutnow & Co., Ltd., 41, Farringdon Road, London, E C.

### FOR FREE SAMPLE

*Dr.* ............................................................

*Address*............................................................

LANCET, 6/7/'07. ............................................................

**SAMPLES FREE TO PHYSICIANS**

Props.: **S. KUTNOW & CO., LTD.,** 41, Farringdon Road, London, E.C.

Proprietors in U.S.A.: KUTNOW BROS., Ltd., 853, Broadway, New York City.

In all disorders of the respiratory tract in which inflammation or cough is a conspicuous factor, incomparably beneficial results can be secured by the administration of

# Glyco-Heroin (Smith)

The preparation instantly diminishes cough, augments expulsion of secretions, dispels oppressive sense of suffocation, restores regular, pain-free respiration and subdues inflammation of the air passages.

The marked analgesic, antispasmodic, balsamic, expectorant, mucus-modifying and inflammation-allaying properties of GLYCO-HEROIN (SMITH) explain the curative action of the Preparation in the treatment of

**Coughs, Bronchitis, Pneumonia, Laryngitis, Pulmonary Phthisis, Asthma, Whooping Cough**

**and the various disorders of the breathing passages.**

GLYCO-HEROIN (SMITH) is admittedly the ideal heroin product. It is superior to preparations containing codeine or morphine, in that it is vastly more potent and does not beget the bye-effects common to those drugs.

DOSE.—The adult dose is one teaspoonful, repeated every two or three hours. For children of more than three years of age, the dose is from five to ten drops.

Samples and exhaustive literature bearing upon the preparation will be sent, post paid, on request.

MARTIN H. SMITH COMPANY,
New York, U. S. A.

*Sole British Agents:*

**THOS. CHRISTY & CO.,**
4, 10, & 12, Old Swan Lane, Upper Thames St., London, E.C.

K.&O. DOUCHE FOR THE APPLICATION OF
GLYCO-THYMOLINE TO THE NASAL CAVITIES

# GLYCO-THYMOLINE

IS USED FOR CATARRHAL CONDITIONS OF
MUCOUS MEMBRANE IN ANY PART OF THE BODY

**Nasal, Throat, Stomach, Intestinal
Rectal and Utero-Vaginal Catarrh**

**KRESS & OWEN COMPANY - 210 Fulton Street, New York**

Sole Agents for Great Britain, THOS. CHRISTY & CO., 4—10 & 12 Old Swan Lane, London, E. C.

# NO OTHER PEPSINE

Has given so great satisfaction to both Prescriber and
Patient for twenty years past.

# Schacht's Fluid Pepsine

PEPSINA LIQUIDA
**(SCHACHT).**

One Teaspoonful will Peptonise 1,000 grains of Albumen.

**The LANCET** reports: "The preparation is decidedly elegant, and possesses great therapeutic powers."

**The BRITISH MEDICAL JOURNAL** says: "We find by experiment that it has the peptonizing power claimed for it by the makers."

**The PRESS & CIRCULAR,** October 10th, 1900: "On applying the test to PEPSINA LIQUIDA the albumen was completely converted, thus fulfilling the manufacturers' claim. The flavour of the preparation is particularly agreeable."

**THE ADULT DOSE IS A TEASPOONFUL, WITH FOOD. REACTION, ACID.**

*In 4 oz., 8 oz., and 16 oz. bottles, of every Wholesale House,*
OR DIRECT FROM

**GILES, SCHACHT & Co.,** CLIFTON, BRISTOL.

# BULLOCK'S
# PEPSINA PORCI.

DOSE—2 to 4 GRAINS.

# ACID GLYCERINE OF PEPSINE

**(BULLOCK).**

DOSE—1 to 2 DRMS.

In this preparation advantage has been taken of the solubility of Pepsine in Glycerine to produce a convenient and desirable *liquid form* of this valuable medicine; whilst the preservative qualities of the menstruum confer upon the Acid Glycerine of Pepsine the property of keeping for any length of time.

May be prescribed with most substances compatible with Acids.

**In 4-oz., 8-oz., and 16-oz. Bottles, and in Bulk.**

The published experiments of G. F. DOWDESWELL, Esq., M.A.Cantab., F.C.S., F.L.S., &c., Dr. PAVY, Professor TUSON, the late Professor GARROD, Dr. ARNOLD LEES, and others, conclusively demonstrate the excellence, high digestive power, and medicinal value of the above preparations.

# IMPROVED GREGORY POWDER

Greatly condensed, freed from inert matter, readily miscible with water.

**IMPROVED GREGORY POWDER CACHETS**

**30 grains each.** Other sizes to order.

# AURAL OVOIDS

**For Treatment of Ear Troubles.**

**BORIC ACID, OPIUM, IODOFORM, &c.**

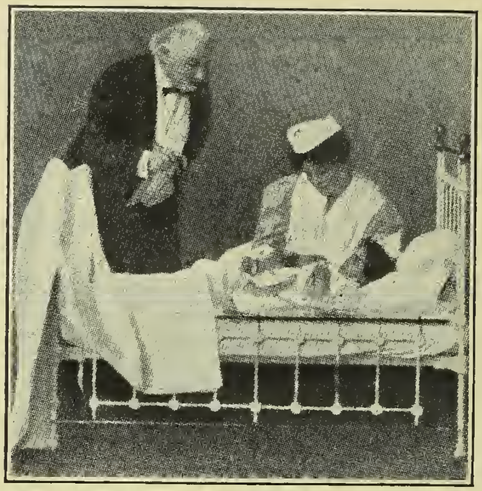
*In prescribing the above Preparations it is suggested to insert in parenthesis as follows (BULLOCK).*

**SAMPLES ON RECEIPT OF CARD.**

**J. L. BULLOCK & CO., 3, Hanover St., Hanover Sq., London, W.**

# *Antiphlogistine*

(Inflammation's Antidote)



For Abdominal Pain and Visceral Inflammation.

## A CATAPLASM

ANTISEPTIC HYGROSCOPIC

---

APPLY HOT AND THICK
COVER WITH COTTON WOOL

---

THE DENVER CHEMICAL MFG. CO.
110, CHEAPSIDE, LONDON, E. C.

# MODERN THERAPY

## A reliable Hypnotic, Antispasmodic and Analgesic

which does not markedly depress the heart or the respiratory centres.

**CHLORETONE** ($C_4H_7OCl_3$), a derivative of chloroform and acetone, acts upon the central nervous system with little, if any, interference with the heart or the secretions. Kymographic tracings taken from the carotid artery of dogs kept under its influence for 8½ hours have proved that the blood pressure and the systolic force were both unaffected (*Journal of the American Medical Association*, Sept. 23, 1899). In insomnia due to alcohol and morphine addiction, 120 grains given during 24 hours produced several days' sleep, but no subsequent ill-effects (*Therapeutic Gazette*, Jan., 1900, p. 19).

### SELECTIONS FROM BIBLIOGRAPHY.

**As a hypnotic—**
"Safer and more satisfactory than either veronal, chloral, sulphonal, paraldehyde or morphine." *Therapeutic Gazette*, Dec., 1904, p. 795.

**In puerperal mania—**
"Prolonged sleep though chloral, bromides, etc., had failed." *Therapeutic Notes*, September, 1906, p. 88.

**In delirium tremens—**
"Nausea and nervous excitement promptly subsided." *Therapeutic Notes*, Dec., 1903, p. 113.

**In mental diseases—**
"Tranquil sleep without any appreciable influence upon the pulse, temperature, or secretions." *La Riforma Medica*, Nos. 52, 53.

**In insomnia of pregnancy—**
"Safe and effective." *Medical Age*, Oct. 25, 1903, p. 765.

**In chorea—**
"Striking and uniform benefit." *Lancet*, March 30, 1907, pp. 880 and 883.

**In sea-sickness—**
"Great value." *Lancet*, Feb 28, 1903, p. 615; March 7, 1903, p. 687; Jan. 23, 1904, p. 253; Jan. 30, 1904, p. 334; Mar. 30, 1907, p, 880, etc.

**In vomiting of pregnancy and stomach pains of neurotic origin—**
"Very effective." *Liverpool Medico-Chirurgical Journal*, January, 1904.

**In gastritis, cancer, gastrodynia, ulcer, and especially those cases of pain, vomiting, and hæmatemesis so frequently associated with chlorosis—**
"Remarkable soothing effect." *Lancet*, March 30, 1907, p. 880.

**In asthma—**
"Prompt relief after failure of usual remedies." *Therapeutic Notes*, May, 1903, p. 27.

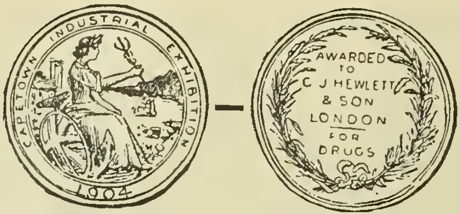
**Preparatory to anæsthesia—**
"Ether taken better, acts more promptly, fewer after-effects." *British Medical Journal*, Jan. 28, 1905, p. 192: *Medicine*, August, 1904, p. 599.

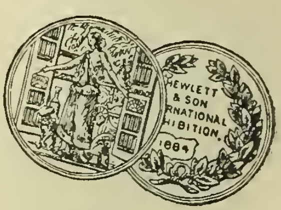
CHLORETONE arrests severe hiccough and paroxysmal coughing. Its innocuous anodyne properties give prompt relief in intestinal colic. Locally, it allays the itching of pruritus, urticaria, and other skin affections, and the pain of hæmorrhoids.

We shall be pleased to send a small brochure on Chloretone to any Medical Man who will request it.

*Chloretone is supplied in bottles of 1-2, 1, and 4 ounces; in 5-grain capsules (bottles of 25 and 100); also as Chloretone Inhalant, and Chloretone Compound Suppositories (Vaginal).*

# PARKE, DAVIS & Co., LONDON.


CAPETOWN INDUSTRIAL EXHIBITION
1904
AWARDED TO C J HEWLETT & SON LONDON FOR DRUGS



GOLD MEDAL

## THE ORIGINAL PREPARATION.

# "MIST. PEPSINÆ CO. $\bar{c}$ BISMUTHO"

## (HEWLETT'S).

For over a quarter of a century has been prescribed as the leading remedy in the treatment of Diseases of the Stomach, Dyspepsia, Gastrodynia with Pyrosis, &c.

POISON
TRADE MARK
MIST·PEPSINÆ CO.c BISMUTHO
An elegant preparation miscible in water
INVALUABLE IN PYROSIS, CARCINOMA AND ALL FORMS OF DY
COMPOSITION
Each fluid drachm contains 2 minims of Hydrocyanic Acid and 3½ minims of Sol Opii Purif
DOSE Half to one drachm diluted
Specially prepared by
C. J. Hewlett & Son
MANUFACTURING CHEMISTS
LONDON ENGLAND

**LANCET.**—"Undoubtedly a valuable and convenient preparation."

**BRITISH MEDICAL JOURNAL.**—"Obviously likely to be of much advantage in the requent cases of irritative dyspepsia, with atony of gastric or intestinal muscular layers."

**MEDICAL PRESS AND CIRCULAR.**—"Perfectly miscible with water, and not at all unpalatable to take. It has been employed with the best results in cases of obstinate atonic dyspepsia."

**MEDICAL REVIEW.**—"Messrs. Hewlett's preparation of Bismuth and Pepsine is of standard excellence. The combination is a particularly good one for the treatment of diseases of the stomach which require a sedative. It will keep indefinitely in a cool place, as we can testify after many years experience of it."

SUPPORTED BY HUNDREDS OF MEDICAL OPINIONS.

***Dose: Half to One Fluid Drachm diluted.***

Price 10s. 6d. per lb., packed for Dispensing only, in 10, 22, 40, and 90-oz. Bottles.

Samples and literature respecting any of our preparations sent post free to any Member of the Medical Profession. As our special preparations are only supplied for dispensing purposes, the Physician is earnestly requested to write "HEWLETT'S" after the name of the speciality, to ensure obtaining the genuine article. The titles of our various preparations are closely copied by unscrupulous competitors, so that the precaution of adding our name is advisable for the protection of the patient and physician.

THE FOLLOWING COMBINATIONS OF THE ORIGINAL PREPARATION ARE ALSO SUPPLIED:—

MIST. PEPSINÆ CO. c. BISMUTHO (sine Opio) (HEWLETT'S).
MIST. PEPSINÆ CO. c. CASCARA (HEWLETT'S).
MIST. PEPSINÆ CO. c. EUONYMIN (HEWLETT'S).
MIST. PEPSINÆ CO. c. PODOPHYLLIN (HEWLETT'S).

THE DOSE AND PRICE REMAINING THE SAME.

INTRODUCED AND PREPARED ONLY BY

# C. J. HEWLETT & SON

***(Established 1832),***

**Wholesale Export Druggists and Manufacturing Chemists,**

**35 to 42, CHARLOTTE ST., LONDON, E.C.**

## Active Aromatic Aperients.

These preparations are described in SECTION B, pp. 87 and 93, of the SECOND APPENDIX TO SQUIRE'S POCKET COMPANION. A copy of this APPENDIX and Samples of the undermentioned preparations will be presented gratis to any member of the medical profession on application.

### KASAK ELIXIR.

A palatable and efficient preparation of CASCARA BARK, free from the objectionable bitterness which is so common to preparations of Cascara.

DOSE—For a Child, one or two teaspoonfuls (according to age); for an Adult, one tablespoonful.

### KASENA.

KASAK WITH SENNA.

A very useful combination.

DOSE—For Children, one teaspoonful. Adults, one dessertspoonful.

### SENNINE.

A palatable Syrup made from the very finest quality of Senna.

DOSE—Half to two teaspoonfuls.

## Phosphate Preparations.

**SQUIRE & SONS** may certainly claim to be the pioneers in the manufacture of PHOSPHATE preparations on a large scale.

Their compound Phosphate Syrup **FEROCAL** (Chemical Food) is known all the world over and has recently been supplemented by a condensed product, **FEROCALETTES.**

The GLYPHOCAL series is described in SECTION B, page 77 of the SECOND APPENDIX TO SQUIRE'S POCKET COMPANION. A copy of this APPENDIX and Samples of the under-mentioned preparations will be presented gratis to any member of the medical profession on application.

### GLYPHOCAL.

SQUIRE'S **GLYCEROPHOSPHATE** SYRUP.

This syrup is delicately flavoured and palatable, and makes an excellent tonic which will not distress the most delicate stomach.

INVALUABLE IN NEURASTHENIA.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

### GLYPHOCAL ELIXIR.

An elegant Elixir of the Glycerophosphates, delicately flavoured and partaking of the nature of a Glycerophosphate Wine.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

## Formate Formulas.

The literature of the FORMATE salts to the end of October, 1906, is reviewed in the SECOND APPENDIX to SQUIRE'S POCKET COMPANION, SECTION A, p. 5; the preparations are described in SECTION B, p. 79.

A copy of this APPENDIX and Samples of the undermentioned preparations will be presented gratis to any member of the medical profession on application.

### SYRUPUS FORMATIS CO.

(SQUIRE).

A clear, palatable, delicately-flavoured Syrup containing Lithium, Potassium, and Sodium Formates.

A reliable and permanent preparation of the Formates. Useful as a muscular tonic.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

### GLYPHOCAL WITH FORMATES.

A compound Elixir of the Glycerophosphates with the Formates. Palatable and permanent.

It possesses the full nerve-tonic properties of the former with the muscular-tonic properties of the latter.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

## Nuclein Novelties.

Solutions of Nucleinic Acid for either oral or hypodermic administration are prepared by SQUIRE & SONS. Literature dealing with these novelties appears in the SECOND APPENDIX TO SQUIRE'S POCKET COMPANION, SECTION B, p. 89. A copy of this APPENDIX and Samples of the undermentioned preparations will be presented gratis to any member of the medical profession on application.

### LIQUOR NUCLEINICUS

(SQUIRE).

A clear permanent solution of Nucleinic Acid for oral administration in the treatment of tuberculous glands, and also in cases of indurated acne and suppurative skin diseases.

DOSE—Half to one fl. drm. = 1·8 to 3·6 c.c.

Remarkable effect in the treatment of such tuberculous glands as could not be removed by operation.—*B.M.J.*, 1900, ii., 1696.

### STERILETTE NUCLEINICUS.

1 c.c. (17 minims) dark amber-tinted glass capsules, containing sufficient for an average hypodermic dose.

Contamination of the bulk solution is avoided.

**SQUIRE & SONS, 413, OXFORD ST., LONDON, W.**

| | | | | |
|---|---|---|---|---|
| **EDINBURGH** | From | **Mr. A. K. STEWART,** | **Chemist,** | **Lynedoch Place.** |
| **GLASGOW** | „ | **JOHN McMILLAN, Ltd.,** | „ | **Great Western Road.** |
| „ | „ | **FRAZER & GREEN, Ltd.,** | „ | **Buchanan Street.** |

An aromatic extract of the gastric juice.

Possesses high digestive power.

Palatable, and stimulates digestion.

Prescribed alone, diluted, or in combination with acids and tonics, and as a vehicle.

In all cases where PEPSIN is desirable.

Pepsencia.
Pepsencia.
Pepsencia.

DOSE: For Adults, one teaspoonful.
For Infants, from 5 to 15 drops.

SUPPLIED TO THE MEDICAL PROFESSION IN 4 OZ. AND 8 OZ. BOTTLES AT 1s. 10d. AND 3s. 3d. EACH, AND WINCHESTER QUARTS AT 24s. EACH.

*Originated and Manufactured by*
*Fairchild Bros. & Foster,*
*NEW YORK.*

*Agents for Europe, Asia, Africa and Australasia*
*Burroughs Wellcome & Co.,*
*LONDON, SYDNEY, CAPE TOWN.*

"The expedient of peptonising food is one of the most rational, scientific, and practical advances of modern medicine, and has been proved devoid of the slightest theoretical or discernible objection."

# *PANOPEPTON*

Presents the entire nutritive substance of prime lean beef and best wheat flour converted into a soluble, completely and freely assimilable form.

# *PANOPEPTON*

Is instantly and wholly assimilable and sterile.

# *PANOPEPTON*

Contains all the extractives, salts, and savory matters of the beef juice, which are of peculiar value as stimulants.

# *PANOPEPTON*

Contains all the proteids of the beef and wheat in a soluble non-coagulable form.

# *PANOPEPTON*

Is a complete food, containing the albuminoids, carbohydrates and phosphates—the flesh, fat, and bone making elements.

FAIRCHILD BROTHERS & FOSTER.
TRADE PANOPEPTON MARK
The Nutritive Constituents of Beef and Wheat in a soluble and freely absorbable form.
A nourishing, restorative, stimulant
LIQUID FOOD OF INCOMPARABLE VALUE FOR THE NUTRITION OF THE SICK.
ORIGINATED AND MANUFACTURED BY
FAIRCHILD BROS. & FOSTER,
IN
NEW YORK, U. S. A.
AGENTS FOR EUROPE, ASIA, AFRICA AND AUSTRALASIA
BURROUGHS WELLCOME & CO.,
SNOW HILL BUILDINGS. LONDON, E. C.

For an adult the usual portion should be a dessertspoonful to a tablespoonful several times a day and at bedtime.

*Supplied to the Medical Profession in 6 oz. and 12 oz. bottles, at 2/2 and 3/8 each.*

*Specimen and Pamphlet will be forwarded on request.*

Originated and Manufactured by

Fairchild Bros. & Foster,

New York.

Agents for Europe, Asia, Africa, Australasia:

Burroughs Wellcome & Co.,

London, Sydney, Cape Town.

*GRAND PRIX, PARIS, 1900.*

**THREE MEDICAL SPECIALITIES:**

**Write us for Experimental Samples. Stock Supplies may be had through Chemists or the Wholesale Houses**

**T. & H. SMITH'S**

**CHLOROFORM.**

Answers all purity tests. Free from the elements of decomposition and remains unimpaired in all climates. Long and favourably known to the profession as a safe and certain anæsthetic.

*Supplied in all sizes of bottles.*

**T. & H. SMITH'S**

**TELA VESICATORIA.**

The well-known Cantharidine blistering tissue. Invaluable to the Physician for its cleanliness, safety, and convenience in use, and its extreme portability. Unaffected by time or climate.

*Sold in boxes (retailing at 1s. 3d. and 4s. 6d. each) and in tins containing 12 large sheets for dispensing.*

**T. & H. SMITH'S**

**EMP. CANTH. LIQ.**

This ready and reliable vesicant is quite without a rival. It never disappoints the physician or the patient, a single application by means of a camel-hair brush usually producing a complete blister in from two to four hours.

*Sold in 1oz., 2oz., and 4oz. bottles.*

**T. & H. SMITH, LIMITED,**

*MANUFACTURING & EXPORT CHEMISTS,*

**EDINBURGH: 21, Duke Street. LONDON: 22, City Road, E.C. GLASGOW: 37 Washington Street.**

## The Ideal Antiseptic and Disinfectant.

# *Medical Izal.*

## NON-POISONOUS. NON-CORROSIVE.

Does not coagulate albumen.

Does not oxidize.

1 in 750 destroys the Bacillus Typhosus in five minutes.
—*Journal of the Royal Army Medical Corps, August 1903.*

Definite germicidal power guaranteed. The percentage of active material present is constant.

Does not cause irritation.

Does not corrode instruments or injure the operator's hands.

### For External Use.

Indicated in eczema and ringworm.

"Izal (1 in 200) is absolutely innocuous for washing out large cavities. It has a very marked effect in reducing suppuration in granulating wounds."

For fresh wounds, ulcers and foul wounds, douching in midwifery practice, washing instruments, etc.

Its non-irritating character is a marked advantage when employed in washing out a peritoneal abscess, a foul bladder or a stinking sinus.

Izal.
Non-poisonous
Specially prepared for Medical and Surgical USE.
This MEDICAL IZAL diluted with 200 parts of water, *i.e.* when of only half per cent. strength, has been certified by an eminent Bacteriologist to destroy the *bacillus coli* and the *staphylococcus pyogenes aureus* in 5 minutes.
SHAKE the BOTTLE.
Sole Manufacturers
NEWTON, CHAMBERS & Co. LIMITED,
THORNCLIFFE, near Sheffield.

### For Internal Use.

Indicated in chronic dyspepsia, fœtid bronchitis, foul stomach, diarrhœa, dysentery and typhoid fever.

The following prescription has been used with entirely satisfactory results in dysentery. (See *British Medical Jonrnal, November 10th, 1900.)*

| | |
|---|---|
| ℞ Izal ... ... | m. iii |
| Bismuthi Subnitratis | gr. x |
| Tinct. Chloroform et Morph. ... | m. viii |
| Mucilag. Acaciæ ad. | ℥i |

To be taken every two, four or eight hours according to the severity of the symptoms.

**Verbatim Reports—Bacteriological, Pharmacological and Surgical—and samples free to the profession.**

**Allen & Hanburys Ltd.,**
Plough Court, Lombard Street, **LONDON.**

**Newton, Chambers & Co., Ltd.,**
**THORNCLIFFE,** near SHEFFIELD.

TRADE MARK.
A.D. 1715.

An Ideal Tonic in Convalescence.

Byno-Hypophosphites

An Active Aid to the
Digestion of Farinaceous Foods.

**Byno-Hypophosphites may be taken when the digestive organs are weak and impaired, and when ordinary tonics cannot be tolerated.**

THE constituents of Byno-Hypophosphites ensures the effectual combination required in a perfect tonic. This combination, though somewhat complex, is in practice most successful, and Byno-Hypophosphites will be found much superior to the official syrup of which it is the analogue. It stimulates the appetite whilst aiding digestion; it conserves and invigorates the nervous system.

PRACTICAL CLINICAL EXPERIENCE of many years has proved that what theoretically is expected of Byno-Hypophosphites by reason of its composition is fully justified. It is, as the *British Medical Journal* says,

"One of the Most Popular Tonics of the Day."

SAMPLES SENT FREE TO MEDICAL MEN, ON REQUEST.

**ALLEN & HANBURYS Ltd.,**

37, Lombard Street, LONDON, E.C.

UNITED STATES: Niagara Falls, New York.
CANADA: Gerrard Street East, Toronto.
AUSTRALASIA: Bridge and Loftus Streets, Sydney.
SOUTH AFRICA: Castle Street, Cape Town.

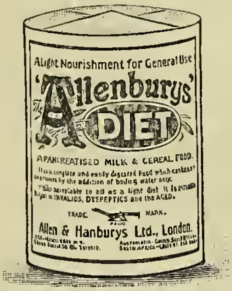
TRADE MARK.
A.D.1715.

***A Pancreatised Food that can be made in a minute, the addition of boiling water only being necessary.***

# The 'Allenburys' DIET

BY the use of the "Allenburys" Diet all trouble of peptonising milk and farinaceous foods is overcome. In the sick room it is invaluable, as the food is easily digested and assimilated, and only the exact quantity required need be prepared at a time.

The "Allenburys" Diet is made from pure full cream milk and whole wheat, both ingredients being partially pre-digested during manufacture. It can be taken by those who cannot digest cow's milk, and provides a light and very nourishing diet for Invalids, Dyspeptics, and the Aged.


A Light Nourishment for General Use
The 'Allenburys' DIET
A PANCREATISED MILK & CEREAL FOOD.
It is a complete and easily digested Food which can be made by the addition of boiling water only.
INVALIDS, DYSPEPTICS and the AGED.
TRADE MARK.
Allen & Hanburys Ltd., London.

For travellers by sea or land this complete food will be found exceedingly valuable.

**Sample, with full particulars, sent free on request.**

**ALLEN & HANBURYS Ltd.,**

37, LOMBARD STREET, LONDON, E.C.

UNITED STATES: Niagara Falls, New York.
CANADA: Gerrard Street East, Toronto.
AUSTRALASIA: Bridge and Loftus Streets, Sydney.
SOUTH AFRICA: Castle Street, Cape Town.

## DIONINE

A Morphia Derivative, free from injurious by-effects.

An Excellent Substitute for Morphine; an Approved Remedy for the Treatment of Affections of the Respiratory Organs; an Analgesic and Sedative. Recommended also in the Treatment of the Morphia Habit.

DIONINE is easily soluble; its solutions are neutral, and therefore the injections are painless.

For Internal Administration:
DIONINE TABLETS, each 0 03 gram. (½ grain) in Original Tubes.

## IODIPIN

10% & 25%

A valuable Substitute for the Alkali Iodides, free from all undesirable after-effects.

Especially indicated in Asthma, Bronchitis, Emphysema, Arteriosclerosis, Scrofula, and Goitre.

A Specific in Tertiary Syphilis.

Internally also in the form of IODIPIN TABLETS.

IODIPIN 25% is usually administered hypodermically, and in this way it produces prompt, energetic, and lasting effects.

## PERHYDROL

30% by Weight;
100% by Volume.

Chemically Pure and Acid-free Peroxide of Hydrogen.

Disinfectant and Deodorant, entirely non-irritating, non-poisonous, odourless. Suitable for all Surgical, Otological, Rhinological, Laryngological, and Odontological Purposes.

In Original Bottles of 50 and 200 grams.

## ANTITHYREOIDIN

(Moebius).

An Excellent, Approved Remedy for the Treatment of Graves' Disease.

## FIBROLYSIN (Mendel).

A Water Soluble Salt of Thiosinamin, ready for use and sterilised. In boxes of 10 bulbs, each containing 2·3 c.c.

## PARANEPHRIN

A Non-irritating Preparation of the Suprarenal Gland, relatively harmless.

SAMPLES
AND
LITERATURE
ON
APPLICATION.

# E. MERCK—DARMSTADT.

Telephone: 13736 Central.

London Office: 16, Jewry St., E.C.

Telegrams: "Bissula, London."

SAMPLES
AND
LITERATURE
ON
APPLICATION.

## BROMALIN

Recommended for Prolonged Bromine Treatment.

## TROPACOCAINE

A relatively Non-poisonous Anæsthetic, very suitable for the production of Spinal Anæsthesia.

## MAGNESIUM PERHYDROL

Containing 15% and 25% Chemically Pure $MgO_2$.

An Excellent Preparation for the Internal Exhibition of Oxygen.

## TANNOFORM

A Non-poisonous, Harmless Astringent and Antiseptic.

Given Internally for Stomachic and Intestinal Catarrh and for Diarrhœa; recommended also as an Antiseptic for Wounds.

TANNOFORM DUSTING POWDER.
An Excellent Anhydrotic.

## STYPTICIN

A very Efficient, Harmless Hæmostatic, with Sedative Properties.

Particularly recommended in Uterine Bleeding, Bleeding from the Stomach, Intestines, and Bladder, and in Hæmoptysis.

Given Internally in Tablets, each 0·05 gram. (¾ grain).

Also,
STYPTICIN GAUZE —— STYPTICIN WOOL.

## VERONAL

VERONAL, when given in proper doses, is an innocuous soporific, having a prompt hypnotic and sedative action.

Recommended in Simple Insomnia due to Psychical Affections and Cases of Excitement.

Combined with DIONINE, highly satisfactory results have been obtained in the Treatment of Insomnia due to Pain.

VERONAL TABLETS, each 0·5 gram. (7½ grains).

Price to the
Medical
Profession
2/9
per bottle

THE PERFECTED

# WYETH
# BEEF JUICE

The concentrated goodness of prime beef—assimilable and palatable.

The best safeguard against dangerous relapses in convalescents and chills in invalids.

An ideal nutritive stimulant for the aged.

After operations it quenches the thirst which follows anæsthesia, supplies nutriment which is assimilated at once, and stimulant that is free from the lowering after-effects of alcohol.

BURROUGHS WELLCOME & CO.
LONDON (ENG.) SYDNEY CAPE TOWN

H 497

[COPYRIGHT

BY APPOINTMENT.

# SAVORY & MOORE'S

# BEST FOOD

## FOR INFANTS AND INVALIDS

¶ Made with fresh milk, Savory & Moore's Best Food provides the highly valuable anti-scorbutic properties which dried milk preparations lack. This is one reason why children reared upon it are so remarkably free from Rickets and Scurvy.

¶ Another important feature is its richness in the natural Phosphates and Silica, which are so essential for the formation of healthy bone and sound teeth.

¶ Though easy of digestion, it is not a pre-digested food, but develops the child's digestive organs, as nature intended they should be developed, by proper exercise.

¶ Savory & Moore's Best Food is prepared with scientific exactness and scrupulous care. The quantities of food and milk necessary for certain ages have been accurately determined, and it is only necessary to properly apportion these quantities to meet the requirements of infants of every age and condition.

¶ For Nursing Mothers a gruel made with Savory & Moore's Best Food is infinitely more nutritious, and more easily digested, than ordinary oatmeal, and not so fattening. It increases both the abundance of the flow and the quality of the milk.

¶ It is of particular benefit to Invalids and Convalescents as it contains the elements necessary to sustain the body in the most easily digestible form.

*Samples of Savory & Moore's Best Food and descriptive literature will gladly be sent to members of the medical profession on request.*

---

## SAVORY & MOORE, LTD.,

**Chemists to The King,**

**143, New Bond Street, London.**

**A Food of the Highest Nutritive Value.**

# GLYCERINE EXTRACT

OF

# RED BONE MARROW

## IN THE TREATMENT OF TUBERCULOSIS.

"Of late I have been using RED BONE MARROW (Armour & Company) in place of the Malt and Cod Liver Oil. It is pleasanter to take and of easy assimilation, and its effects are quickly apparent. All tuberculous patients soon suffer from anæmia, and by promoting the development of red blood corpuscles, cell resistance to the tubercular organism is increased. It is by nutrition and oxidation that the progress of disease is arrested, our aim being to improve the resisting force of the body. The importance of this remedy was first impressed upon me while treating some soldiers suffering from malarial cachexia. Where tissue changes and waste with their resulting anæmia are progressing rapidly, RED BONE MARROW is a valuable remedy, due to the ease with which it is assimilated, and its retention by delicate stomachs."

C. J. W——, M.D.

**To obtain best results specify "Armour."**

*Samples and Descriptive Matter on application to*

**ARMOUR & COMPANY, Ltd.,**

Atlantic House, Holborn Viaduct, London, E.C.

# SCHERING'S

FABRIK-MARKE TRADE-MARK

## MODERN THERAPEUTICS

### UROTROPIN

Best known and most effective Urinary Antiseptic.

### SUBLAMIN

A Non-irritant Sulphate Mercuric Ethylenediamine Preparation for thorough Hand Disinfection.

### EXODIN

Mild and Safe Laxative.

### EMPYROFORM

Dry Tar Product. Excellent in Eczema.

### BETA EUCAIN LACTATE

Local Anæsthetic par excellence. Soluble up to 20%. Toxic effects reduced to a minimum.

**PIPERAZINE, PHENOCOLL, CHLORALAMID, &c.**

SAMPLES AND LITERATURE ON APPLICATION TO

3, LLOYD'S AVENUE,
**A. & M. Zimmermann,**
LONDON, E.C.

---

# BATTLEY'S LIQUORS.

*Please specify* *BATTLEY'S.*

## BATTLEY & WATTS, CRIPPLEGATE, LONDON.

BRONZE MEDAL
**PHARMACEUTICAL LIQUORS,**
*UNIVERSAL EXPOSITION,*
ST. LOUIS, 1904.

- LIQ. BELLADON. (Battley's).
- LIQ. BUCHU (Battley's).
- LIQ. CINCHON. CORD. (Battley's).
- LIQ. CINCHON. PALLID. (Battley's).
- LIQ. CONII (Battley's).

FIRST CLASS AWARD,
**PHARMACEUTICAL PREPARATIONS**
*International Medical Exhibition,*
NEW ORLEANS, 1885.

- LIQ. HYOSCYAM. (Battley's).
- LIQ. OPII. SEDAT. (Battley's).
- LIQ. SECALIS CORNUT. (Battley's).
- LIQ. TRITIC. REPEN. (Battley's).
- LIQ. TARAXACI (Battley's).

**Messrs. BATTLEY & WATTS** (Successors to the late RICHARD BATTLEY, and the only Makers of his Liquors) Caution the Profession against using any Preparations under the above name unless the Autograph of "RICH. BATTLEY" is over each Cork and on the Label attached to each Bottle, *without which none is genuine.* The above are only prepared at the Laboratory, Cripplegate, London. Physicians will oblige by writing "BATTLEY" after the name of the Liquor in their Prescriptions, as frequent complaints are received of spurious imitations being substituted.

Telegrams: "ALLENBURYS, LONDON."
On Sundays and Holidays:
"HANBURYS, VERE STREET, LONDON."

Telephone: No. 1172 AVENUE.
Vere Street: No. 628 PADDINGTON.

# ANTITOXINS OF THE Lister Institute OF PREVENTIVE MEDICINE

| | |
|---|---|
| Diphtheria Antitoxin, 4,000 units ... ... ... | 5/- |
| Anti-Microbial Diphtheria Serum 10 c.c. ... | 5/- |
| ,, Pastilles, 10 in box ... ... | 5/- |
| ,, ,, 25 ,, ... ... | 10/- |
| Tetanus Antitoxin 30 c.c. ... ... ... ... | 12/- |
| Anti-Streptococcus Serum 30 c.c. ... ... | 7/6 |
| Anti-Dysentery Serum 20 c.c. ... ... ... | 5/- |
| Yersin's Serum 20 c.c. ... ... ... ... | 6/6 |
| Haffkine's Prophylactic 21 c.c. ... ... ... | 6/- |
| Anti-Staphylococcic Vaccines (Wright) ½ c.c. 1/-, 1 c.c. 1/6, 2 c.c. | 2/6 |

| | |
|---|---|
| Coley's Fluid 2 c.c. ... ... ... ... | 5/- |
| Anti-Cholera Vaccine (Kolle) 1 c.c. 2/-, 5 c.c. | 5/- |
| Anti-Typhoid Vaccine (Wright) 1 c.c. 1/6, 2 c.c. | 2/6 |
| Calf Vaccine Lymph, (1 vaccination) ... ... | 6d. |
| ,, per dozen tubes ... ... | 5/- |

For Veterinary Use.

| | |
|---|---|
| Tuberculin 3 c.c. ... ... ... ... ... | 1/- |
| Mallein 3 c.c. ... ... ... ... ... | 1/- |
| Anti-Tetanus Serum 10 c.c. ... ... ... | 3/- |

Sole Wholesale Agents: **Allen & Hanburys Ltd., 37, Lombard St., London.**

Of all Chemists, or through the following Provincial Depots:

ABERDEEN—Davidson & Kay.
BRISTOL—Ferris & Co.
BELFAST—McMullan & Co.
BIRMINGHAM—Southall Bros. & Barclay.
BOURNEMOUTH—G. E. Bridge & Co.
CAMBRIDGE—Church & Son.
CARDIFF—Jesse Williams & Co.
CORK—Kiloh & Co., Ltd.
DUBLIN—Fannin & Co., Ltd.
EDINBURGH—Duncan Flockhart & Co.
GLASGOW—Glasgow Apothecaries' Co.
ISLE OF WIGHT—W. T. Deeks, Shanklin.
JERSEY—J. T. Baker.
LEEDS—Reynolds & Branson, Ltd.
LIVERPOOL—Clay & Abraham.
NEWCASTLE—Ismay & Son.
NORWICH—Smith & Sons.
NOTTINGHAM—C. A. Bolton.
MANCHESTER—James Woolley, Sons & Co., Ltd.
OXFORD—Cousins, Thomas & Co.
PLYMOUTH—Martin & Palmer.
SHEFFIELD—C. T. W. Newsholme.
YORK—Raimes & Co.

---

# NON-ALCOHOLIC PEPTONISED IRON PREPARATIONS.

## "FERRO-MANGAN"

(0·6% Fe., 0·1% Mn.).

Original bottles containing 10 ozs. at 1/9 retail.

## "FERRO-MANGAN" WITH CINCHONA

2/3 per bottle retail.

## "FERRO-MANGAN" WITHOUT SUGAR

1/9 per bottle retail.
*Prepared for Diabetes.*

## "BROMO-MANGAN"

(0·1% Br., 0·6% Fe., 0·1% Mn.).

## "IODO-MANGAN"

(0·1% I., 0·6% Fe., 0·1% Mn.).

Original bottles containing 10 ozs. at 2/- retail.

These preparations are easily digested compounds of IRON and Manganese, either plain or in combination with BROMINE or IODINE. They are a suitable and pleasant form of medication in all cases in which these substances are indicated. They are prepared by a special patented process, are agreeable in taste, and being entirely free from alcohol, are particularly useful in prescribing for children and invalids.

MEDICAL LITERATURE FREE ON APPLICATION.

Manufacturers: THE CHEMICAL WORKS, HELFENBERG, SAXONY (late Eugen Dieterich).

SOLE AGENTS FOR THE UNITED KINGDOM:

**MATTHAEI & CO., 12 and 13, Cullum St., London, E.C.**

TELEPHONE: 5897 Avenue. TELEGRAMS: "Glycerol, London."

## BOROBENPHENE-HEIL.

**Borobenphene-Heil** is a powerful, safe, reliable, non-irritating and pleasant antiseptic, composed of Boracic Acid, Benzoic Acid sublimed from Siamese Gum Benzoin, Phenol and Glycerine, all in the state of highest purity, and constitutes **the ideal antiseptic**, of sufficient strength to render aseptic any part of the human body.

Yours of the 24th inst. received. In reply will say that I have used a part of the sample of Borobenphene-Heil you sent me, but have not had an opportunity to use the Glycobenphene-Heil so far, but have this day sent part of it to a patient suffering with eczema. I tried the Borobenphene-Heil in Enteric Fever, also as an antiseptic wash for Cancroidal Ulcers with satisfactory results in both cases.

Yours very truly,
D. A. HUNDON, M.D., Malesus, Tenn.

Some time ago, you forwarded me at my request a bottle of each of your preparations, Borobenphene-Heil and Glycobenphene-Heil. I find that the Borobenphene-Heil is a fine antiseptic, especially in Gonorrhœa, as I have used it in several cases as a wash, and as an injection (diluted) with excellent results. The Glycobenphene-Heil I have only used in two cases of dandruff, and I find it is "Sure Death" to it, as two applications were all that were required in the worst case, one that I had tried nearly everything on without success. I shall continue to use both preparations in my practice as I know a good thing when I get it. If my druggist has any difficulty in procuring them from his wholesale house, he will order direct from you. Many thanks for samples sent me, I remain,

Yours very truly,
W. E. NICHOLS, M.D., Andrews, Ind.

## GLYCOBENPHENE-HEIL.

**Glycobenphene-Heil** is a powerful, safe, reliable, non-irritating and pleasant antiseptic, of the same composition as Borobenphene, the proportion of the constituents being somewhat changed, and contains in addition absolutely chemically pure Oxide of Zinc. **It is for external use only**, and, being a mixture and not a solution, it should always be shaken before applying it. Its power of preventing the development of bacteria and the decomposition of animal and vegetable matter and of destroying bacteria is almost as great as that of Borobenphene-Heil.

In reply to yours of recent date, will say your samples of Glycobenphene-Heil and Borobenphene-Heil were received some time ago, and that I used them at first opportunity. Glycobenphene-Heil in my hands has proven an excellent remedy in acne and eczema, lightens freckles and proves useful in scalp affections. Borobenphene-Heil is a good antiseptic, and at my request, my druggists, Shaughnessy & Magrath, of this City, have now on hand a supply of these remedies. At my suggestion, my friend, Dr. Cowden, Aliceville, Kas., asked for samples. He has not reported to me results. Thanking you for favours, I am,

Yours truly,
A. H. ROGERS, M.D., Westphalia, Kas.

In reply to your favour of the 14th inst., I take much pleasure in stating that I have cured a very obstinate case of Acne with your Glycobenphene-Heil, which had resisted all of the ordinary remedies. The disease yielded very rapidly to treatment. I have a chronic case of Eczema I would like very much to try Glycobenphene-Heil on. My druggist has not been able to buy the remedy on the market.

Very respectfully,
T. A. MATTHEWS, Castalia, N.C.

**Messrs. F. NEWBERY & SONS, Ltd.**, 27 & 28, Charterhouse Square, London, E.C., British Representatives of the Manufacturers, **HENRY HEIL CHEMICAL COMPANY, ST. LOUIS**, will cheerfully furnish an Original Bottle each of **BOROBENPHENE** and **GLYCOBENPHENE** free of charge to any Physician applying for same.

## The absolutely Non-Irritant Local Anæsthetic.

### SIX TIMES LESS TOXIC THAN COCAINE.

### Increases the action of Suprarenin and other Adrenal Preparations.

# NOVOCAIN.

Manufactured by the FARBWERKE VORM MEISTER LUCIUS & BRUNING, HOECHST-ON-MAIN.

Neutral. Easily soluble in water. Not decomposed by boiling. Supplied in **Sterilised Solutions** or **Tablets** (with Suprarenin Borate)—

A. For Infiltration Anæsthesia.
B. For Anæsthesia of Nerve Centres.
C. For Medullary or Lumbar Anæsthesia.
E. For Dental purposes.

*Sole Proprietors for the United Kingdom and Colonies—*

**THE SACCHARIN CORPORATION, Ltd.,**
**165, Queen Victoria Street, London, E.C.**

*LITERATURE AND SAMPLES TO MEDICAL MEN.*

*IN THE TREATMENT OF*

***ANÆMIA, NEURASTHENIA, BRONCHITIS, INFLUENZA, PULMONARY TUBERCULOSIS, AND WASTING DISEASES OF CHILDHOOD, AND DURING CONVALESCENCE FROM EXHAUSTING DISEASES,***

**THE PHYSICIAN OF MANY YEARS' EXPERIENCE**

**KNOWS THAT, TO OBTAIN IMMEDIATE RESULTS, THERE IS NO REMEDY THAT POSSESSES THE POWER TO ALTER DISORDERED FUNCTIONS, LIKE**

# "Fellows' Syrup of Hypophosphites."

**MANY A TEXT-BOOK ON RESPIRATORY DISEASES SPECIFICALLY MENTIONS THIS PREPARATION AS BEING OF STERLING WORTH.**

**TRY IT, AND PROVE THESE FACTS.**

**SPECIAL NOTE.—Fellows' Syrup is never sold in bulk, but is dispensed in Bottles containing 8 oz. and 15 oz.**

*This Preparation may be obtained at all Chemists & Pharmacists throughout the United Kingdom.*

---

A NEW NATURAL HERBACEOUS IRON PREPARATION.

Has proved most successful in **CHLOROSIS, ANÆMIA, &c.**, and in all cases where Blood-Generating preparations are prescribed.

In place of **IRON.**

# HERBANIN

In place of **COD LIVER OIL.**

**HERBANIN** can be taken by children and the most delicate of patients.

**HERBANIN** requires no dietetic precautions.

**HERBANIN** is readily absorbed by the system.

**HERBANIN** has no influence on the teeth.

**HERBANIN** has no disturbing influence on the digestive functions.

**HERBANIN** will keep, even in the Tropics.

*Samples and further particulars on application to*

**A. & M. ZIMMERMANN, 3, Lloyd's Avenue, London, E.C.**

# A Drink in Fevers

A teaspoon of **Horsford's Acid Phosphate** added to a glass of cold water makes a cooling and refreshing acidulous drink for the patient during convalescence from typhoid and other febrile conditions.

Its superiority over Dilute Phosphoric Acid, or any other acid, is due to the fact that it contains the phosphates of calcium, sodium, magnesium and iron, which means increased nutrition.

## Horsford's Acid Phosphate

***is more palatable and strengthening than lemonade, lime juice or any other acidulous drink.***

If your chemist does not have it in stock he can obtain it from
Bovril, Ltd., 152 Old Street, London, E. C.

---

# PHYTIN

## THE ONLY NATURAL ORGANIC PHOSPHORUS SALT

**which enables for the first time a rational system of Phosphorus Therapeutics. Phytin contains 22·8 per cent. of assimilable Phosphorus, which stimulates cell metabolism and the general nutrition of the organism to increased activity. Supplied in capsules containing 4·2 grains each (the dose of the drug), and in 1 and 4 oz. bottles.**

INDICATIONS:

1. Faulty assimilation of food or excessive waste of phosphorus by the organism, under the influence of pathological processes—
2. Pathological phenomena due to imperfect metabolism, or to general malnutrition—

THERAPEUTIC EFFECTS:

*Improvement of the appetite* (in three to four days).

*Increase of the body weight.*

*Increase of strength, as shown by the dynamometer.*

*Improvement in the condition of the blood.*

**FORTOSSAN** (Phytin combined with Lactose), for children under 2 years of age.

**QUININE PHYTIN** neutralises by its specific action on metabolism the depressing effects which quinine exerts on metabolism.

THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE *(Pharmaceutical Department).*
*London Agency:* CROSS LANE & HARP LANE, LONDON, E.C.

**Xeroform** An absolutely non-poisonous, desiccating, and deodorising **Dusting Powder** for wounds Actively promotes the growth of epithelium, and does not irritate either the wound or the surrounding skin. Excellent for dry dressings and also for dressings which are seldom changed. Has a specific action on **Moist Eczema, Ulcers of the Leg,** and **Burns.**

**Collargol** An admirable remedy in **Septic Processes, Puerperal Diseases,** etc. Administered intravenously it produces no ill-effects of any kind. It may also be given by the rectum, or by the mouth, or by inunction in the form of **Credé's Ointment.** Useful in the treatment of **Wounds** and **Infectious Diseases of the Eye** and for **Washing out the Bladder.**

**Salit** A Salicyl Compound in the liquid form. Moderate in price and gives immediate relief when rubbed on the seat of pain in **Rheumatism.** Does not injure the skin even when undiluted. Has no ill effect on the internal organs.

**Novargan** A Soluble Albumen-silver Preparation for the treatment of **Gonorrhœa**, especially in the **acute** stage. Even in the concentrated form it does not irritate the mucous membrane.

---

*Samples and Literature may be obtained of . .*

**E. W. BLASIUS**, 127, Fenchurch Street, London, E.C.

**Telegrams: "Kreosot, London."** **Telephone: 1076 Avenue.**

SOLE AGENT FOR

**CHEMISCHE FABRIK VON HEYDEN, Radebeul, near Dresden.**

---

# NOURRY'S IODINATED WINE.

**Free from Alkaline Iodides. Palatable. Easily assimilated. A perfect substitute for Cod Liver Oil and Iodides.**

LYMPHÆMIA. ANÆMIA. DYSMENORRHŒA. PULMONARY AFFECTIONS.

·77 grain (0·05 gm.) of Iodine and 1·54 grain (0·10 gm.) of **Tannin per tablespoonful.**

*Children—One to two teaspoonfuls. Adults—One tablespoonful. To be taken at meals twice a day.*

**THE LANCET of March 30th, 1901,** contains an article on "The Management of Home Military Hospitals," in which the following appears:—"One special drug I did apply for. I was told it would not be allowed. It was Nourry's Iodinated Wine. This remedy saved the life of a soldier, or saved him at any rate from losing his leg from tuberculous disease of the knee and tibia, which followed a wound caused by the kick of a horse. This remedy was kindly allowed by the authorities, but 19 days passed before the supply arrived, and in the meantime I had to obtain some from a local chemist at my own expense, in order that the man might be kept going. Three weeks without this drug would have been most serious for him, for it was the only one which was of service to him, and without it I believe he would have 'gone the way of all flesh.'"

**NOURRY'S IODINATED WINE** is not advertised to the public.
It owes its success entirely to the Medical Profession.

---

# CACODYLATE OF SODIUM (CLIN)

***(Organic Arsenic).***

Emphatically recommended by Professors GAUTIER, RENAUT, LETULLE, &c., in the treatment of

**TUBERCULOSIS** (either incipient or declared), **IMPALUDISM, DIABETES, DERMATOSES,** and **CANCER.**

**DROPS.**—5 drops contain ¼ grain of Pure Cacodylate of Sodium.

**GLOBULES.**—This special form consists of little Globules, easy to swallow, with a shell of gluten. Each Globule contains ¼ grain of Pure Cacodylate of Sodium.

**TUBES** (Sterilised for Hypodermic Injection).—Each Tube contains a sterilised solution dosed at 1 grain of Pure Cacodylate of Sodium per injection of 16 minims.

# LECITHINE (CLIN)

*(Natural Organised Combination of Phosphorus).*

**LECITHINE (CLIN)** is prescribed in all cases requiring reconstituent medication and should replace phosphated preparations.

**LECITHINE PILLS (CLIN).** Each pill contains 5 centigrammes (or about 0·77 gr.) of Pure Lecithine.

**GRANULATED LECITHINE (CLIN).** Of easy administration, especially for children. One teaspoonful equals 5 cent. (or about 0·77 gr.) of Pure Lecithine.

**LECITHINE SOLUTION (CLIN).** For Hypodermic Injection. Each Tube of 1 centimetre cube contains 5 centigrammes of Pure Lecithine.

*When prescribing, kindly specify* **"CLIN."** *These preparations are employed in the Paris Hospitals.*

SAMPLES AND LITERATURE SENT FREE TO MEDICAL MEN ON APPLICATION TO:—

**F. COMAR & SON, 64, HOLBORN VIADUCT, LONDON, E.C.**

GEORGE VICTOR SPRING
for catarrh of the Bladder
HELENEN SPRING
for the Kidney, Gravel & Gout.

# WILDUNGEN

on the Cassel-Frankfort %M Raily. Germany

**The Spa** to which to send Patients suffering from the **Kidneys** and the **Bladder**, **Gravel**, **Gout** and **Calculus**.

Over 10 000 visitors last season
12 1st class Hôtels, Golf links,

# CELEBRATED WATERS
## for Home Drinking

Certif. by the Acad. of Medicine, Paris and the Inst. of Hygiene, London. Gold medal St. Louis 1904

Annual export 1400000 bottles. Pamphlets & samples free to med. men by the General Agents

**Ingram & Royle Ltd.**
26 Upper Thames Str., London E.C.

# THE NATURAL & ONLY GENUINE CARLSBAD SALT

**(IN CRYSTALS OR POWDER)**

is prepared from the famous

## "SPRUDEL SPRING" at CARLSBAD,

the water of which is largely prescribed in cases of CHRONIC GASTRIC CATARRH, HYPERÆMIA of the LIVER, GALL-STONES, DIABETES, RENAL CALCULI, GOUT, and DISEASES of the SPLEEN, &c.

The **CARLSBAD SPRUDEL SALT** in *Powder* has the great advantage in not being affected by change of temperature or exposure to the atmosphere, and therefore in this form is the most reliable.

---

☞ ***To avoid Imitations, see that the wrapper round each bottle bears the signature of the*** ☜

Sole Agents, **INGRAM & ROYLE, LTD.,**

**EAST PAUL'S WHARF, 26, UPPER THAMES ST., E.C. And at LIVERPOOL and BRISTOL.**

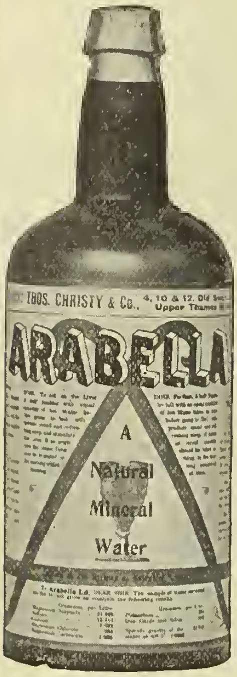
SAMPLES FREE TO MEMBERS OF THE MEDICAL PROFESSION ON APPLICATION.

---

# MARTELL'S THREE STAR BRANDY.

"This brandy shows excellent features on analysis. It possesses that ethereal fragrance due to the peculiar ethers of wine. The flavour is soft and mellow and the aroma is characteristic of a sound and matured wine-derived spirit. In view of these analytical and general evidences, this brandy may be described as particularly suitable for medicinal purposes." —**THE LANCET.**

"We have carefully examined a sample of this well-known spirit by the usual tests, and the results obtained by analysis fully warrant our recommending it for medical and dietetic purposes. We analysed this product some ten or more years ago, and finding that it still maintains its exceptionally high character, we are consequently in a position to speak highly of it as a genuine old brandy made from wine well matured and free from compounds which might detract from its value as a medicinal agent."—The **MEDICAL PRESS.**


THOS. CHRISTY & Co., 4, 10 & 12 Old Swan Upper Thames
ARABELLA
A Natural Mineral Water

# ARABELLA

## —A Natural Mineral Water.

Arabella Water is, in the opinion of many medical men, an ideal treatment for chronic constipation, sluggish liver, gout and gall-stones, and of especial value in the treatment of kidney affections. The analysis indicates a proportion of salts which meets the unqualified approval of specialists. Arabella Water is a pure, natural mineral water, tasteless and wonderfully effective. It is bottled at the Springs, at Kelenföld, near Budapest, Hungary, and is readily obtainable anywhere in Great Britain.

## AN INVITATION TO MEDICAL MEN.

If you have never employed Arabella Water either personally or by prescription, we shall be glad to supply a Sample Bottle, gratis and post free, with analysis and data, to any Medical Men in practice. We confidently commend this grand water to your notice, knowing that a trial will readily demonstrate its superiority.

**THOS. CHRISTY & CO.,** 4, Old Swan Lane, London, E.C.

---

# NICHOLSON'S

# DRY GIN.

## THE PUREST SPIRIT MADE.

**THE LANCET,** *May 5th*, 1906, says:—

"The chief merit of this spirit consists in its remarkable purity; it is practically free from acidity and extractives, the latter amounting to only 0·04 per cent. As to secondary products, only ethers occurred in important quantity, while there were mere traces of higher alcohols and aldehydes and absolutely no furfural at all. The flavour of the spirit is characteristically dry, certainly as regards sugar, but it has that sweetness peculiar to gin of the finest description. Gin, as is well known, possesses diuretic properties and is one of the most useful stimulants in many pathological conditions, being absorbed and eliminated from the system with great rapidity."

FREE SAMPLES TO MEDICAL MEN.

J. & W. NICHOLSON & CO., Ltd., Distillery, Clerkenwell, London, E.C.

"Solurol THE NEW REMEDY IN GOUT."

SOLUROL is a nuclein derivative which possesses the property of holding uric acid in solution and thus preventing its deposition in the tissues.

An article on "Uric Acid: A Rational Treatment for its Elimination."—The Lancet, July 1st, 1905, p. 19.

SOLUROL TABLETS
(4 grs. each), in bottles 2/6, 4/6 & 8/6.

Allen & Hanburys Ltd., Lombard St., London.

. . "SANITAS" DISINFECTANTS . .

— WE ARE NOW PREPARED TO SUPPLY —

| | | |
|---|---|---|
| "SANITAS OKOL" FLUID | of guaranteed co-efficiency | 22 |
| "SANITAS BACTOX" FLUID | " " | either 10 or 13 |
| "SANITAS SPECIAL" FLUID | " " | from 7 to 8 |
| "SANITAS CREOCIDE" FLUID | " " | " 5 to 6 |
| "SANITAS SOLDIS" FLUID | " " | " 2 |

*N.B.—"Sanitas Special Fluid" is the only existing Germicide which is also an oxidising agent.*

"SANITAS FLUID," the Standard Disinfectant for Sick Rooms, Nursing and Operations—a combined Germicide and Oxidant.
(See Bacteriological Report by Dr. John C. Thresh.)

— ALSO —

"SANITAS SULPHUR CANDLES" (Kingzett's Patents). "SANITAS DRAIN TESTERS," in four varieties (Kingzett's Patents).
"SANITAS FORMIC FUMIGATORS," for wet Formic Fumigation (Kingzett's Patents).
"SANITAS FORMIC LAMPS," for volatilising Formic Tablets. Disinfectant Fluids, Powders, and Soaps of all kinds, &c.

THE "SANITAS" Co., Ltd., Locksley Street, Limehouse, London, E.
(C. T. Kingzett, F.I.C., F.C.S., Chairman.)

BENGUÉ'S ANALGESIC BALSAM (*MENTHOL, SALICYLATE of METHYL, LANOLINE*)

For RHEUMATISM, GOUT, AND NEURALGIA. *FREE SAMPLE on application.*

BENGUÉ'S PURE ETHYL CHLORIDE
(For Local and General Anæsthesia).

ANESTILE
(For Local Anæsthesia).

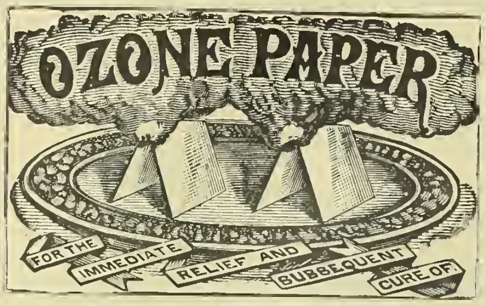
NARCOTILE
(Pure Ethyl Chloride specially prepared for General Anæsthesia).

BENGUÉ & CO., *Manufacturing Chemits*, Paris, New York, Frankfort.
LONDON: 91, Great Titchfield Street, W.

The WAND MANUF. COMPY. Pill Factory, Leicester, Eng.,
ARE THE SPECIALISTS FOR

PILLS

OF EVERY DESCRIPTION. Round and Oval, also Oval Granules.


OZONE PAPER
FOR THE IMMEDIATE RELIEF AND SUBSEQUENT CURE OF

# ASTHMA,

**CHRONIC BRONCHITIS, BRONCHITIS, ASTHMA, HAY FEVER, and INFLUENZA.**

This remedy is made by passing thick bibulous paper through a Solution of Nitrate of Potash, Chloride of Potash, and other Chemicals.

DIRECTIONS.—Fold and place one or two pieces of paper on a dish and light the top as illustrated. A dense fume will then arise and gradually fill the room; and after inhaling it for a few minutes the air-tubes will be cleared of mucus, the difficult respiration will cease, and the patient will fall into a sound and refreshing sleep. The outer air must be excluded by keeping the windows, doors, and chimney closed. The paper may be burned in the day as well as at night if necessary.

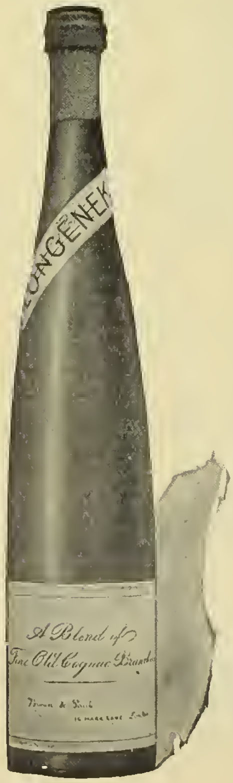
Price 2s. 9d., 4s. 6d., and 11s. per box.

Dr. Thorowgood, Physician of the City of London Hospital for Diseases of the Chest, in his "Notes on Asthma," page 62, says:—"The Ozone Paper prepared by Mr. Huggins contains nitrate of potash, chlorate of potash, and iodide of potassium, and of its efficacy I have had abundant evidence." Dr. Woodward, Worcester:—"Your Ozone Papers have given me more permanent benefit than any other remedy I have tried. I have also found the same with regard to my Asthmatic patients."

Usual discount to the Profession and Trade.

*Prepared by*
**R. HUGGINS & CO., Chemists, 199, STRAND, LONDON.**

---



# LONGENEK

Fine Vintage
BRANDY.

*PURE*
*GRAPE.*

BROWN & PANK,
London.

---

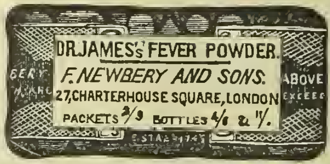
## PUREST CHLOROFORM AND ABSOLUTE ÆTHER PURISS.

*As exclusively used by the most eminent Anæsthetists in the United Kingdom.*

SALAMON & CO., Ltd., Chemical Manufacturers,
Rainham, Essex.

---

## PULVIS JACOBI VER., NEWBERY,


DR. JAMES'S FEVER POWDER.
F. NEWBERY AND SONS.
27, CHARTERHOUSE SQUARE, LONDON
PACKETS 2/9 BOTTLES 4/6 & 11/.
ABOVE

This is the ORIGINAL ARTICLE from the recipe in DR. JAMES'S OWN HANDWRITING in the possession of MESSRS. NEWBERY.

Prices for Dispensing:
1 oz., 9s.; ¼ oz., 3s. 4d.

27 & 28, Charterhouse Square,
and 44, Charterhouse Street,
London, E.C.; 125 years in St. Paul's Churchyard.

---

## DINNEFORD'S FLUID MAGNESIA.

The most efficacious Antacid and Mild Aperient for delicate constitutions, Ladies, Children, and Infants.

ALL WHOLESALE DRUGGISTS.

---

# PROTENE (The BRITISH Milk-Proteid.)

and PROTENE BREADS, BISCUITS, COCOA, for Dyspepsia, Malnutrition, &c.

Special STARCH-and SUGAR-FREE FOODS for Diabetes.

Analyses, Samples, and Price List free to Members of the Medical Profession on application to

*Teleph. No.*] [*1380 Padd.*

**THE PROTENE CO., Ltd., 36, WELBECK STREET, LONDON, W.**

---

Prepared from the **Original Formula** of Sir A. B. GARROD.

# HOGG'S LITHIA WATERS.

**R. HOGG & SON,**
**1, Southwick St., W.**
*Sold in Bottles and Syphons.*

---

# AUSTRIAN VOESLAU-GOLDECK WINES

(R. SCHLUMBERGER'S OWN GROWTH).

AS PERMITTED DURING TREATMENT FOR URIC ACID TROUBLES AT CARLSBAD, MARIENBAD, AND OTHER SPAS.

SOLE AGENTS: **SCHLUTER & CO.**
50, MARK LANE, LONDON, E.C.

---

# "G. B." DIABETES WHISKY.

**49/- PER DOZEN, CARRIAGE PAID.**

THE LANCET Analysis post free.

**GEORGE BACK & CO.,** Devonshire Square,
BISHOPSGATE, LONDON. Telegrams—"Diabetes, London."

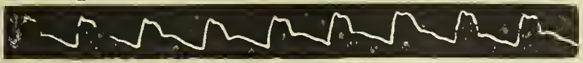
# Antitoxine

*(Strengthens the Heart's Action.)*

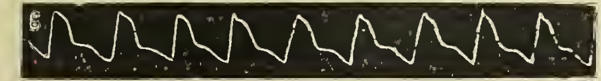
**The only Antipyretic and Antineuralgic which has been demonstrated by the Sphygmograph to be a powerful heart stimulant.**

Every physician will prescribe Antitoxine in preference to any other antipyretic when convinced that it is genuinely heart-strengthening. Physicians can prove this by using the sphygmograph.

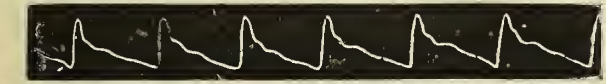
Sphygmographic tracings from female patient, aged 17, suffering from circumscribed pleurisy after Influenza. A uniform pressure of 2 ounces was maintained by the sphygmogragh, and a speed of 36 inches per minute for tracings (A) and (B), and 42 inches per minute for tracing (C).



(A.)—Tracing (A) was taken with patient in bed at 2 P.M. She was suffering pain, and was made very nervous by the application of the sphygmograph. Pulse 117, temperature $100\frac{4}{5}$. Localised pleuritic pain 10 grains "Antitoxine" were given.



(B.)—Tracing (B) was taken at 2 30 P.M. or 30 minutes later. Pain considerably lessened, patient still very nervous, pulse 117, temperature $100\frac{1}{5}$.



(C.)—Tracing (C) taken at 3.10 P.M. or 40 minutes later. Pain and nervousness materially lessened. Pulse 94, temperature $99\frac{3}{5}$. Tracing paper passed 42 inches per minute instead of 36.

**PRICE:** Powder or Tablets, $\frac{1}{4}$-oz., 1s. $0\frac{1}{2}$d.; 1 oz., 3/6.

**THE BRITISH ANTITOXINE MFG. CO.**, 47, Holborn Viaduct (opposite the City Temple), late of 31, Snow Hill, E.C.

---

# FROMY'S

## "MEDICAL RESERVE"

## COGNAC.

Regis tered.

## A PURE GRAPE BRANDY OF ABSOLUTE PURITY.

"Fromy's 'Medical Reserve' possesses those delicate æsthetic qualities and fragrance characteristic of the genuine produce of Charente. **Altogether the Brandy is of a fine elegant character and well adapted for medicinal purposes."**

—The Lancet, 17/3/1906.

*Wholesale Agents:*

**E. G. SAWORD & CO.,**
43-5, Great Tower Street,
LONDON, E.C.

Obtainable throughout the World.

Applications for Wholesale Agencies for certain countries will be entertained by the Shippers—

**FROMY, ROGÉE & CO., Cognac.**

---

*Specialite.*

# NURSERY MILK FROM JERSEY COWS

Telephone: 155 Richmond. Estab. 1852.

## J. CLARKE & SONS

*HYGIENIC DAIRY FARMERS.*

Chief Office—46, Hill Rise, Richmond, S.W.; and at East Twickenham, Kew Gardens, East Sheen, and Chiswick.

Dairy Farm—East Twickenham.

THE LANCET says: "Of exceptionally good quality. Shows the rich composition of the milk yielded by this Jersey breed of cows."

*Three deliveries daily in above districts.*

---

# WOLFE'S

*Aromatic Schiedam*

# SCHNAPPS

The Purest Spirit distilled for human consumption. Admirable as a Pick-me-up, Tonic, or Digestive. As a Beverage it combines happily with aërated waters. And, in addition, WOLFE'S SCHNAPPS has well-known Medicinal virtues, notably in the case of Delicate Women.

*To be had of all Wine and Spirit Merchants, Licensed Grocers, &c.*

Wholesale Agents for the United Kingdom:
The FINSBURY DISTILLERY CO., London.

---

# VILLACABRAS

## SPANISH NATURAL APERIENT WATER.

**The Most Efficacious under Smaller Dose.**

Employed in cases of Hepatic, Gastric, and Intestinal Complaints, by reason of its laxative and depurative properties. Being very rich in sulphate of soda, it has no griping effect, and is not followed by secondary (reactive) constipation.

*Samples Free to the Medical Profession, with full particulars, on application to*

PAUL SANLAVILLE, 104, High Holborn, W.C.

---

# "GAMGEE TISSUE"

**(Absorbent Gauze and Cotton Tissue).**

Sole Proprietors and Manufacturers,

**ROBINSON & SONS, Limited, Chesterfield.**

---

# SAL HEPATICA

EFFERVESCENT SALINE LAXATIVE.

URIC ACID SOLVENT.

A combination of the Tonic, Alterative, and Laxative Salts similar to the celebrated Bitter Waters of Europe, fortified by the addition of Lithia and Sodium Phosphate.

It stimulates the liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation, and metabolism.

Especially valuable in Rheumatism, Gout, Bilious Attacks, Constipation.

Most efficient in eliminating toxic products from intestinal tract or blood, and correcting vicious or impaired functions.

WRITE FOR FREE SAMPLE.

**BRISTOL-MYERS CO.,**
277-279, Greene Avenue,
Brooklyn, New York, U.S.A.

On sale by Jobbers and Thomas Christy & Co., 4, 10, and 12, Old Swan Lane, Upper Thames St., London, Eng.

TRADE MARK.

REGISTERED.

Consisting of nearly pure PEPTONS and EXTRACTIVE from the ARTIFICIAL DIGESTION of MEAT.

Five Suppositories contain the Extractive of 20 ounces of Meat; in addition to the Peptone.

R. H. BOUCHIER NICHOLSON, Esq., Hull Infirmary, in a case of Gastrostomy, says:—"*The Beef Suppositories* (made by SLINGER & SON, York) *were of much benefit, the man saying he felt great comfort from their use. The man was saved the pangs of starvation from which he was fast sinking, when I first saw him.*"

Manufactured only by RAIMES & CO. (Successors to SLINGER & SON), Wholesale Druggists, York. Wholesale Agents: Messrs. NEWBERY & SON, 27 & 28, Charterhouse-square, London, E.C.

May also be had of all Wholesale Druggists and Chemists' Sundrymen.

**BUCHANAN'S**

**'Black & White'**

**WHISKY**

WHEN the patient's condition is such that a fish diet is considered desirable,

**"SKIPPER" SARDINES**

may confidently be recommended.

For the natural delicate flavour of these silvery, scaleless little fish is such that they are keenly relished by the invalid, who will often accept them when all other forms of nourishment have been rejected.

**"SKIPPER" SARDINES,** while being a nutritious food in themselves, are rendered even more so by the pure olive oil in which the fish are packed.

Sample Package 6D., post free to any Medical Man or Hospital Board.

ANGUS WATSON & CO. (Dept. 18),
NEWCASTLE.

*(Canners: Chr. Bjelland & Co., Stavanger, Norway.)*

CALLARD'S
SUGARLESS
MARMALADE
This Preserve is guaranteed FREE from Carbo-Hydrates.
THE LANCET says: "It affords a good adjunct to the diabetic Dietary."
CALLARD & CO.,
REGENT STREET, LONDON, W.

**NEW DIABETIC FOODS**

To supersede the old repulsive Gluten Foods.

**FREE SAMPLES TO MEDICAL PROFESSION.**

**CALLARD'S FOODS ARE GUARANTEED TO BE FREE FROM STARCH & SUGAR.**

*DIABETIC COOKERY BOOK. 1s.*

**CALLARD & CO.,** *FOOD SPECIALISTS by Royal Appointment,*
74, REGENT STREET, LONDON.

## THE SERUM TREATMENT
OF
# HAY FEVER,

**Autumnal Catarrh, Rose Fever,**
AND
**Similar Complaints.**

## POLLANTIN

**(ANTIDOTE for POLLEN TOXINE)**
FOR EXTERNAL USE.

***(Patented in Germany, England, the United States, &c.).***

**Prepared under supervision of the discoverer,**
**Prof. Dr. DUNBAR,**
BY
**SCHIMMEL & CO., Miltitz, near Leipzig,**
**GERMANY.**

***Sole Agents for the U.K. and British Colonies (Canada and Australasia excepted):***
**WILLOWS, FRANCIS, BUTLER & THOMPSON, Ltd.,**
*WHOLESALE DRUGGISTS,*
40, Aldersgate Street, London, E.C.

---

## Hospital Dietary.

The Oxo Company invite Medical Officers, Councillors, Guardians, and Stewards to carefully compare Oxo financially and from the medical standpoint, not only with fresh meat but also with any kindred article.

SAMPLE AND LITERATURE ON APPLICATION.

**OXO**

4, Lloyd's Avenue, London, E.C.

Cattle Farms over 1,000,000 acres.

Standing Stock Cattle 200,000 head.

---

# EAU DENTIFRICE.

3 oz. Bottle
2/6.
*Lasts several months.*

Smaller Sizes
1/-, 1/6.
*Postage Paid.*

Dr. Pierre
SPRINKLER
EAU
Dentifrice
DU
DOCTEUR PIERRE
de la Faculté de Médecine de Paris
CLEANSES AND PRESERVES THE TEETH AND GUMS
CONTAINS NO ACID
DIRECTIONS FOR USE
Pour a few drops into a tumbler of water
GRAND PRIX
1900

CELEBRATED
**for its Aromatic and Antiseptic qualities due to the vegetable substances used in its preparation.**
*Samples free to the Medical Profession and goods at Wholesale Prices.* ***Depot A, 203, Regent St., W.***

---

## THE
## UP TO DATE
# DIABETIC FOODS,

as supplied to the leading Hospitals and recommended by the Highest Authorities.

**THE MOST PALATABLE SUGARLESS AND STARCHLESS FOODS MADE.**

**ALL THE LATEST VARIETIES.**

*SAMPLES & CATALOGUE FREE.*

## BONTHRON & CO.,
**50-52, GLASSHOUSE ST.,**
**106, REGENT ST., W., LONDON**

### DR. MELZER'S

# CATHETERPURIN.

*According to Professor L. CASPER, of Berlin University,*

## AN IDEAL LUBRICANT FOR CATHETERS, &c.

**CATHETERPURIN** does not irritate the urethra.
**CATHETERPURIN** renders instruments very smooth and easily introduced
**CATHETERPURIN** destroys germs present in the urinary tract, or at least impedes their development
**CATHETERPURIN** is soluble in water, rendering any washing and antiseptic process desired easily effected.
**CATHETERPURIN** fulfils all the requirements of a lubricant, both in theory and practice.

THE PRACTITIONER, November, 1906:—"Distinctly useful and, above all, safe." THE MEDICAL PRESS, Dec. 8th, 1906:—"Answers the purpose of an antiseptic lubricant well."

*TUBES, with Literature, 2/- post free from*
**REITMEYER & CO.,** 63, CRUTCHED FRIARS, LONDON, E.C.

---

# BARFF BORO-GLYCERIDE.

The Finest known **ANTISEPTIC** for **WOUNDS.**

"Nothing can be better than the action of this compound," says THE LANCET.

"Healing takes place in the most beautiful and perfect manner." THE LANCET.

"Boro-glyceride," writes a Surgeon, "is the most powerful antiseptic for wounds ...... the rapidity of healing is almost marvellous."

BORO-GLYCERIDE is sold—**5/-** lb. **2/6** ½ lb., **1/-** Bottles, and Tubes **-/6.**

**KREOCHYLE LIQUID MEAT.** Food and stimulant for INFANTS and INVALIDS.

**THE KREOCHYLE CO., Viaduct House, Farringdon Street, LONDON.**
SAMPLES OF BOTH PREPARATIONS WILL BE SENT FREE OF CHARGE.

---

# "WINCARNIS"

## A Most Useful Tonic for Anæmia and Debility.

COLEMAN'S "WINCARNIS" is a dependable restorative, which moderately exalts the energies of all parts of the body, without causing any deviation of healthy function. While ordinary stimulants are transient in their influence, "Wincarnis" is delightfully refreshing, agreeable and almost instantaneously recuperative.

PHYSICIAN'S SAMPLE BOTTLE sent FREE and Post-paid. A post-card with full name and address is quite sufficient, with name of this publication. Over 8000 Members of the Medical Profession have endorsed "Wincarnis" as a restorative tonic of great value, especially in Anæmia and Debility.

Proprietors: COLEMAN & CO., LTD., WINCARNIS WORKS, NORWICH.

---

# BRAND & CO.'S MEAT JUICE.

**The Juice of the FINEST SELECTED ENGLISH MEAT in its Natural State, containing the Albumen uncoagulated, together with the other NUTRITIVE PROPERTIES READY FOR IMMEDIATE ASSIMILATION.**

*Of ALL CHEMISTS, or direct of* **BRAND & CO., LTD., MAYFAIR, W.**

# ACKERMAN-LAURANCE

## "BRUT-ROYAL"

A CHOICE AND INEXPENSIVE SPARKLING WINE OF FRANCE.

**FREE FROM ADDED SUGAR.** *OBTAINABLE EVERYWHERE.*

48/= per dozen bottles. 26/= per dozen ½=bottles. 14/= per dozen ¼=bottles.

**Recommended for Invalids, especially those of a Gouty or Rheumatic tendency.**—Vide Sir CHARLES A. CAMERON'S Report

*Sample forwarded to any Medical Man free on receipt of 4d. in stamps for postage enclosed with card.*

**J. N. BISHOP & ANDERSON,** General Agents, 130, Cooper's Row, London, E.C.

# TARASP WATER

**Nature's Remedy for INDIGESTION, GOUT, OBESITY**

Sole Importer—**RICHARD DAVIS,** 20, MADDOX STREET, REGENT STREET, W.

# GLUTEN FLOUR.

Telegraphic Address: "GLUTENS, LONDON." ESTABLISHED 1859.

Containing 7% Starch and no Sugar. Manufactured by G. VAN ABBOTT & SONS, Original Manufacturers of all Gluten and Soya Foods for Diabetes, BADEN PLACE, CROSBY ROW, BOROUGH S.

# DIABETES OBESITY

BLATCHLEY'S Celebrated Bread and Biscuits supplied to nearly all the London and County Hospitals & Infirmaries. Blatchley's Gluten and Bran Biscuits, a speciality in treatment of Obesity, made from a receipt of Dr. Yorke-Davies. Price Lists free.

**E. BLATCHLEY, 167, Oxford St., London.**

## THE NEW FOOD FOR INFANTS

# HUMANOID

*Trade Mark Regd.*

*A CONCENTRATED HUMANIZED MILK, ONLY REQUIRING DILUTION WITH WATER.*

Prepared only by **THE AYLESBURY DAIRY CO., LTD.**

Chief Office: 31, St. Petersburgh Place, BAYSWATER

DELIVERIES OF MILK, CREAM, BUTTER, ETC., TO ALL PARTS.

# CONTREXEVILLE SOURCE DU PAVILLON

The only one under the protection of the French Government

**DIURETIC, LAXATIVE, DIGESTIBLE**

**BEFORE AND AT MEALS**

RECOMMENDED BY THE HIGHEST MEDICAL AUTHORITIES THROUGHOUT THE WORLD

**SPECIFICALLY INDICATED** BY THEM, FOR REGULAR DAILY USE BY PERSONS LIABLE TO BECOME SUBJECT TO

**GOUT, GRAVEL, ARTHRITIS AND RHEUMATISM**

*Samples free to Members of the Medical Profession on application to* **INGRAM & ROYLE,** *East Paul's Wharf, 26, Up. Thames st., E. C.*

# PURE HIGHLAND MALT POT-STILL WHISKY.

**Guaranteed Finest Quality and supplied from 8 to 15 Years Old.**

*Absolutely no other Whisky supplied by*

**T. M. MACKENZIE & CO.,** PURE MALT WHISKY MERCHANTS AND EXPORTERS,
THE BONDED WAREHOUSES, INVERGORDON, ROSS-SHIRE, N.B.

---

# PAPKERCHIEFS (Regd.)

THE PERFECTED SUBSTITUTE FOR LINEN HANDKERCHIEFS.

Obtainable of Messrs. S. MAW, SON & SONS; DOWN BROS, Ltd.; W. H. BAILEY & SON, Ltd.; and THE PAPKERCHIEF SYNDICATE, 99-101, KINGSLAND ROAD, LONDON, N.E.

*Samples, Analytical Report, Literature Free.*

---

## POND'S TOE-SPRING (*Pat'd*) FOR BUNIONS.

THE LANCET, April 7th, 1900:—
"In aggravated conditions of Bunion a toe-spring, of which a specimen has been submitted to us, *is likely to be of service.* It practically consists of a spring splint, and can be *worn at night* to keep the great toe in a normal position during sleep."

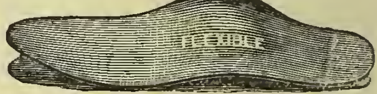
*Send outline of foot for size.*

Price 3s. 9d. each.

## POND'S ARCH-SUPPORT SOCKS

PATENT 8491.

Flat feet prevented and cured.



Worn inside ordinary boots. Requires same space as Cork Socks

PRICES:

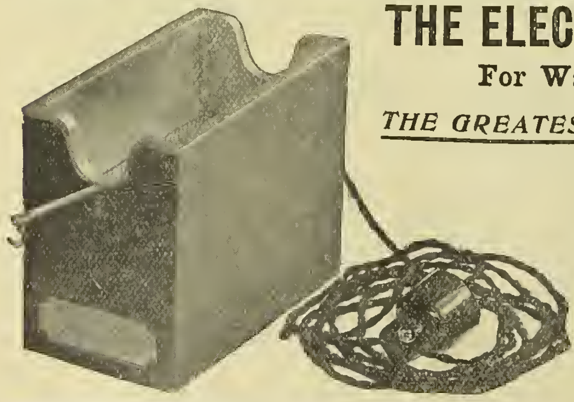
Ladies, 5s.; Gents., 6s. per pair; Singles, 3s. Post 3d.

Extract from THE LANCET:—"A widespread, comfortable support."

*Send outline of feet for size.*

Patentee: J. POND, Surgical Bootmaker, CASTLE MEADOW, NORWICH.
London Agent: HAWKESLEY, 357, Oxford Street, W.

---



## THE ELECTRIC HYGIENIC FOOD WARMER

**For Warming Infants' and Invalids' Food.**

*THE GREATEST BOON TO MOTHERHOOD OF THE TWENTIETH CENTURY.*

**SIMPLE—SAFE—ECONOMICAL**

IT IS THE CHEAPEST METHOD OF INFANTS' FOOD WARMING INVENTED.

*Send for Illustrated Pamphlet giving full particulars.*

**REAVELL BROS. & CO.**
(Dept. L.), ALNWICK, ENGLAND.

---

(REGISTERED **TENAX** TRADE MARK.)

**ABSORBENT AND ANTISEPTIC.**

Specially prepared for Surgical Purposes, and superseding lint, cotton wool, tow and oakum, for Dressings

"It possesses the tarry fragrance which is pleasing to patients; it is a cheap and simple kind of antiseptic dressing, capable of being applied to numerous surgical purposes, and is well worthy the attention of medical men engaged in hospital or private practice. We may safely recommend it, and it has answered admirably in the cases in which we have employed it."—THE LANCET.

In packets containing 1 lb. each, 1/4 per lb.

**SOUTHALL BROS. & BARCLAY, Ltd., Birmingham.**

## MOSQUITO - PROTECTOR.—ARMBRECHT'S PYRETHRUM.

TEN DROPS TO A TABLESPOONFUL OF WATER AND SPONGED OVER EXPOSED PARTS PREVENTS INSECTS FROM BITING FOR ABOUT TWELVE HOURS.

2s. 9d. a Bottle post free inland ; 3s. 9d. to all parts of the world.

ARMBRECHT, NELSON & CO., 71 & 73, DUKE STREET, GROSVENOR SQUARE, W.

---

GESTATION
AND
RESTORING
SURGICAL
**CORSETS & BELTS.**

## SYKES, JOSEPHINE & CO.

*(ESTABLISHED A.D. 1840),*

**CORSET and BELT SPECIALISTS**
**To the Medical Profession.**

280, REGENT ST., OXFORD CIRCUS, LONDON.

COMPRESSION
FLOATING KIDNEY
AND
OBESITY
**CORSETS & BELTS.**

---

## FR. GUSTAV ERNST,

**80, CHARLOTTE STREET, FITZROY SQUARE, W.,**

**INVENTOR,**

**Orthopædic, Anatomical, and Gymnastic Mechanist, Manufacturer of Surgical Instruments, Elastic Bandages, &c., &c.**

BY APPOINTMENT TO THE NATIONAL ORTHOPÆDIC HOSPITAL. &c

---

**MONTHLY CATALOGUE of SECONDHAND and NEW SURGICAL INSTRUMENTS, OSTEOLOGY, MICROSCOPES, POST FREE.**

Students' Half Sets of Osteology, £1 10s , £2 2s., £2 10s. Secondhand Surgical Instruments. Osteology, Microscopes bought. Articulated Skeletons lent on hire. Dis-articulated Skulls, £1 15s., £2 2s., £2 10s. Secondhand P. & O. and other Steamship Co.'s Outfits at greatly reduced prices.

**MILLIKIN & LAWLEY, 165, STRAND, LONDON.**

---

"MOST VALUABLE FOR FLAT-FOOT."

## IMPROVED INSTEP ARCH SOCK (HOLLAND'S PATENT).

BRITISH MEDICAL JOURNAL, November 10th, 1893:—"The INSTEP ARCH SOCK has been long and widely used, and the new form appears to embody a distinct improvement."

THE LANCET, June 11th, 1898:—"The INSTEP ARCH SOCK introduced by Mr. Thomas Holland is a useful appliance."

The Sock is worn inside the Boot. A tracing of the foot is the best guide for size.

Gents., 7/6 per pair. Ladies, 6/6 per pair. 4/- single. Small size Children's, 5/6.

## NATURAL SHAPED BOOTS.

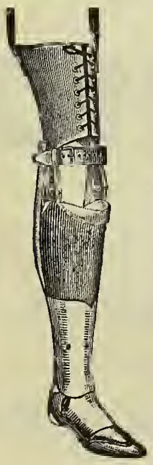
ENGLISH HAND MADE.

**Oak-bark tanned leather. Neat looking, strong, light in weight. Will wear well. For Gentlemen, Ladies, and Children.**

**INEXPENSIVE AND NOT UGLY.**

**HOLLAND, 46 (late 40), South Audley Street, London, W.** Telephone:— Mayfair 1687.

---



PRIZE MEDAL.

## ARTIFICIAL EYES, LEGS, ARMS, & HANDS.

## GROSSMITH'S

**ARTIFICIAL LEGS.** with **PATENT ACTION KNEE- and ANKLE-JOINTS**, enable the patient to walk, sit, or ride with ease and comfort, wherever amputated. They are lighter in weight, less expensive, and more durable than any hitherto introduced, and are worn by Ladies and Children with perfect safety. They were awarded PRIZE MEDALS at the Great International Exhibitions of London, Paris, Dublin, and wherever they have been exhibited, and pronounced by the Surgical Juries to be "excellent in manufacture," "well constructed," and "on a system superior to all others."

The **PRIZE MEDAL ARTIFICIAL EYES** have now been brought to the greatest perfection, and are so easy of adaptation that they are fitted in a few minutes, without pain or operation, in any case where sight has been lost. The colours are perfectly matched, and a movement obtained in accordance with the action of the natural eye. They are the only artificial Eyes which have been awarded Prize Medals at the Great International Exhibitions of London, Paris, and Dublin.

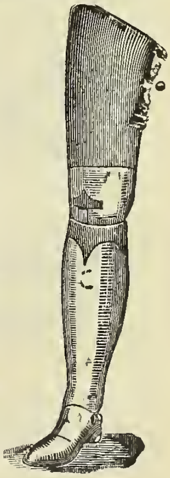
"Mr. Grossmith's house has been highly reputed for upwards of a century for the manufacture of well-devised and useful Artificial Limbs, and they are in every way worthy of commendation."—THE LANCET.

"Mr. Grossmith's Artificial Legs, Hands, and Eyes are most beautiful and perfect imitations of the natural."—MEDICAL TIMES AND GAZETTE.

For Price Lists and full information, apply to W. R. GROSSMITH'S LEG, HAND, and EYE FACTORY.

**Manufactory, 110, STRAND, LONDON.**

Established in FLEET STREET, 1760.



SOUTHALLS'
**Accouchement Sets**
(3 sizes), 10/6, 21/-, and 42/- eace.
Outfits containing Selections from
Southalls' Sanitary Specialities.
SOUTHALLS' ACCOUCHEMENT SHEETS
in 3 sizes, 1/-, 2/-, and 2/6 each.
SOUTHALLS' TOWELS (PATENTED)
The Original and Best.
*Sanitary, Antiseptic, Absorbent and of Downy Softness.*
**SOUTHALL BROS. & BARCLAY, LTD.,**
BIRMINGHAM.

**OZONE**
For Therapeutic Purposes.
FOR PUBLIC INSTITUTIONS
AND PRIVATE USE.
*40 Page Illustrated Pamphlet sent post free on receipt of card to*
**OZONAIR, Limited,**
27, CHANCERY LANE, LONDON, W.C.

**HOOPER'S WATER BEDS**
(SALE OR HIRE).

**7, PALL MALL EAST, LONDON, S.W.**
Telegrams—"SUPERABOUND, LONDON." 'Phone 3857 GERRARD.

The Emerson Shoe
HONEST ALL THROUGH
425 STRAND W.C.

*Special Features:—*
THE EMERSON "STEEL ARCH SUPPORT" in every pair.
"ORTHOPEDIC" & "AMERICAN" correct shapes
"VISCOLIZED" (WATERPROOF) SOLES.
**21/-** HANDSEWN WELT. | **16/6** GOODYEAR WELT.
WILLIAM H. JENKINS, Manager.
(Next LANCET Building.)

**11 GREAT INTERNATIONAL MEDALS.**

**CONDY'S FLUID**
THE PIONEER OXIDANT.
AN OBVIOUS DEODORANT & PURIFIER LEAVING NO ODOUR.
A COMFORT IN THE SICK ROOM, PURIFYING THE AIR.
ASEPTIC IN SURGERY.
A CLEANSING GARGLE & MOUTH WASH. NON-POISONOUS.

*Full directions for 150 uses are attached to every bottle of* CONDY'S FLUID]

### Total Percentages of the Lymph Returns for 1906.

| | Case % Success. | Insertion % Success. |
|---|---|---|
| Primaries .. .. | 99·4 | 97·6 |
| Revaccinations .. | 100 | 96·9 |
| Total .. .. .. | 99·4 | 97·5 |

Metal Tubes (one vaccination), 6d. each, 5/- per doz.
Glass Capillary Tubes at the same rate.

Wholesale Agents:
**Allen & Hanburys Ltd.,** Lombard Street, **London.**

---

THE ASSOCIATION FOR THE SUPPLY OF PURE VACCINE LYMPH, &c.
14a, Great Marlborough Street, London, W.

## Results of 8 Years & 3 Months Consecutive Weekly Trials.

**OF THE**

**C. P. P.**

Being a proof positive that the patient being susceptible and the directions followed success is practically certain.

THE MOST CONVENIENT, SIMPLE, AND BEST VACCINATOR. SAMPLE FREE.

**Nos. attempted, 3534; Insertions, 10,602; Vesicles, 10,342 (= 97·5%); Typical, 90·5.**

Tubes, 2/-; Half-Tubes, 1/- each; C.P.P.'s and S.V.'s., 6d. each; Singly, 7d. each.

*Agents wanted on "sale or return." Apply to the Secretary for Circular.*

---

## DR. RENNER'S ESTABLISHMENT

**for VACCINATION with CALF LYMPH,**

**75, UPPER GLOUCESTER PLACE, LONDON, N.W.**

**The Oldest Original Calf Vaccine Institution in this Country.**

Prices for Calf Lymph (GLYCERINATED):—

| | |
|---|---|
| Large Tubes ... ... ... ... | 2s. each or 3 for 5s. 0d. |
| Small do. ... ... ... ... | 1s. each or 3 for 2s. 6d. |
| Half do. 8d. each ... ... ... | 2 for 1s. or 6 for 2s. 6d. |

CONCENTRATED PULP.

Large Vials (80 vaccinations), 10s. 6d. each. Small (half) vials, 5s. 6d. each.

Registered Telegraphic Address—"Vaccine, London."

---

Prepared strictly in accordance with the methods advocated by Dr. S. Monckton Copeman, F.R.S.

***Free from ERYSIPELAS & TUBERCLE.***

## JENNER INSTITUTE

### ASEPTIC GLYCERINATED

## CALF LYMPH

Tubes, 1s. each, 10s. per dozen. Postage 1d
Half Tubes, 3 for 1s. 6d., 5s. per dozen. ,,

*Telegraphic Address: "SILICABON, LONDON."*

Postal Orders and Cheques to be made payable to JAMES DOUGLAS

**JENNER INSTITUTE FOR CALF LYMPH,**
**73, Church Rd., Battersea, London, S.W.**

---

## THE BIRMINGHAM CALF LYMPH,

204. VICTORIA ROAD, ASTON, BIRMINGHAM.

*Directors—JOHN ROUND, L.R.C.P., A. HIND, L.R.C.S., L.S.A.*

| | |
|---|---|
| 1 large Tube Glycerinated Lymph, | 1s.; 3 for 2s. 6d. |
| 2 small Tubes ,, ,, | 1s.; 6 for 2s. 9d. |
| Conserve, | 2s. 6d. |

All this Lymph is examined in the Bacteriological Laboratories and is free from Tubercle.

Sent on receipt of remittance by the Director, or by the Wholesale Agents

WYLEYS LIMITED, COVENTRY.

---

### DR. CHAUMIER'S

## CALF LYMPH.

GLYCERINATED AND REINFORCED.

**THE CHEAPEST AND MOST ACTIVE LYMPH.**

Prepared under the MOST MINUTE ANTISEPTIC PRECAUTIONS.

Supplied in Tubes, sufficient to vaccinate 1 or 2 persons, at 5d. each; per dozen, by 12 tubes or more, 4s. 6d. 10 persons at 8d. each; 25 persons at 1s. 3d. each. Collapsible tubes for 40 vaccinations, 2s. 6d. each. Packing and postage, 1d. in addition.

**To obtain a Sample Tube sufficient for 10 vaccinations, fill up accompanying Coupon,**

*Name* ..........................................................

*Address* ......................................................

..................................................................

**and send it (with 1½d. in stamps) to the Agents for Gt. Britain,**
**ROBERTS & CO., 76, New Bond St., LONDON, W.**

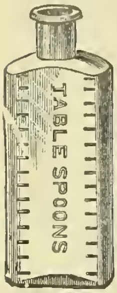
---

## BRASS DOOR PLATES.

**THOMAS MORING,**
***257, High Holborn, London, W.C.***
Book of Specimens Free on Application.

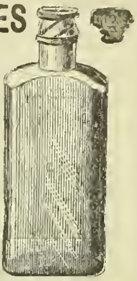
PROFESSIONAL ACCOUNT FORMS, STATIONERY, &c.

FLAT. FLAT.



HIGH-CLASS

## DISPENSING BOTTLES



GREEN FLINT.—ALL SHAPES.

| 3 | 4 | 6 | 8 | 12 oz. | |
|---|---|---|---|---|---|
| 8 3 | 8/3 | 9/0 | 9/0 | 13/6 | For Corks. |
| 12/3 | 12/3 | 13/0 | 13/0 | 20/6 | Screw Stopd. |

WHITE VIALS, Plain & Graduated

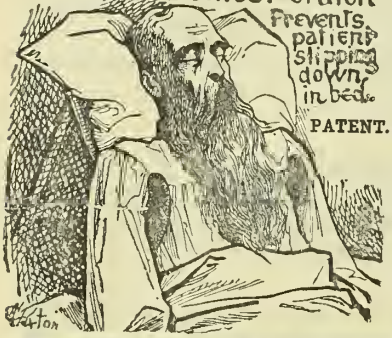
| ½ | 1 | 1½ | 2 | 3oz. |
|---|---|---|---|---|
| 3/11 | 4/3 | 4/9 | 5/6 | 6/9 per gross. |

*FREE ON RAILS IN LONDON.*
Price Lists on application.

**KILNER BROS., Ltd.,**
No. 8, G.N. GOODS STATION,
KING'S CROSS, LONDON.

ROUND EDGES. SCREW STOPPERED.

## Claxton's Bedrest Crutch


Prevents patient slipping down in bed.
Claxton

Price per pair,
Two Guineas,
post free.
Abroad, 2/6 extra.
*Cross all Cheques and Orders* COUTTS."
CAN ALSO BE HIRED
PATENT. None Genuine without Trade Mark,

ΧΛΑΞΤΩΝΙΑ

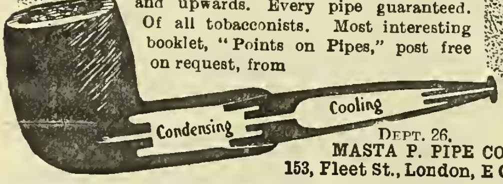
Can be adjusted to any patient for chair or bed-rest.

**L. CLAXTON**
62, STRAND,
W C.

## THE "MASTA" PIPE

ALLOWS NO NICOTINE

to enter mouth or pipe-bowl. The "MASTA" is very popular with the Medical Profession; it renders clogging and fouling impossible and smokes always cool and sweet Prices 2/6, 4/-, 5/6, 8/-, and upwards. Every pipe guaranteed. Of all tobacconists. Most interesting booklet, "Points on Pipes," post free on request, from



DEPT. 26,
MASTA P. PIPE CO.,
153, Fleet St., London, E C.

## DISPENSING BOTTLES AND PHIALS

FIRST-RATE QUALITY.—REDUCED PRICES.

I. ISAACS & CO., 106, Midland Road, St. Pancras London, N.W. (ESTABLISHED UPWARDS OF 50 YEARS).

CLEAR BLUE TINTED, with Rounded Edges, plain or graduated

| 3 and 4 oz. | 6 and 8 oz. | 12 oz. |
|---|---|---|
| 7/6 | 8/6 | 12/- per gross. |

WHITE MOULDED PHIALS, plain or Teaspoons.

| ½ oz. | 1 oz. | 1½ oz. | 2 oz. |
|---|---|---|---|
| 3/9 | 4/3 | 4/9 | 5/6 per gross. |

Prompt attention to Country Orders. Packages 1/- each, allowed for if returned. Bankers: London & Westminster Bank.

## DISPENSING BOTTLES AND PHIALS

THE ISLINGTON BOTTLE CO. (H. Harris & Co.),
7, New Inn Yard, Tottenham Court Road, London, W.

Have reduced their prices as follows:—

BLUE TINTED, plain or graduated into Parts or Tablespoons.

| 3 and 4 oz. | 6 and 8 oz. | 12 oz. |
|---|---|---|
| 7/6 | 8/6 | 12/- per gross. |

WHITE MOULDED PHIALS, plain or graduated.

| ½ oz. | 1 oz. | 1½ oz. | 2 oz. |
|---|---|---|---|
| 3/9 | 4/3 | 4/9 | 5/6 per gross. |

Country Orders, packages 1s. each, allowed for if returned. Bankers: London & Westminster Bank.

*A Trial Order would oblige.*

Best CORKS, for 6 and 8oz., 10d. per gross; for Vials, 9d. per gross.

## BRASS DOOR-PLATES

with MAHOGANY BLOCK ready for fixing to Door, Wall, or Gate.

With Name only ... ... ... ... 10s. 6d.
With Name and Profession ... ... 17s. 6d.

*SKETCHES and ESTIMATES Free of Charge.*

MEMORIAL BRASSES.

NOTE PAPER stamped with Address, Crest, &c.

EMBOSSING PRESS,
for Stamping own Paper with Address, Crest, &c.

SEAL ENGRAVING, DIE SINKING, & Engraving of every description.

GOLD SIGNET RINGS AND SEALS.

VISITING CARDS.

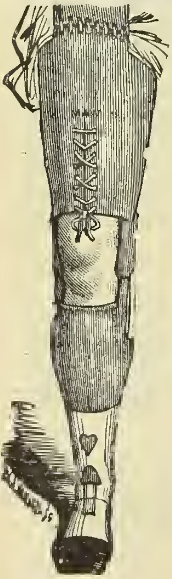
ARMORIAL BOOK PLATES ("ex libris").

LIVERY BUTTONS, HARNESS CRESTS.

SHIELDS with Arms of Colleges, Hospitals, &c.

HERALDIC PAINTING AND ENGRAVING.

**T. CULLETON, 92, PICCADILLY, LONDON.**



## ARTIFICIAL LIMBS, ORTHOPÆDIC APPLIANCES, HOSPITAL FURNITURE, &c.

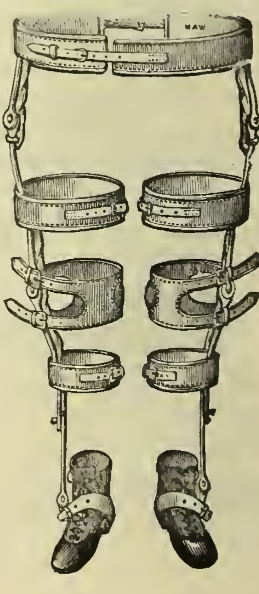
*EVERY FORM OF APPLIANCE MADE TO ORDER.*

Male and Female Fitters always in attendance, and will be sent to any part of the country by appointment.

## ILLUSTRATED CATALOGUE.

Any member of the Medical Profession not having received one of these is requested to notify us and we will gladly forward a copy.

**S. MAW, SON & SONS,**
SURGICAL INSTRUMENT MANUFACTURERS,
7-12, ALDERSGATE STREET, LONDON, E.C.
*ESTABLISHED 1807.*
Factories: ALDERSGATE ST.; CHARLES ST., HATTON GARDEN.
Telegrams: "ELEVEN, LONDON." Telephone: 3230 LONDON WALL.



# EDINBURGH POST-GRADUATE VACATION COURSE IN MEDICINE,

## IN CONNEXION WITH THE UNIVERSITY AND ROYAL COLLEGES.

The Course will be held from 2nd to the 28th **September, 1907**, and will comprise—

**CLINICAL INSTRUCTION, DEMONSTRATIONS,** and **PRACTICAL LABORATORY WORK,** upon the various branches of Medicine and Surgery and collateral subjects.

The instruction will be given in the **UNIVERSITY, ROYAL INFIRMARY, ROYAL HOSPITAL FOR SICK CHILDREN,** and other Teaching Institutions.

Arrangements may be made for residence in University Hall.

*POST-GRADUATE COURSES of three months' duration, beginning in October, January, and May, are being organised.*

A Syllabus containing all particulars, and any further information, may be obtained from the

***Secretary, University New Buildings, Edinburgh.***

---

## Western Skin Hospital, 179, Great

Portland-street, W.—The following lectures will be given at this Hospital:—

July 10th, 4 P.M., Dr. David Walsh, "Some Diseases of Hair."
July 17th, 4 P.M., Dr. Tom Robinson, "Acne Rosacea."
July 24th, 4 P.M., Dr. Tom Robinson, "Lichen."

Qualified men and students of medicine invited on presentation of card.

---

## ROYAL COLLEGE OF SURGEONS IN IRELAND.

### CARMICHAEL PRIZE ESSAYS.

The late Richard Carmichael, Esq., having bequeathed to the College a sum of money for the purpose of founding Prizes for Essays upon certain subjects specified by him, the President and Council hereby give notice that, on the first Thurday in November in the year 1908 they will proceed to adjudge a prize of £120 for the best Essay that may be presented to them in accordance with the following instructions prescribed by Mr. Carmichael:—

1st.—"The state of the Medical Profession in its different departments of Physics Surgery and Pharmacy, in Great Britain and Ireland at the time of the writing of these Prize Essays."

2nd.—"The state of the Hospitals and Schools of Medicine, Surgery and Pharmacy."

3rd.—"The state and mode of examination. or of testing the qualifications of Candidates of the different Licensing Colleges or Corporations of Medicine, Surgery and Pharmacy."

Under these heads the authors will be pleased to make such suggestions as may occur to them respecting the improvement of the profession, with the view of rendering it more useful to the public, and a more respectable body than it is at present. In these suggestions the authors will be pleased to consider the preliminary and moral education of Medical and Surgical Students, as well as the mode of conducting their professional studies.

In considering the third head, or mode of testing the qualifications of candidates by the licensing bodies, the authors will please to consider the most practical mode of rendering the examination as demonstrative as possible—i.e., in Anatomy, by having the dead subject placed before the candidate; in Chemistry, Botany, and Pharmacy, specimens of minerals, plants, and pharmaceutical preparations placed before him; and in the practice of Physic and Surgery, the candidate to be placed before the patients in the wards of an hospital, as the testator is certain that this will afford the most certain and only true mode of ascertaining the qualifications of candidates.

Each Essay to be distinguished by a device or motto, and accompanied by a sealed packet, containing the name and address of the author, also distinguished by the same device or motto. The Essays are to be lodged at the College on or before the first day of July, 1908.

No Essay shall exceed 65,000 words in length, and all quotations and extracts from any published work, pamphlet, or paper shall be by reference merely to the volume and page on which the passage desired to be quoted is to be found.

The President and Council will not consider themselves bound to award the Prizes should any of the Essays not appear to them to possess sufficient merit.

(By order of the Council.)
JOHN BARTON, F.R.C.S., Secretary to the Council.
Dublin, June 19th, 1907.

---

## ROYAL NAVAL MEDICAL EXAMINATION.

Messrs. LARCOM & VEYSEY, Limited, 51 and 52, Queen-street, Portsmouth, **SPECIAL OUTFITTERS** for Medical Officers of the Royal Navy, would, **FREE OF CHARGE**, lend to intending Candidates copies of Examination Papers set during past years, and furnish particulars of outfit required and other useful information.

Messrs. L. & V. have, during recent years, entirely outfitted, or completed the outfits of, *CONSIDERABLY MORE SURGEONS JOINING THE ROYAL NAVY THAN ALL OTHER OUTFITTERS TOGETHER.* References to Naval Medical Officers of the highest rank, and also to HUNDREDS OF SURGEONS outfitted during over twenty years. *Messrs. L. & V.'s representatives visit all Naval Ports periodically and by appointment.*

---

## PATHOLOGICAL LABORATORIES,

94, Hallam Street, Portland Place, W.

**All Branches of CLINICAL RESEARCH undertaken for Medical Men.**

C. T. ANDREW, B.Sc., M.B.(Aberd.),
Telephone—3522 Mayfair. Late Carnegie Research Scholar.

---

## Central Midwives Board.

Notice is hereby given that Examinations will be held as under:—

London ... August 1st, 1907 / October 24th, 1907 / December 11th, 1907 — at the Examination Hall, Victoria Embankment, W.C.

Bristol (University College) ... ...
Manchester (Victoria University) ...
Newcastle-on-Tyne (Lying-in Hospital, New Bridge-street) ... ... ...
— October 24th, 1907.

The Oral Examination follows a few days later in each case.

Caxton House, Westminster. G. W. DUNCAN, Secretary.

---

## PROFESSIONAL PRELIMINARY EXAMINATIONS.

## The College of Preceptors holds

Examinations for Certificates recognised by the Board of Education, the Scotch Education Department, the Law Society, the General Medical Council, the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal College of Veterinary Surgeons, the Pharmaceutical Society of Great Britain, and other Bodies, four times a year—viz., in March, June, September, and December, in London and at Provincial Centres.

Regulations and Entry Forms may be obtained on application to the Secretary.

C. R. HODGSON, B.A., Secretary.
College of Preceptors, Bloomsbury-square, London, W.C.

---

## PATHOLOGICAL LABORATORIES,

14, Riding House-street, Langham-place, W.

**All Branches of CLINICAL RESEARCH undertaken for Medical Men.**

A. G. GRAY, M.B., Ch.B. Telephone—2366 Mayfair.
A. DEANE, M.B., Ch.B. Telegrams—"Pathlab, London."

---

## St. Mary's Hospital Medical School,

Paddington, W.
(University of London).

The **WINTER SESSION** will begin on October 1st.

The Medical School provides Courses of Instruction covering the **ENTIRE MEDICAL CURRICULUM** for the Degrees of the Universities and for the Diplomas of M R.C.S., L.R.C.P. All Courses are recognised by the University of London for Internal Students.

**SIX ENTRANCE SCHOLARSHIPS**, value £145 to £52 10s., competed for on September 23rd, 24th, and 25th.

Complete handbook on application to the Dean.

---

## St. Mary's Hospital Medical School.

### PRELIMINARY SCIENTIFIC COURSE.

A Complete Course of Instruction in Chemistry, Physics, and Biology under Recognised Teachers of the University of London will commence on October 2nd.

Time Table and particulars on application.

---

## Medical Graduates' College and

POLYCLINIC, 22, Chenies-street, Gower-street, London, W.C.

Medical Practitioners desirous of obtaining Post-Graduate instruction in any subject are invited to place themselves in communication with the undersigned, who will gladly and without fee advise them as to the best course to adopt.

A. E. HAYWARD PINCH, F.R.C.S., Medical Superintendent.

## Royal London Ophthalmic Hospital,
MOORFIELDS.

Gentlemen may enter to the practice of the ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, at any time, and are on certain conditions eligible for appointment as CLINICAL ASSISTANTS.

Courses of Instruction in the USE of the OPHTHALMOSCOPE, REFRACTION, EXTERNAL DISEASES, SURGICAL ANATOMY, PATHOLOGY, and OPERATIVE SURGERY commence in January, May, and October.

Classes in PRACTICAL PATHOLOGY are held at frequent intervals.

Fees for the Practice :—

| | |
|---|---|
| Perpetual ... ... ... | Five Guineas. |
| Six months ... ... ... | Three Guineas. |

Clinical work begins at 9 A.M. Operations are performed daily between 10 and 1.

For further particulars apply to Robert J. Bland, Secretary, Royal London Ophthalmic Hospital, City-road, E.C.

## WEST LONDON POST-GRADUATE COLLEGE.

WEST LONDON HOSPITAL, Hammersmith-road, W.—The Hospital Practice is reserved exclusively for Post-graduates, and a Reading- and Writing-room, in addition to a Lecture-room, is provided for them. The fee for one month's Hospital Practice is £2 2s. A Special Class in Bacteriology is held each month.

Prospectus will be sent on application to L. A. Bidwell, Dean.

## COOKE'S ANATOMICAL SCHOOL.

LICENSED UNDER THE ACT. OPEN ALL THE YEAR ROUND.

Long Vacation Classes—Anatomy, Physiology, Surgery, &c., taught rapidly and practically. Dissecting rooms open 10–5 daily. Good supply of subjects for dissection; already dissected parts, models, &c. Special M.B. and F.R.C.S. Classes. Operations arranged for any time.

Apply, Mr. Knight Handel-street, W.C.

## Triple Qualification, Edinburgh.—

Special preparation, in Class, Privately, and by Correspondence for these examinations. Also for Fellowship Examinations of Royal College of Surgeons, Edinburgh, and M.D. Brussels. Resident Pupils received.—Address, Class Rooms, 7, Chambers-street, Edinburgh.

## FELLOWSHIPS.

## The Special Class for the October

Examination of the Royal College of Surgeons, Edinburgh, will commence on Thursday, 15th August. A large part of the work can be done by correspondence, which may be commenced at once.—Particulars from Dr. Knight, 7, Chambers-street, Edinburgh.

## Medical Preliminaries. — London

MATRICULATION.—Classes for Prel. Sci., Inter. Arts, B A., and B.Sc. All Medical Preliminaries, Durham, Oxford, Cambridge, and other Examinations, Scholarships. Classes (small) can be commenced at any time. Private Tuition. Vacation Tuition.—Full prospectus on application to R. C. B. Kerin, B.A. Lond., First First-Class Hons. in Classics, Carlyon College, 55, Chancery-lane.

SUCCESSES.—London Univ.. 1892-1907, 415; Medical Prelim., 240; Previous and Responsions, 60; other successes, 380.

London Hosp. School. (3) and Charing Cross (1st) Arts School.

## STAMMERING

Permanently CURED by Personal Tuition ONLY

Pupils Taken in Residence.

Interview on written application to Mr. A. C. SCHNELLE, 119 Bedford Court Mansions, London, W.C.

## STAMMERING

And all Speech Defects treated by MRS. EMIL BEHNKE, at 18, Earl's Court-square, S.W.

Also VOICE TRAINING for SPEAKERS and SINGERS.

"Pre-eminent success."—Times.

"I have confidence in advising speech sufferers to place themselves under the instruction of Mrs. Behnke."—Editor, Medical Times.

"Thanks to your instruction, my voice now fills the church with perfect ease."—A Pupil.

"Mrs. Behnke was chosen from high recommendations and very thoroughly has she proved worthy of them."—Dr. Nicholls (letter on "Stuttering." British Medical Journal).

"Mrs. Behnke is well known as a most excellent teacher upon thoroughly philosophical principles."—The Lancet.

"Mrs. Behnke has recently treated with success some difficult cases of stammering in Guy's. The method is scientifically correct and perfectly effective for those who are determined to conquer the defect."—Guy's Hospital Gazette.

"Mrs. Behnke's work is of the most scientific description."—The Medical Magazine

"STAMMERING": Its Nature and Treatment, post free, 1s.

## MEDICAL DIPLOMA CORRESPONDENCE INSTITUTION, 115, GOWER STREET, W.C.

Principal - - - - - Mr. E. GOOCH, B.Sc., &c.

**18** Tutors (Gold Medallists and 1st Class Honours).

Coaching BY POST, in CLASS, or PRIVATELY, for ALL MEDICAL EXAMS., including D.P.H.

Laboratory with every requisite. *PARTICULARS of SUCCESSES on application; but any Candidate's wish for privacy is always respected.*

## 1237

SUCCESSES in 15 years.

*RECENT REMARKABLE SUCCESSES:*

**D.P.H.** (this year) **11**
LONDON 3 sent up.
CAMBR.: 3 " "
DUBLIN: 3 " "
DURHAM: 1 " "
VICTORIA: 1 " "
**ALL PASSED** (2 of the Dublin Candidates with HONOURS)

(**125** Successes for D.P.H. during past 5 years.)

**M.D.** (Durh. 15 years') APRIL, 1907. **4** sent up—**ALL PASSED.**

(**44** Successes in **5** Years.)

**M.D.** Brux.—**ALL** sent up this year **(6)** SUCCESSFUL—4 with **HONOURS.**

**I.M.S., R.A.M.C., R.N.,** and PROMOTION. **19** Successes in 2 years

**F.R.C.S.** (Eng., Edin., Ireland). **15** Recent Successes.

Numerous Successes also for M.D. Lond., M D R.U.I., M.S. Lond., M.R.C.P., M.B., &c. (Cambr., Durh., &c.), Conjoint Finals, Primary F.R.C.S., L S A., and Anatomy, Physiology, and Pharmacology (various Exams.). Particulars on application.

CORRESPONDENCE COURSES can be commenced at any time.

## ORAL COACHING

now proceeding for SERVICES, CONJOINT, M.D.Durh., D.P.H., &c.
For further particulars address E GOOCH, B.Sc., 115, Gower St., W.C.
(Or for interviews, usually 12-1 or 4-5; or by appointment.)

## UNIVERSITY EXAMINATION POSTAL INSTITUTION.

Offices—27, SOUTHAMPTON ST., STRAND, LONDON, W.C.
Telegrams: "Unipolar, London."

Manager—Mr. E. S. WEYMOUTH, M.A. (Lond.).
Telephone: 6313 Central.

Postal or Oral preparation for all Medical Exams. *14 Medical Tutors, including 8 Gold Medallists.*

RECENT SUCCESSES.

**M.D.** (Lond.), 1901-6: **97,** including 4 Gold Medallists; **18** out of **19** successful during 1906.

**M.S.** (Lond.): Gold Medallists 1902, 1903, 1904. *Also Private Tuition for Medical Preliminary.*

INTER. **M.B.** (Lond.): **16.** **M.B., B.S.,** May and October, 1906, **14.** May, 1907, **7.**

**D.P.H.** (various) during 1906-7, **18.** **M.D.** Durham (for Practitioners): 1900-7: **23.**

**F.R.C.S.** (Eng., Edin., Ireland): **12.** Primary Fellowship (Eng.), May, 1906, Examination: **5** out of **6** sent in

**R.A.M.C.** Entrance: Top Candidate, July, 1905; 4th and 5th July, 1906. Promotion 1906-7, all **9** successful.

**I.M.S.**, **M.B.**, **B.S.**(Cantab. &c.), **R.N.**, CONJOINT, **M.R.C.P.**, **M.D.**(R.U.I.), and other successes.

ORAL TUITION in ANY SUBJECT. ORAL CLASSES for M.B., B.S., Primary Fellowship, D.P.H., &c.

## DEFECTS OF SPEECH.

**Mr. WILLIAM VAN PRAAGH'S** System for the Treatment and Cure of all Defects of Speech, both ACQUIRED and CONGENITAL.
Consultations by appointment, 11, Fitzroy-square, London, W.

## M.D. THESIS (CAMBR., EDIN., &c.)

**SKILLED COACHING, GUIDANCE, and ADVICE,** from Specialist Tutors, in conformity with the Regulations of the various Universities.

**10** out of 11 recently successful.
Particulars on application.

**M.B., B.S. (LOND.),** May, 1907. **6** sent up; ALL PASSED.

**D.P.H. (LOND.), JULY, 1907.**

**PRACTICAL AND THEORETICAL COACHING** always in progress (in Bacteriology, Chemistry, and all the other subjects of both Parts). Special attention to Candidates' weak points.

Address—**E. GOOCH**, B.Sc., 115, Gower St., W.C.

---

## Prudential Assurance Company,

LIMITED, HOLBORN BARS, LONDON.
Founded 1848.
Invested funds, £[illegible]5,000,000.

---

## Reversions and Life Interests in

Landed or Funded Property or other Securities and Annuities PURCHASED or LOANS granted thereon by the EQUITABLE REVERSIONARY INTEREST SOCIETY, Limited, 10, Lancaster-place, Waterloo Bridge, Strand.
Established 1835. Capital (paid up) £500,000.

---

## BIRKBECK BANK

*Established 1851.*
SOUTHAMPTON BUILDINGS, HIGH HOLBORN, W.C.

**2½** PER CENT INTEREST allowed on Deposit Accounts.

**2** PER CENT INTEREST on Drawing Accounts with Cheque Book.

All general Banking Business transacted. ALMANACK, with full particulars, POST FREE.
C. F. RAVENSCROFT, Secretary.

---

## General Life Assurance Company.

Established 1837. LIFE MORTGAGES, ANNUITIES.
CHIEF OFFICE—103, CANNON STREET, LONDON, E.C.
**Capital and Reserves—£3,000,000.**

Advances made on Reversions, vested or contingent, and Life Interest, and on Personal Security in connexion with a Life Policy.
JOHN R. FREEMAN, Manager and Secretary.

---

DIVISION OF PROFITS, 20th NOVEMBER, 1907.
*All with Profit Assurances previously effected, and then in force, will participate.*

## NATIONAL PROVIDENT INSTITUTION FOR MUTUAL LIFE ASSURANCE.

*ESTD. 1835.*
ASSURANCE AND INVESTMENT.
WRITE FOR LEAFLET ON
NET COST OF ENDOWMENT ASSURANCES.
48, GRACECHURCH STREET, LONDON, E.C.

---

## New Zealand, Tasmania, Cape

TOWN, TENERIFFE, by the NEW ZEALAND SHIPPING COMPANY'S Royal Mail Steamers. Next departures from London (Plymouth two days later).

July 11, Turakina (tw. sc.), 10,960. | Aug. 8, Ruapehu, (tw. sc.) 9880.
Low fares, single and return. Superior accommodation.
Apply to Gray, Dawes & Co., Craven House, Northumberland-avenue, or to J. B. Westray & Co., 138, Leadenhall-street, E.C.

---

## R.M.S.P.—The Royal Mail Steam

PACKET COMPANY,
LUXURIOUS TRAVEL.
BRAZIL, £50. ARGENTINA, £62. WEST INDIES, £38.
Short Trips to
SPAIN, £9 15s. PORTUGAL, £12.
Apply to 18, Moorgate-street, E.C., or 32, Cockspur-street, S.W.

---

## PORTUGAL

TOURS AND CRUISES EVERY 10 DAYS.
14 DAYS £12, 23 DAYS £16 TO £20.
BY BOOTH LINE ROYAL MAIL STEAMERS.
All expenses included, except Gratuities.
LANFRANC (6400 tons, twin-screw, L'pool, 9th, London, 12th July.
**BOOTH LINE,** 8, Adelphi Terrace, Strand, London. 30, James Street, Liverpool.

---

## NORWAY PLEASURE CRUISES.

13 DAYS FROM £12 12s.

"MIDNIGHT SUN." Two Berth Cabins. Luxurious Accommodation. Sailing June 8th, 22nd; July 6th, 20th; Aug. 3rd, 17th. Visiting Sand, Odde, Bergen, Fretheim, Gudvangen, Loen, Marok, Næss, and Molde, Apply, ALBION S.S. CO., Ltd., Newcastle-on-Tyne.

---

## HOLIDAYS IN THE AUSTRIAN TYROL

BY THE
**British Royal Mail Route,**
VIA
HARWICH
AND THE
HOOK OF HOLLAND.
*Corridor Vestibuled Trains.*

Send post-card to the Continental Manager, G.E.R., Liverpool St. Station, London, E.C., for descriptive illustrated pamphlet (free).

---

## St. John's House.—Trained and

Experienced Medical, Surgical, Monthly NURSES and MASSEUSES can be obtained by application, personally or by letter, to the Sister Superior, 12, Queen-square, Bloomsbury. Telephone No. 5099 Central (P.O.). Telegraphic Address: "Private Nurses, London.

---

## Middlesex Hospital Trained Nurses

INSTITUTE.—Experienced NURSES can be immediately obtained for Medical and Surgical Cases from the Sister in Charge, No. 17, Cleveland-street, W. Telegraphic address: Skilful, London. Telephone Number: 5307 Gerrard.

---

## National Hospital Male Nurses'

ASSOCIATION.—Fully trained MALE NURSES supplied at the shortest notice. All nurses hold the two years' certificate of training at the National Hospital for the Paralysed and Epileptic. Skilled Masseurs supplied. Apply to the Lady Superintendent, National Hospital, Queen-square, W.C. Telephone 4594 Central.

---

## The Hospital for Sick Children,

Great Ormond-street, W.C.—TRAINED NURSES can be had on application to the Matron. Telegraphic address, "Great," London. Telephone, No. 351 Holborn.

---

## Queen Charlotte's Lying-in Hospital

and MIDWIFERY TRAINING SCHOOL, Marylebone, N.W.—MEDICAL PUPILS admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing obstetrical complications and operative midwifery, upwards of three-fourths of the total admissions being primiparous cases.

CERTIFICATES AWARDED as required by the various Examining Bodies.

PUPILS TRAINED for MIDWIVES and MONTHLY NURSES. On being found competent each pupil is awarded a certificate of efficiency. Special preparation for examination of Central Midwives Board.

For rules, fees, &c., apply ARTHUR WATTS, Secretary.

---

## LEEDS TRAINED NURSES' INSTITUTION,

FOR TRAINED NURSES, MEDICAL, SURGICAL, MONTHLY AND MASSEUSES.

Apply to the Superintendent, 21, Hyde-terrace, Leeds.
Telegraphic Address—"Expert, Leeds." Telephone 177.

---

## The Registered Nurses' Society

(THE FIRST CO-OPERATION OF CHARTERED NURSES),
431, OXFORD STREET, W.
Teleg. address—"Soror, London." Teleph. No. 1712 (Gerrard Exchange).

A Co-operation of Private Nurses who have passed through THREE YEARS' HOSPITAL TRAINING, and have been registered after the most careful investigation of their credentials.

---

## THE NURSES' COÖPERATION.

8, NEW CAVENDISH STREET, PORTLAND PLACE, W.
Founded 1891. Incorporated 1894.
Established to secure to Nurses the full remuneration for their work.

FULLY TRAINED HOSPITAL
Medical,
Surgical,
Mental,
Maternity,
Fever,
Children's,
Massage,
} NURSES

Supplied any time, day or night. Telegraphic address: "Aprons, London." Telephone, 2724 Gerrard.
Mrs. LUCAS, Lady Supt.

# MALE AND FEMALE NURSES' ASSOCIATION

94, GEORGE STREET, PORTMAN SQUARE, W.

Hospital-trained Male and Female Nurses supplied immediately for Mental, Medical, Surgical, Dipsomania, Travelling, Maternity, and Fever Cases. Fees from £1 11s. 6d to £2 12s. 6d. per week. All our Nurses receive their own fees. Also Certificated Masseurs and Masseuses supplied. Male Nurses reside on the premises always prepared for urgent cases.

Telegrams: "DESIDERATUM, LONDON." Telephone: 2330 PADDINGTON. Apply, Secretary or Lady Superintendent

---

# MALE NURSES' (TEMPERANCE) CO-OPERATION

Incorporated under the Companies Acts, 1862 to 1900. LIMITED.

**ONLY ADDRESSES**
LONDON, W.: 10, THAYER STREET MANCHESTER SQUARE
MANCHESTER: 235, BRUNSWICK STREET (Facing Owens College).
EDINBURGH: 7, TORPICHEN STREET.

Superior Trained **MALE NURSES** for Medical, Surgical, Mental, Dipsomania, Fever and Travelling Cases supplied at a moment's notice, Day or Night. Skilled **MASSEURS** Supplied. Terms £1 11s. 6d. to £2 2s. and upwards. Nurses to receive their own fees. **F. ROUSE WALSHE, Secretary.**

**TELEPHONE**
(LONDON)—538 PADDINGTON.
(MANCHESTER)—4699 CENTRAL.
(EDINBURGH)—2715 CENTRAL.

**TELEGRAMS**
"ASSUAGED, LONDON."
"ASSUAGED, MANCHESTER."
"ASSUAGED, EDINBURGH."

---

# TEMPERANCE MALE NURSES' CO-OPERATION,

LIMITED.

**LONDON: 43, NEW CAVENDISH STREET, W.** (late Gt. Marylebone Street).
**MANCHESTER: 176, OXFORD ROAD.**
**EDINBURGH: 9, LEAMINGTON TERRACE.**

*Incorporated under the Industrial and Provident Societies Act, 1893. (Regd. No. 685.)*

Highly-trained Male Nurses supplied for Medical, Mental, Surgical, Catheter, Dipsomania, Travelling, and all cases. Nurses reside on the premises and are always ready for urgent call day and night. Skilled Masseurs and good Valet Attendants supplied. Terms from £1 11s. 6d.

Telephone Nos.—
London, 1472 Paddington.
Manchester, 5213 Central.
Edinburgh, 399 Y Central.

Telegrams—
"Tactear, London."
"Tactear, Manchester."
"Surgical, Edinburgh."

M. D. GOLD, *Sec.*

---

# MALE NURSES' ASSOCIATION

23, YORK PLACE,
BAKER STREET, W.

[*Registered.*

Well trained MALE NURSES, and Certificated MASSEURS, supplied at shortest notice day or night.

W. GUTTERIDGE, *Superintendent.*

Telegrams: "Assistiamo, London."
Telephone: 2437 Paddington.

---

# THE LONDON ASSOCIATION OF NURSES,

LIMITED.

## 123, NEW BOND STREET, W.

(Between Brook Street and Grosvenor Street.)

Hospital Trained **Nurses**, experienced in Private Nursing, can be obtained immediately for **Medical, Surgical, Maternity, Mental, Massage, Fever,** and all **Infectious Cases.** Also **Male Nurses** and **Medical Rubbers.**

Great care is taken in the selection of Maternity Nurses who reside in a separate home, and usually devote themselves entirely to that special branch of the work.

Apply, LADY SUPERINTENDENT.

TELEGRAPHIC ADDRESS— "Firth's Association. London."
TELEPHONE— 1855 Gerrard

---

# MALE AND FEMALE NURSES' CO-OPERATION.

45, BEAUMONT STREET,
PORTLAND PL., W.

NURSES OBTAINABLE DAY OR NIGHT.

Apply Secretary.

TELEGRAMS: "Abstain, London."

TELEPHONE. 606 Paddington.

---

# GENERAL NURSING ASSOCIATION.

5, Mandeville Place,
Manchester Square

ESTABLISHED 1862 at Henrietta-street, Covent-garden.

Thoroughly experienced Hospital-trained NURSES supplied at a moment's notice, being resident in the Home.

Also, specially-trained NURSES for Mental and Nerve Cases.

Worked under the system of Co-operation.

Apply to the SUPERINTENDENT.

Telegrams: "Nutrix, London." Telephone, 55 Paddington.

---

# THE INCORPORATED SOCIETY OF TRAINED MASSEUSES,

12, BUCKINGHAM STREET, STRAND, W.C.,

Supplies Competent MASSEUSES holding Society's certificate.
List of qualified teachers on application.

TELEGRAMS: "FREGARE." TELEPHONE: CENTRAL, 7723.

---

# WHITE HALL. NURSING HOME.

ONE OF THE BEST IN ENGLAND.

HIGHLY RECOMMENDED BY THE MEDICAL PROFESSION.

All kinds of cases taken except Infectious. A very healthy situation, 400 feet above sea level. Extensive grounds. Terms from 2 guineas.

Apply, Medical Director or Matron, White Hall, South Norwood Hill, S.E.

---

# HASLEMERE NURSING HOME,

COURTSFOLD, HASLEMERE, SURREY.

Weir-Mitchell, Rest Cure or General Nursing, Massage, Electricity.
Home comforts. Large garden.
Trained Nurses and Masseuses.
Superintendents, Misses RINGWOOD and INGE.

---

# DIFFICULT or BACKWARD GIRLS

of the Upper Classes, unsuited for an ordinary school and requiring Special Management and Educational Conditions under Medical Supervision, received at

**CONIFERS, HAMPTON WICK.**

For particulars apply to the Principal.

# BAILBROOK HOUSE, BATH.

There are one or two Vacancies in this first-class Private Asylum. The Institution stands on an elevated site on the outskirts of Bath and has twenty-seven acres of park and grounds.

Terms from 3 to 8 guineas a week.

Apply to the Medical Superintendent.

---

# CAMBERWELL HOUSE.

33, PECKHAM ROAD, LONDON, S.E.

Telephone No., Hop 1037. Telegrams, "PSYCHOLIA, LONDON."

**For the Care and Treatment of those of both Sexes suffering from Nervous and Mental Disorders.**

Consists of separate Houses, lit by electricity and completely modernised, standing in twenty acres of picturesque grounds, including cricket and football field, tennis courts and croquet lawns. The Terrace Houses are quite separate from the rest of the Institution, and are specially adapted for the reception of mild and borderland cases, who can enter voluntarily.

The ordinary terms are 2 guineas a week. Patients can have separate sitting- and bed-rooms, with a special nurse, as well as the use of the general rooms, and a change to the seaside annexe at Walton-on-the-Naze.

For further particulars apply to the MEDICAL SUPERINTENDENT at the above address.

---

# HEIGHAM HALL, NORWICH.

Telephone *For the Upper Classes only.* 80 Norwich.

A Home for Ladies and Gentlemen suffering from **Nervous and Mental Ailments.** Extensive pleasure grounds. **Private Suites of Rooms** with special Attendants available. **Boarders** taken without certificates. **Wire for Certificates and Admission Papers. Nurses sent for Patients.**

J. G. GORDON-MUNN, M.D., F.R.S.E., Proprietor and Res. Phys.

---

*Telephone*— 5608 CENTRAL. *Telegraphic Address*— "ENVOY, LONDON."

# ST. LUKE'S HOSPITAL FOR MENTAL DISEASES (200 Beds),

OLD STREET, LONDON.

(ESTABLISHED 1751.)

*For the treatment of Mental Diseases. Admission gratuitous; or, by contribution to maintenance, from 15s. to 30s. per week.*

**CONVALESCENT HOME** at Ramsgate. Voluntary Boarders (Ladies) are received at the Home without certificates.

**TRAINED NURSES** immediately obtained from the Hospital for Mental and Nervous Cases.

Full particulars on application to the Secretary at the Hospital.

---

# FAIRFORD RETREAT,

GLOUCESTERSHIRE.

(ESTABLISHED 1822.)

A Licensed country HOME for the care and treatment of Ladies and Gentlemen Mentally Afflicted. Pleasantly situated with extensive grounds on the verge of the Cotswold Hills. Special accommodation provided.

**Billiards, Carriage Exercise, Tennis, Cricket, Fishing, Bowling Green, and Croquet. Voluntary Boarders are received without certificate.** Terms moderate.

Telegrams: "Turner, Fairford."

Full particulars from Dr. A. C. KING-TURNER, Proprietor.

---

# EPILEPSY.

The David Lewis Colony, recently erected solely for the benefit of sane epileptics, stands in its own grounds of 113 acres, is situated at Warford in a beautiful part of Cheshire, two and a half miles from Alderley Edge Station, and fourteen miles from Manchester. Electric light throughout. Perfect sanitation.

The Colony system ensures for epileptics the social life and employment best suited to their needs.

Terms, for middle and upper class patients, from 30s. a week upwards, according to accommodation and requirements.

For further information apply to the Director, Dr. McDougall, Warford, near Alderley Edge, Cheshire.

---

# EPILEPSY—TO MEDICAL ADVISERS.

A few Vacancies in a modern house at Maghull, Lancashire, specially erected and equipped for the Treatment of Gentlemen suffering from Epilepsy. Experienced Medical and Nursing treatment. Billiards, lawn tennis, cricket, bowls, &c.

Apply, W. GRISEWOOD, 2, Exchange-street East, Liverpool.

---

# THE RETREAT, YORK.

**A Registered Hospital for the Treatment of Mental Diseases.**

*Established 1792.*

Under the management of a Committee of Members of the Society of Friends. Situated about two miles from York Station. The Patients are derived from the Upper and Middle Classes, and none are paupers or rate-aided. Terms from 48s. weekly.

Voluntary Boarders are received on their own application. Nurses who have been trained at least three years are available for private nursing.

For further particulars as to the resources of the Institution and information respecting the admission of patients see the Annual Report, which will be sent on application to the Medical Superintendent, BEDFORD PIERCE, M.D., F.R.C.P. (Lond.). Nat. Tel.: 112 York.

---

# THROXENBY HALL, NEAR SCARBOROUGH.

A Branch House connected with The Retreat, York, situated near the Raincliffe Woods, about two miles from Scarborough for the reception of Convalescent Patients, also for the treatment of persons suffering from Incipient or Mild Forms of Mental Disorder who cannot be certified as of unsound mind, and who wish voluntarily to place themselves under skilled treatment.—For further particulars apply to the Matron, or to Dr. BEDFORD PIERCE at The Retreat, York. Nat. Tel.: 282 Scarborough.

---

THE

# LONDON FEVER HOSPITAL,

ISLINGTON, N.

PATRON—His Majesty THE KING.

PRESIDENT—The Right Hon. Lord BALFOUR of BURLEIGH, K.T.

The Diseases admitted are Scarlet Fever, Diphtheria, Measles, and German Measles; also Typhoid when accommodation can be made available. The general ward fee is three guineas for the whole time of treatment. Private rooms three guineas a week. Patients who are willing to pay a part at least of the cost of their illness rather than remain at home in infectious fever are encouraged to apply for admission here. No help is received from the rates by this Hospital.

Servants of Governors are treated free of charge. On application to the Secretary, with a medical certificate, a brougham ambulance will be sent. Applications can be made personally, or by letter, telegram, or telephone: 687 North. W. CHRISTIE, Secretary.

---

SMEDLEY'S

# HYDROPATHIC ESTABLISHMENT

**MATLOCK.** Established 1853.

Telegrams: "SMEDLEY'S, MATLOCK BANK."

Physicians: G. C. R. Harbinson, M.B., B.Ch., and Resident.

A complete suite of Baths, including separate Turkish and Russian Baths for Ladies and for Gentlemen, Aix Douches, and an Electric Installation for Baths and Medical purposes. Dowsing Radiant Heat. D'Arsonval High Frequency. Roentgen X Rays. Fango Mud Treatment. Nauheim Baths. Special provision for Invalids. Large Winter Garden. American Elevator. Electric Light. Night attendance. Rooms well ventilated, and all bedrooms warmed in winter throughout the establishment.

MASSAGE AND WEIR-MITCHELL METHODS OF TREATMENT.

A large staff (upwards of 50) of Trained Male and Female Nurses, Masseurs, and Attendants. Prospectus and full information on application to H. CHALLAND, Manager.

---

ILFRACOMBE.

# THE CLIFFE HYDRO.

***An Ideal Winter Residence.***

Most equable climate in England. Complete installation of Light Baths, High Frequency, &c., for the treatment of Gout, Neuritis, Rheumatism, &c. Under personal supervision of CHARLES TOLLER, M.D. *Special Winter Terms.* Apply Secretary. Nat. Telephone 42

---

# NORTON PARKS

## Near DARTMOUTH, SOUTH DEVON.

A Summer Residence on the Devon Hills for the Treatment of Pulmonary Weakness in its **First Inception,** or when showing **premonitory signs,** and for Malnutrition, Debility, and Anæmia. 500 feet above the sea. Two and a half miles from Dartmouth. Extensive ornamental grounds; level walks; tree shelter (Cypress Insignis and Beech) **Ideal Situation for Health.** Invigorating temperate climate, exempt from the excessive heats of summer time. Pure air free from dust. Private Country Mansion, limited to twelve patients.

Terms: Four to seven guineas a week. No advanced nor infectious cases are received.

Address, Dr. TUCKER WISE, Norton Parks (May to October). Montreux, Switzerland (November to April).

TREATMENT OF INEBRIETY.

## NORTHLANDS RETREAT,

10-12, FAIRFIELD STREET, WANDSWORTH, S.W.

Private Licensed Home for Ladies. Patients receive every care and attention. No undue restrictions. Excellent medical references.

Licensees: JOHN ROUND, L.R.C.P. & S., and the MISSES ROUND.

---

## FLOWER HOUSE,

CATFORD, S.E.

A Sanatorium of the highest class for the Treatment and Care of Gentlemen of Unsound Mind.

N.B.—Under the new Act voluntary boarders can be received on their own personal application.

Apply to the Medical Superintendent.

---

## INEBRIETY.

ALCOHOL AND DRUG ABUSE.

DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of Gentlemen under the Act and privately. Terms 2 to 4 guineas weekly. *President of Council:* Sir Charles Cameron, Bart. *Chairman of Committee of Management:* The Rev. Canon Duckworth, D.D.—Apply to F. S. D. HOGG, M.R.C.S., &c., Medical Superintendent. Telephone—P.O. 16, Rickmansworth.

---

## INEBRIETY. CONVALESCENCE. REST.

WEIR HALL RETREAT & SANATORIUM, Edmonton, London, N.

For the Treatment of Ladies & Gentlemen. Drug excess studied specially, and a cure guaranteed without suffering. Alcoholic craving removed at once, and patients subsequently cured with little restraint. Billiards; boating; swimming bath; fishing, &c., &c.—Apply to Manager for Prospectus.

---

## INEBRIETY & DRUG HABIT.

*Average Period of Residence*—FOUR WEEKS.

THE

## DADSON NURSING HOMES

For the Treatment of Patients suffering from Inebriety and the Abuse of Drugs, &c.

"The advantages claimed for the Homes is that treatment will be carried out under medical supervision by persons who have had special experience in managing inebriates."
—*British Medical Journal*, January 27th, 1906, p. 223.

HIGHLY SATISFACTORY RESULTS.

### KENSINGTON, W.

Medical Men supervise and direct the treatment of their own patients (ladies or gentlemen) at this strictly Private Residential Nursing Home.

### TWICKENHAM: HIGH SHOT HOUSE.

Telephone: 523, P.O. Richmond.

Private patients (ladies and gentlemen) received. Also gentlemen under the Acts. Medical Superintendents—M. H. GARDINER, Esq., M.B., and E. LE F. PAYNE, Esq., M.R.C.S.

### NORWICH: (under a Local Committee).

For Working Class Men suffering from Inebriety.

Medical Superintendent—J. M. G. BREMNER, Esq., M.B.

### RICHMOND: (under a Local Committee).

For Working Class Women suffering from Inebriety.

Full Particulars, Medical Opinions, and References can be obtained from the offices of the DADSON NURSING HOMES, Ltd., No. 1, Mitre Court, Temple, E.C.

*Telephone: 5233 Holborn.* *Telegrams:* "*Dadsonia, London.*"

---

## FOR THE TREATMENT OF INEBRIETY.

### THE LODGE, CARNOUSTIE N.B.

ESTABLISHED 1900.

The Lodge is situated on the East Coast of Scotland, on the main line to the North, where the climate is dry and very bracing. Golfing, fishing, cycling, tennis, billiards, bowling, &c.

For particulars, apply Secretary, The Lodge, Carnoustie, N.B. *Telegraphic Address:* The Lodge, Carnoustie. *Telephone Number 48.*

---

## ASHWOOD HOUSE, KINGSWINFORD, STAFFORDSHIRE.

An old-established and modernised Institution for the Medical Treatment of Ladies and Gentlemen mentally afflicted.

The House, pleasantly situated, stands in picturesque grounds of forty acres in extent, with a surrounding country noted for the beauty of its walks and drives. The climate is genial and bracing. Occupation, in-door and out-door amusements, and carriage and other exercise amply provided.

Terms range from 3 to 7 guineas per week, inclusive, according to requirements as to accommodation, special attendance, &c.

Railway Stations: Stourbridge Junction (G.W.R.), 3½ miles; Dudley (L. & N.W.R.), 4 miles; Wolverhampton (G.W.R. or L. & N.W.R.), 7 miles. Intending visitors can be met at any of these stations.

For further particulars apply to the Medical Superintendent.

---

## CHEADLE ROYAL.

### HOSPITAL FOR MENTAL DISEASES,

CHEADLE, CHESHIRE.

This Institution is situated nine miles from Manchester and two miles from Cheadle and Cheadle Hulme Stations, L. & N.W. Ry. It includes several detached villas and cottages within the grounds (100 acres), as well as the three principal buildings, and has dependencies in Wales.

Rates of payment from 31s. 6d. a week, according to requirements.

Voluntary Boarders are admitted on similar terms.

Arrangements are made when desired for patients to have private rooms and their own attendants, horses, and carriages.

For further information apply to the Medical Superintendent, W. SCOWCROFT, M.R.C.S., &c., at Cheadle, or he may be seen at 72, Bridge-street, Manchester, on Tuesdays, from 12 to 3.

---

## COURT HALL, KENTON,

EXETER, SOUTH DEVON.

PRIVATE HOME for LADIES suffering from MENTAL DISEASES.

Certified Patients or Voluntary Boarders. Established in 1869 and limited to eight Patients.

For terms and full particulars, address, Miss MULES, M.B., B.S. Proprietress and Resident Licensee.

---

## THE WARNEFORD, OXFORD.

### A HOSPITAL FOR MENTAL DISORDERS.

President: The Right Hon THE EARL OF JERSEY.

This Registered Hospital, for the Treatment and Care, at moderate charges, of Mental Patients belonging to the educated classes, stands in a healthy and pleasant situation on Headington Hill, near Oxford. The grounds and gardens are extensive, and the internal appointments are comfortable and refined. The utmost degree of liberty, consistent with safety, is allowed to the patients, and amusements and occupation are amply provided. Parties are sent for change, to the seaside during summer. Voluntary boarders are also received for treatment.—For further particulars apply to the Medical Superintendent, Dr. NEIL.

---

## MIDDLETON HALL,

MIDDLETON ST. GEORGE, near DARLINGTON

CO. DURHAM.

PRIVATE HOUSE FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN SUFFERING FROM MENTAL DISEASES.

This House, which is situated in a healthy and pleasant country, has been recently erected from plans approved by the Commissioners in Lunacy and has been comfortably furnished throughout. Private rooms and special attendants are provided if required

Terms to be had on application to L. HARRIS LISTON, M.D., Medical Superintendent.

---

## MENTAL and NERVOUS INVALIDS

of BOTH SEXES

are received into essentially home-like conditions for treatment, under experienced Physicians and Nurses, at

### MALLING PLACE, WEST MALLING, KENT

which is easy of access from London by road or rail, and in the favourite vicinity of Sevenoaks, Tunbridge Wells, Maidstone, and Rochester. It is also easy of access by road or rail from the South Coast towns of Kent and Sussex.

Limited numbers only are received, and this admits of the important element of individual care being given full scope to, and exercised by its strong and experienced Resident and Consulting Staff from the London Hospitals.

Malling Place stands in its own well-wooded grounds, and is beautifully situated in one of the most picturesque and healthy localities in the Garden of England. It combines cheerfulness with retirement, and is warmed throughout by hot water radiators.

It has recently been entirely reconstructed and remodelled upon the most modern systems for treatment—light, air, and cheerfulness in the surroundings being the essential elements throughout. There are also arrangements for the full exercise of Open-Air Treatment when this is indicated. Patients may be visited by their own medical man, who is always welcome.

Full particulars on application to Resident Physicians, either at Malling or at 26, Harley-street, London, W., where one of them may be seen daily.

Telegrams: "Adam, West Malling." Telephone: No. 2 Malling.

## PLYMPTON HOUSE,

PLYMPTON, S. DEVON.

**Proprietors—Drs. ALDRIDGE & TURNER.**

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of Mental Cases.
For terms, &c., apply to the Resident Physician.
Telephone—No. 2, Plympton. Dr. ALFRED TURNER.

## THE COPPICE, NOTTINGHAM.
## HOSPITAL FOR MENTAL DISEASES.

President: The Right Hon. the Earl MANVERS.

This Institution is exclusively for the reception of a limited number of PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country; and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted.
For terms, &c., apply to Dr. TATE, Medical Superintendent.

## Private Home for the Treatment of

INSANE LADIES,
ASHBROOK HALL, HOLLINGTON,

within half an hour's walk of St. Leonards-on-Sea, conducted by the Widow of the late Samuel Hitch, M.D., formerly of Sandywell Park, near Cheltenham, for many years Physician to the General Lunatic Asylum for the County of Gloucester.
Station: Warrior-square, St. Leonards. Telegraph Office: Hollington.
For particulars and terms apply to
Mrs. LETITIA A. HITCH or Miss ADAMS, Co-Licensee.

## WONFORD HOUSE,
## HOSPITAL FOR THE INSANE, near EXETER

A REGISTERED HOSPITAL FOR THE UPPER AND MIDDLE CLASSES.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter.

There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea air and a mild salubrious climate.

Private Rooms and Special Attendants provided, if required.

Voluntary Patients or Boarders also received without certificates.

For terms, &c., apply to
P. MAURY DEAS, M.B., M.S. Lond.,
Resident Medical Superintendent.

## THE MOAT HOUSE,

TAMWORTH, STAFFORDSHIRE.

A HOME for NERVOUS and MENTAL CASES. Stations L. & N. West. and Mid. Railways.

The House stands in grounds of ten acres (within 5 minutes' drive of either station) and is devoted to the care and treatment of a few Ladies suffering from Nervous and Mental Affections, who enjoy the comfort, privacy, and occupations of home life. Voluntary patients are received without certificates. For terms, &c., apply to the Resident Proprietor, E. HOLLINS, M.A.Camb., J.P.

## Barnwood House Hospital for

MENTAL DISEASES, Barnwood, near Gloucester. Exclusively for Private Patients of the Upper and Middle Classes. This institution is devoted to the Care and Treatment of persons of both sexes at moderate rates of payment. The terms vary according to the requirements of the patients, who can have private rooms and special attendants, or be accommodated in Detached Villas and in the Branch Convalescent Establishment on the hills. Under special circumstances the rates of payments may be greatly reduced by the Committee.—For further information apply to J. G. Soutar, M.B., the Med. Supt.

## STRETTON HOUSE,

Church-Stretton, Shropshire.

A Private HOME for the treatment of Gentlemen suffering from Mental Diseases. Bracing hill country. See "Medical Directory," p. 1953. Apply to Medical Superintendent. Telephone: 10, P.O. Church-Stretton.

## SPRINGFIELD HOUSE
### near BEDFORD.

(Telephone No. 17.)

**A PRIVATE ASYLUM for Mental Cases,** established in 1837, surrounded by extensive grounds, reconstructed and modernised.

***Terms from 3 guineas per week***

(including Separate Bedrooms for all Suitable Cases).

For forms of admission, &c., apply to DAVID BOWER, M.D., as above, or at 5, Duchess-st., Portland-pl., W., Tuesdays, from 4 to 5.

*Vacancies: For Ladies, One. For Gentlemen, One.*

## *WYKE HOUSE,*
### ISLEWORTH, MIDDLESEX.

A Private Asylum for Ladies and Gentlemen mentally afflicted. Voluntary Boarders are received. The grounds are very extensive and various amusements are provided. For terms apply to
F. MURCHISON, M.A., M.B., Resident Proprietor.

## WYE HOUSE, BUXTON.

*ESTABLISHED* 1857. *NEW INSTITUTION COMPLETED* 1901.

FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN MENTALLY AFFLICTED.

VOLUNTARY BOARDERS CAN BE RECEIVED.

Situated 1200 feet above sea level. Facing south, sheltered from north and east. 14 acres grounds, tennis, croquet, golf, curling. Billiard rooms, theatre, workshop in house. Carriage exercise. Garage. Ten minutes from Pavilion Gardens, Baths, and L. & N.W. and Mid, stations. Seaside Branch in N. Wales.
For terms, &c., apply to the Res. Medical Superintendent,
GRAEME DICKSON, L.R.C.P. [NAT. TEL. 130.

## Inebriety, the Morphia Habit, and the Abuse of Drugs

## A PRIVATE HOME

*(Established 1864),*

for the Treatment and Cure of Ladies of the Upper and Higher Middle Classes suffering from the above.

**Highly Successful Results.**

MEDICAL ATTENDANT: Dr. A. V. CLARKE, Leicester

For terms, &c., apply, Mrs. THEOBALD, Tower House, Leicester.

Telegraphic Address: "Theobald Leicester.

## ST. ANDREW'S HOSPITAL
### FOR MENTAL DISEASES,
## NORTHAMPTON.

**For the Upper and Middle Classes only.**

President—The Right Hon. the EARL SPENCER, K.G.

The Institution is pleasantly situated and is surrounded by more than 100 acres of park and pleasure grounds.

The terms vary from 31s. 6d. to £4 4s. a week, according to the requirements of the case.

Patients paying higher rates can have Special Attendants, Horses, and Carriages, and Private Rooms in the Hospital, or in Detached Villas in the grounds of the Hospital; or at Moulton Park, a branch establishment, two miles from the Hospital.

For further particulars apply to the Medical Superintendent.

## BRYN-Y-NEUADD HALL, LLANFAIRFECHAN

### The Seaside House of St. Andrew's Hospital.

The Hall is beautifully situated in a park of 280 acres close to the sea, and in the midst of the finest scenery in North Wales.

Patients belonging to the Hospital (or Boarders) may go for long or short periods.

For further particulars apply to the Medical Superintendent, St. Andrew's Hospital, Northampton.

Telegraphic Address, "Relief, Old-Catton." Telephone, "290 Norwich."

## NERVOUS & MENTAL AFFECTIONS.

***Ladies only received.***

## The Grove, Old Catton, near Norwich.

**A High-class Home** for the **Curative Treatment** of **Nervous** Affections. Situated a mile from the City of Norwich. **Special** and **Separate** accommodation is provided for those suffering from **Hysteria** and for cases of **Incipient Mental** trouble, who can be received as **Voluntary Boarders** without certificates and occupy their own private suites of apartments. A staff of experienced nurses has been organised to take charge of patients in their own homes. For terms, &c., which are moderate and inclusive, apply to the Misses MCLINTOCK, or to CECIL A. P. OSBURNE, F.R.C.S.E., &c., Medical Superintendent.

## INEBRIETY.

MELBOURNE HOUSE, LEICESTER.
PRIVATE HOME FOR LADIES.

Medical Attendant: ROBERT SEVESTRE, M.A., M.D. Cantab.
Principal: H. M. RILEY, Assoc. Soc. Study of Inebriety.
Thirty Years' Experience. Excellent Medical References.
For Terms and Particulars, apply, Miss RILEY or PRINCIPAL.
Telegrams: "MEDICAL, LEICESTER." Nat. Telephone: 362 Y

## Grove House, All Stretton, Church

STRETTON, SHROPSHIRE.

A PRIVATE HOME for the Care and Treatment of a limited number of Ladies Mentally afflicted. Climate healthy and bracing.
Apply to Dr. McClintock, Proprietor and Resident Medical Superintendent.

# NEWMAINS RETREAT, NEWMAINS, LANARKSHIRE.

*Licensed under the Inebriates Acts.*

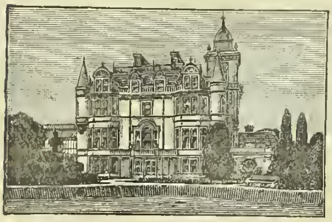
The house is devoted to the Care of LADIES of the upper classes only, who can be treated either under the Acts or as Voluntary Patients. The place stands high and the estate is extensive, with bracing air and in good shelter. It is very retired and beautiful, well suited for the treatment of Inebriety, narcomania and other perversions, neurasthenia, hysteria, epilepsy, and minor mental ailments.

No patients under certificate of insanity can be received.

References: Dr. CLOUSTON, Dr. YELLOWLEES, Dr. RISIEN RUSSELL, and others. Resident Superintendent: GEORGE R. WILSON, M.D.

Terms and particulars on application to "Superintendent, The Retreat, Newmains, N.B." Nearest station, Hartwood, Cal. Rly.

---



# INEBRIETY AND NARCOMANIA.

## INVERNITH LODGE RETREAT, COLINSBURGH, FIFE.

*(Licensed under the Inebriates Acts.)*

For the treatment of Gentlemen suffering from the Alcohol and Morphine habits, and from the habitual use of such drugs as Cocaine and Chloral. There are many unique advantages. Isolation from temptation, extensive grounds (150 acres), private golf course, shooting, tennis, &c. Billiard rooms, photographic rooms. Grounds 450 feet above sea level; dry and bracing air. Most scientific methods used for those suffering from drug habit. References can be given by the leading medical men in the United Kingdom. Terms and particulars on application to JOHN Q. DONALD, L.R.C.P., L.R.C.S. (Edin.), Proprietor and Resident Physician.

*Telegraphic address:* "Salubrious," Upper Largo. *Telephone:* No. 8, Upper Largo (P.O. system).

---

# PLAS-YN-DINAS.

*Licensed under the Inebriates Acts.*

This House is the only one in the British Isles where it is made a *sine quâ non* that all patients entering it must be of good social standing and is in its isolation and extent of property unrivalled, the most recent scientific methods are adopted for the treatment of Inebriety and the abuse of drugs, with excellent results. The Plâs is a handsomely furnished residence replete with every convenience, and surrounded by charming and extensive grounds. The sporting property is 25,000 acres, and there are 24 miles of fishing in the Dovey, &c.

*References*—Dr. SAVAGE, Dr. FERRIER, and many other leading medical men.

For Prospectus, terms, &c., apply to Dr. WALKER, J.P., Plâs-yn-Dinas, Dinas Mawddwy, Merionethshire.

---

# HAYDOCK LODGE PRIVATE ASYLUM, NEWTON-LE-WILLOWS, LANCASHIRE.

A House Licensed for the care and treatment of Persons of unsound mind of the middle and upper classes.

Situated midway between Liverpool and Manchester, 2 miles from Newton-le-Willows Station, L. & N.W.R.

**Private Patients only** received. The payments vary from 25s a week to 6 guineas a week according to the accommodation required.

Acute and urgent cases of both sexes can be received at any time, either as Voluntary Boarders or under Certificates.

The necessary forms for admission and further information as to terms, &c., may be obtained on application to Dr. STREET, the Resident Medical Licensee. Dr. STREET attends at 47, Rodney-street, Liverpool, every Thursday from 1 to 4.

Telegrams: "Street, Ashton-in-Makerfield.' Telephone: 11, Newton-le-Willows.

Visiting Physicians { Sir JAMES BARR, M.D., F.R.C.P., 72, Rodney-st., Liverpool, Physician to the Liverpool Royal Infirmary &c.,
NATHAN RAW, M.D., M.R.C.P., 66, Rodney-street, Liverpool, Physician to the Mill Road Infirmary.

---

FOR THE TREATMENT OF MENTAL DISEASES.

# SHAFTESBURY HOUSE, FORMBY-by-the-SEA, Near LIVERPOOL.

TELEPHONE—8 FORMBY.

*Resident Licensees:* { STANLEY A. GILL, B.A., M.D., M.R.C.P. Lond., formerly Medical Superintendent to the Liverpool Lunatic Asylum. | Mrs. STANLEY GILL.

*Visiting Physician:* T. R. GLYNN, M.D., F.R.C.P. Lond., Consulting Physician, Liverpool Infirmary, and Professor of Medicine, University College, Liverpool.

This House, specially built and licensed for the care and treatment of a limited number of Ladies and Gentlemen mentally afflicted, is delightfully situated near the coast between Liverpool and Southport, so that patients have the benefit of pure bracing sea air, for which Formby is noted. The House is in the country, and stands in several acres of ornamental well-wooded grounds, the surroundings being in every way bright cheerful, and pleasant. As the Licensees reside on the premises they are able to devote the whole of their time to the constant supervision of the patients. All kinds of out- and in-door amusements and occupation provided. Voluntary boarders without certificates admitted. Terms moderate.

The Licensees have also a private residence in Llandudno for the treatment of mild borderland and convalescent patients.

---

# PECKHAM HOUSE,

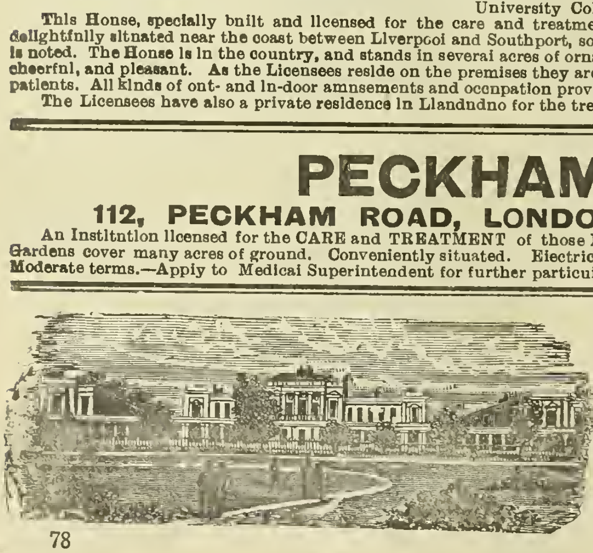
Telegrams: "Alleviated, London.'

## 112, PECKHAM ROAD, LONDON, S.E.

Telephone: 1576 Hop.

An Institution licensed for the CARE and TREATMENT of those MENTALLY AFFLICTED of Both Sexes. Private Patients only received. Gardens cover many acres of ground. Conveniently situated. Electric trams and omnibuses from the Bridges and West-End pass the door. Moderate terms.—Apply to Medical Superintendent for further particulars.

---



# NORTHWOODS HOUSE

## WINTERBOURNE, near BRISTOL.

FOR PRIVATE TREATMENT OF MENTAL DISEASES.

Situated in a large park in a healthy and picturesque locality, easily accessible by rail viâ Bristol, Winterbourne, Patchway, or Yate Stations. Uncertified Boarders received.—For further information see Medical Directory, page 1947. Terms moderate.

Apply to Dr. R. EAGER, Resident Physician and Licensee, for full particulars.

# NORWOOD SANATORIUM.

UNDER A COMMITTEE OF WELL-KNOWN MEDICAL MEN whose names will be supplied to any Member of the Profession on application to the Resident Medical Superintendent.

The object is to apply to the treatment of Alcoholic and Drug Inebriety all available knowledge, and, by accurate observation and record of cases, to extend that knowledge, and place the therapeutics of Inebriety upon a definite scientific basis. The treatment is of such a nature that the restrictions common to Retreats need not be enforced. In many cases a residence of six weeks is sufficient. The Sanatorium consists of two detached houses (one for Ladies and one for Gentlemen) situated in beautiful and secluded grounds overlooking the Kentish and Surrey Hills. All information to be obtained from the Resident Medical Superintendent, Norwood Sanatorium, 93, Church Road, Upper Norwood, S.E. Consultations at 14, Stratford Place, W. (opposite Bond Street Tube Station), on Mondays and Thursdays, 3 to 4 P.M.

*Telegrams:* "NOROTORIUM, LONDON." Resident Medical Superintendent: FRANCIS HARE, M.D. *Telephone.* 240 SYDENHAM.

# NORDRACH-UPON-MENDIP SANATORIUM.

For the Treatment of Phthisis ON THE MENDIP HILLS. Opened January, 1899.

THIS SANATORIUM was the first to be established in England for carrying out treatment on the lines of Dr. OTTO WALTHER, of Nordrach, Germany, with whom Dr. Thurnam resided for two years, and was the first Sanatorium to undertake the estimation of opsonic indices, and the employment of tuberculin by Professor Sir Almroth Wright's method.

It stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surounded by woods and moorland.

There are 36 patients' bedrooms, heated by hot-water pipes and lighted by electricity.

Resident Physicians—ROWLAND THURNAM, M.D.; ARTHUR DE WINTON SNOWDEN, M.D.

Terms from 3 to 5 guineas weekly according to size and position of room.

For full particulars apply to THE SECRETARY, Nordrach-upon-Mendip, Blagdon, near Bristol. *Telegrams: " NORDRACH, BLAGDON.*

# BUNTINGFORD HOUSE RETREAT AND SANATORIUM,

## BUNTINGFORD, HERTS.

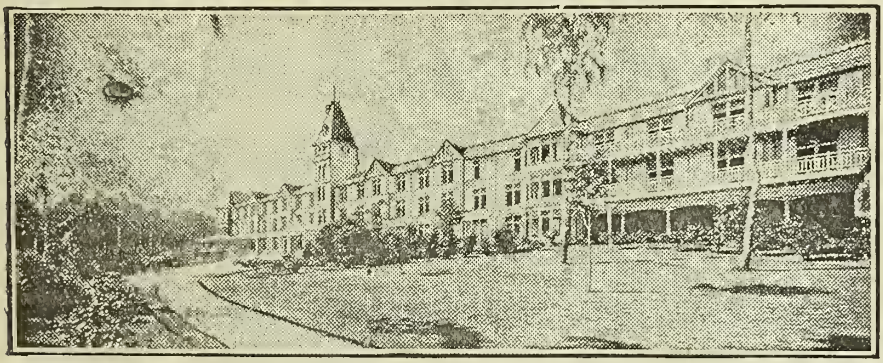
☞ For Gentlemen suffering from Alcohol and Drug Inebriety; also for Gentlemen Convalescing after Illness. In a most healthy part of the country; 10½ acres of grounds; about 400 feet above sea level. Electric Light throughout from private installation. Golf, Cricket, Tennis, Hockey Croquet, Library, Billiards, Photographic Dark Room, Gardening, Carpenters' Shops, Poultry, &c., &c. Quarter mile from Station, G.E.R.

**Two Resident Physicians.**

No Infectious or Consumptive Cases taken. Inebriety Patients are admitted voluntarily only, either privately or under the Inebriates Acts.

Terms: 1½–3½ Guineas. *Telegraphic Address:* "SUPERINTENDENT, HILLSIDE, BUNTINGFORD."

# NORDRACH-ON-DEE (NEAR BALMORAL, SCOTLAND).



Open-Air Treatment of
**CONSUMPTION**
and Allied Diseases.

INOCULATION TREATMENT regulated by DAILY estimations of the OPSONIC INDEX is available for all patients residing in this Sanatorium.

Research Laboratory. Fully Equipped Throat Room. Dental Room. Roentgen Ray and Ultra Violet Light Installations.

*Address: Dr. LAWSON,*
*Banchory, N.B.*

# WHITMEAD HILL SANATORIUM, NEAR FARNHAM.

Stands in 18 acres of pine and heather on a southern slope of Crooksbury Hill, well sheltered and sunny in winter. Graduated walks. Electric light. Rest-Cure Patients taken.

J. HURD-WOOD, M.D.

Terms from £4 4s. Telegrams—"Hurd-Wood, Tilford."

# LONDON OPEN-AIR SANATORIUM

## PINEWOOD, NINE MILE RIDE, near WOKINGHAM, BERKS

*For the Treatment of Pulmonary Tuberculosis.*

Situated in its grounds of 82 acres of Pine Forest. Specially built with every essential of hygiene and comfort. Each Patient has a separate bedroom facing south with electric light. Two Resident Medical Officers.

**Terms: £3 : 3 : 0 per week.**

This Sanatorium was opened in 1901 for the treatment of cases of consumption among the educated middle classes. It is the free and generous gift of a few philanthropists, and is held in trust by the "LONDON OPEN-AIR SANATORIUM," an Association licensed by the Board of Trade and not carried on for the sake of profit or gain. It is managed by an Honorary Committee, four of whom are Members of the Executive Council of the National Association for the Prevention of Consumption. For particulars apply to the SECRETARY, LONDON OPEN-AIR SANATORIUM, 20, Hanover-square, London, W.

*Suitable cases will be admitted immediately.*

# EAST ANGLIAN SANATORIUM,

## NAYLAND, SUFFOLK.

*This Sanatorium has been specially built for the Open-air Treatment.*

The building faces south, and stands in its own grounds of 94 acres, is lighted throughout by electricity, and heated by steam. There is accommodation for a resident medical officer, matron, and staff of nurses.—Application for admission should be made to Dr. Jane Walker, 122, Harley-street, W. **Terms 4 to 6 guineas per week.**

---

# YARROW CONVALESCENT HOME, BROADSTAIRS.

## FOR CHILDREN OF REFINED PARENTS OF LIMITED MEANS.

100 Beds. Boys, ages 4 to 12. Girls, ages 4 to 14.

*A Charge of 5s. per week for each child.*

Two wards are reserved for serious cases requiring special treatment. In these wards the age limit may be extended to 14 years for Boys and 16 years for Girls.

The Home is equally adapted for residence in winter as in summer and is situated in 12 acres of well-sheltered grounds, with playing-fields facing the sea.

Full particulars obtainable from **T. FREDK. MYERS**, Secretary, at the London Office, 6, Holborn Viaduct, E.C.

---

# VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the Treatment of Pulmonary and other forms of Tuberculosis as carried out by Dr. Otto Walther of Nordrach. It is situated in the midst of a large area of park land at a height of 450 ft. above the sea level, and commands extensive views of the Vale of Clwyd. It has a bracing climate, with a small rainfall and a large amount of sunshine. It is well sheltered on the N. and E. by mountains rising to 1800 ft. which afford facilities for a great variety of uphill walks.

The Physicians are fully conversant with Dr. Walther's Treatment, having themselves been patients at Nordrach.

For particulars apply to Cecil E. Fish, B.A., M.B., B.C., M.R.C.S., L.R.C.P., or Geo. A. Crace-Calvert, M.B., M.R.C.S., L.R.C.P., Llanbedr Hall, Ruthin, North Wales.

---

# OCHIL HILLS SANATORIUM, KINROSS-SHIRE, N.B.

on the southern slope of one of the frontier ranges of the Grampians, at an elevation of 800 feet, in grounds of 460 acres, with pine woods and walks of all gradients. This Sanatorium is structurally one of the finest and most up-to-date in Europe, fitted with all the most recent appliances for the Open-Air Treatment of Tuberculosis.

A non-tubercular wing for non-tubercular cases requiring electrical, hydropathic, opsonic, compressed air, or inhalation treatment. Full medical and nursing staff. Research laboratory and Bacteriologist.

Station Kinross, N.B. Railway, one hour from Edinburgh or Glasgow.

For prospectus and particulars apply, J. J. Galbraith, M.D., Sanatorium, Milnathort, Kinross-shire.

Telephone: 9, Milnathort Post Office. Telegrams: Sanatorium, Milnathort.

---

# CROOKSBURY SANATORIUM

## FOR THE OPEN AIR TREATMENT OF CONSUMPTION.

Specially designed, built, and equipped on carefully chosen ground. Sheltered from east, north, and west on a sunny southern slope, over 400 ft. above sea level. Large grounds covered with pine woods and heather, with beautiful distant views Trained Nurses. Electric lighting. Opsonic tests. A few chalets and special block for slight cases and convalescents. Apply to Dr. F. Rufenacht Walters, Farnham, Surrey.

*Reg. Tel. Address:*
"Sanatorium. Farnham.

---

# COTSWOLD SANATORIUM.

This Sanatorium takes patients suffering from all forms of Tuberculous Disease. It is situated on the Cotswold Hills, at an elevation of 800 feet, and surrounded by magnificent scenery. It stands in its own grounds of nearly 140 acres, and in the midst of wooded common land of about 1000 acres.

Rooms have hot and cold water laid on, are warmed by hot water, and lighted by electricity.

Verandahs similarly warmed and lighted.

Milk, butter, and cream supplied from tested cows. ***Inclusive charges, £4 4s. to £6 6s. weekly.***

*Medical Superintendent:* F. K. Etlinger, M.R.C.S., L.R.C.P.

Apply to THE MEDICAL SUPERINTENDENT, COTSWOLD SANATORIUM, NEAR STROUD.

*Telegrams:* "Cotswold Sanatorium, Birdlip."

Gd. HOTEL & PENSION HABSBURG SCHINZNACH LES BAINS

# SCHINZNACH LES BAINS

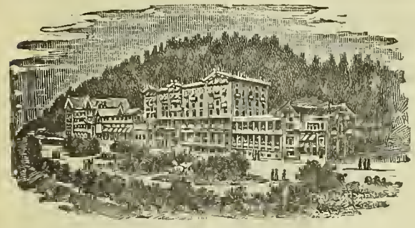
(SWITZERLAND) For CATARRHAL DISEASES

# Gout

Latest Improvements, *Pulverisation.* Beautiful walks and drives, fine scenery. English Protestant and Roman Catholic service.

For English prospectus
apply to the Proprietors:
Amsler, Rilliet & Cie.

# Skin Diseases



**ALPINE HEALTH RESORT FOR CHEST COMPLAINTS.**

# LEYSIN

French-speaking **SWITZERLAND** On the Simplon R'l'y

*5000 feet above sea level. Open all the year round.*

Three Sanatoriums:

| | | |
|---|---|---|
| GRAND HOTEL ... | 12 francs, upwards | Board and Medical Attendance. |
| MONTBLANC ... ... | 11 ,, ,, | |
| CHAMOSSAIRE ... | 8 ,, ,, | |

SPECIAL TREATMENT for PULMONARY TUBERCULOSIS by Sanatorium Methods, assisted by Alpine Atmosphere. Prospectus free on application to the Directors.

# DIABETES

**BAUER'S SPECIAL INSTITUTE FOR DIABETES,**

**KOETZSCHENBRODA** near **DRESDEN.**

Telephone 2063. Hours for Consultation: Weekdays, 8 to 1 o'clock.

NEW and MASTERFUL DIABETES THERAPY, based strictly upon natural science and proved by practical testing. Medical Men and Chemists are always under treatment. The so-called Carlsbad cure no longer necessary.

Resident Medical Men. Prospectuses in English free.

# DR. H. AND P. TEUSCHER'S SANATORIUM

OBERLOSCHWITZ-WEISSER HIRSCH, near DRESDEN.

*For NERVOUS DISORDERS, DISORDERS of METABOLISM, and CONVALESCENCE.*

Dr. H. TEUSCHER, Doctor for the Nerves; Dr. P. TEUSCHER, General Medical Man.

Prospectuses Free. New Bath House. Electric Light. Central Heating. WINTER CURE.

## BADEN-BADEN.

# SANATORIUM DR. SCHAMBACHER.

Healthiest and most beautiful situation in a large park. For NERVOUS and CARDIAC DISEASES, DISORDERS of METABOLISM, ANÆMIA, GOUT, RHEUMATISM, &c., CONVALESCENCE, MORPHINISM.

Sun Bath. Hydro-Electrotherapeutics. Electric light. Modern comfort. Prospectus free.

# SANATORIUM CLAVADEL.

**5500 feet above sea-level. Two miles from DAVOS-PLATZ, SWITZERLAND.**

Specially built for the OPEN-AIR TREATMENT of CHEST DISEASES. Surrounded by extensive pine woods. Magnificent scenery. Bracing mountain climate. High record of sunshine. Perfect sanitary conditions. Excellent food. Trained English Nurses.

# The Bath of Ems best cure of catarrhs

of the Respiratory Organs, the Digestive Organs, Female Ailments, Urinary System, and Rheumatism, Gout, Asthma.

DRINKING AND BATHSCURE, INHALATIONS, PNEUMATIC CHAMBERS, &c.

*Prospectus through the Kurcommission.*

MINERAL WATER (Kraenchenbrunnen),
SALT FROM THE SPRINGS,
EMS PASTILLES. TO BE HAD EVERYWHERE.

# BADGASTEIN

Station on the K. K. State Lines *Direct Carriages from Berlin & Vienna.* The STRONGEST ALPINE THERMAL WATERS of EUROPE. With 18 springs of 39° R. (=49° C.) maximum temperature, altitude 1012 metres, in the midst of the most magnificent Alpine region, and used with greatest success in disorders of the nervous system of local or general nature (neuralgias); also in GOUT, RHEUMATISM, disorders of the bladder and kidneys, and in all cases based on exhaustion of the nervous system, caused through previous illnesses, mental over-exertion, or excesses. Comfortable lodgings in 56 hotels and lodging houses. Baths in all houses. Season May 1st to Sept. 30th. During May, June, and September prices greatly reduced. Full particulars respecting the Spa, to be had of the Cur-commission. Prospectus gratis. Thermal waters expedition through Heinrich Mattoni, Vienna.

---

Health Resort

# Teplitz-Schönau,

## BOHEMIA.

Alkaline Saline Hot Springs of High Radio-activity.

**Relieves:** Gout, Rheumatism, Paralytic Complaints, Neuralgia of various kinds, Sciatica, Inflammatory Deposits, Illness after Wounds and Fractures, Stiffness of the Joints. &c.—Hot, Douche, & Mud Baths; Electric Light Baths; 2 and 4-cell Baths; Carbonic Acid Baths; Italian Mud Baths (Fango); Mechanotherapy. *Season all the year round.* Medical Men and their families do not pay Kurtaxe or Music tax, and receive free Baths.

---

**FRANCE.**

# PLOMBIÈRES.

**VOSGES.**

Establishment open from MAY 15th to SEPTEMBER 30th.

## BICARBONATED ARSENICAL WATERS.

THE MOST RADIO-ACTIVE SPRINGS OF FRANCE, ACCORDING TO M. CURIE'S ANALYSIS.

*Easy access from Paris in 8 hours, from London (viâ Calais, Nancy-Bâle) in 16 hours.*

PLOMBIÈRES is situated in a valley at the foot of the Vosges, 1350 feet above the level of the sea. PLOMBIÈRES answers now fully every hygienic request. The drinking water is pure and limpid. The richly wooded environs, and consequently the refreshing mountain climate, make PLOMBIÈRES one of the most superior CLIMATIC HEALTH RESORTS. *Casino, Concerts, Balls and Operas. Telegraph and Telephone.*

INDICATIONS OF USE.—The tranquillising, sedative, and calming effects of the Waters of Plombières, administered in Baths and in Drinking, have the most successful effects in the **Diseases of the Stomach** and of the **Bowels** (especially **Dyspepsia** and **Diarrhœa, Muco-membranous Colitis, Appendicitis**), and in **Diseases of Women.**

Combined with the Vapour Baths, Massage, and Douches, this treatment is indicated for the cure of **Rheumatism** and **Gout** (especially with **Nervous Erethysma**). Saloons for Inhalations from Vaporised Mineral Water, Oleum Pini, &c. (with APPARATUS OF WASSMUTH, of Barmen) for AFFECTIONS OF THE THROAT AND LUNGS. The presence of Arsenic in the Waters of Plombières has a great share in the good results obtained from their use in **Paludal Cachexia** and in **Arthritic Manifestations. Whey and Milk Cure.**

*Medical Gentlemen, their Wives and Children, are invited to make use of the Baths, Douches, &c., free of charge.*

**GRAND HOTELS DES THERMES.** Manager: VERIN-BAUDOT.—First-class Hotel, with every home comfort. English spoken. Lift. Lawn Tennis. All Hygienic Appliances. System Jennings.

---

Homburg-Bath

HOMBURG'S MINERAL SPRINGS

# DISEASES OF THE DIGESTIVE SYSTEM

THE HOMBURG DIETETIC TREATMENT ("HOMBURGER DIÄTEN")

Homburg-Bath

# Sanatorium Clara Emilia

ESPECIALLY FOR STOMACHAL & INTESTINAL TROUBLES

DR. CURT PARISER – DR. BENNO LATZ.

---

# SURREY HILLS HYDROPATHIC, CATERHAM

## HEALTH TRAINING FOR CHRONIC INVALIDS.

Well-equipped Bath and Treatment Rooms. Weir-Mitchell Rest Cure. Radiant Heat Electric, Nauheim and Brine Baths. Vibratory Massage. High Frequency, Sinusoidal, Faradic, & Galvanic Electricity. Massage, Manual Swedish Movements, and Medical Gymnastics.

Pure, Bracing Air. Excellent Water. Delightful location among the beautiful Hills of Surrey, 450 ft. above sea. Food Reform Diet. A Temperance House and a quiet, cheerful Health Home. Infectious, Incurable, and Offensive Cases not received. Terms, 2½ to 3½ Guineas a week.

For Prospectus address, A. B. OLSEN, M.D., Supt., Caterham, Surrey.

---

# NORTHUMBERLAND HOUSE,

Telegrams:
"SUBSIDIARY, LONDON."

GREEN LANES, FINSBURY PARK, N.

*(Established 1814.)*

Telephone:
No. 888, North.

**A PRIVATE HOME** for the Care and Treatment of Ladies and Gentlemen Mentally Afflicted. Four miles from Charing Cross; easy of access from all parts; a quarter of an hour's walk from Finsbury Park Station, G.N.R., from which Trams pass the gates.

Six acres of ground, highly situated, facing Finsbury Park.

Private Villas in suites of rooms. Terms from 2½ guineas upwards according to the accommodation provided.

For further particulars apply to the RESIDENT PHYSICIAN.

---

# ABERYSTWITH

## "The Biarritz of Wales,"

Is highly recommended for invalids. It possesses the most equable temperature, its shores being swept by the Gulf Stream and the S.W. breezes of the Atlantic. The drainage is perfect and the town is supplied with the purest water from Plynlimmon and lighted with electricity. The late Sir James Clarke, M.D., says: "A fortnight in Aberystwith is equivalent to a month's residence in most watering-places." Guide and information can be had on application to the Town Clerk.

## MANOR VALLEY SANATORIUM

PEEBLESSHIRE.

Situated 810 ft. high, amongst the well-wooded (pines) upper Peeblesshire Hills. Pure moorland air. Hill climbing. Panoramic views of great variety and beauty. Terms from 2½ guineas per week.
Prospectus from Medical Superintendent.

---

## MEDICAL ESTABLISHMENT,

PARIS.

The Most Complete in the World.
Electricity, Water, Heat, Movement (Zander's Improved System), X-Rays, &c
25 RUE DES MATHURINS, 25, Opera.
English Consulting Physician seen at any time.
First-class Residential Home, 15, Boulevard Madeleine, Paris.

---

## LEIGH HOUSE.

A new Hospital for Mental Cases has been opened for the reception of Private Patients. Terms £1 1s. 0d. per week.
*There are vacancies for both sexes.* For particulars apply to the MEDICAL SUPERINTENDENT, HATTON ASYLUM, WARWICK.

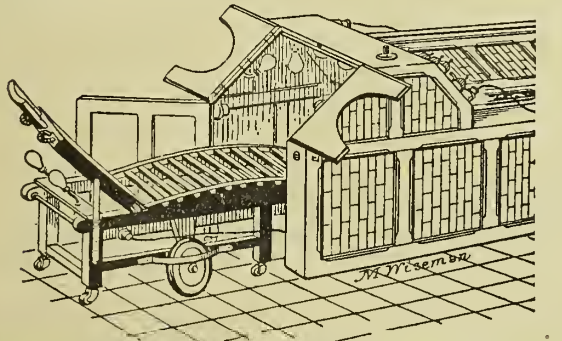
---

## GUERNSEY. HOME OF FRUIT AND FLOWERS.

Quaint Houses and Streets. Bracing Climate.
Blue Skies and Silver Seas. Rocky Scenery.
Inland and Marine Excursions.

Send a post-card for Illustrated Guide, with list of Hotels and Boarding Houses, at most moderate prices, to Secy., Advertising Committee.

---



## ST. JAMES' ELECTRIC, LIGHT, & PINE BATHS

1, YORK ST., JERMYN ST., S.W.
MRS. WISEMAN, established in London, 1888.
Qualified Masseur attends, and at patients' residences by appointment.
*Patients treated under Medical Supervision.*

---

## HARROGATE.

DELIGHTFUL HEALTH AND PLEASURE RESORT.

Bracing moorland air. Splendid Scenery. Magnificent Walks and Drives. Extensive Pine Woods.

**WORLD - RENOWNED MINERAL SPRINGS** (over 80), Sulphurous, Chalybeate, &c

**FINEST BATHS IN EUROPE (50 Treatments),** including Sulphur Baths, Massage Baths, Massage Douches, Hot Air Baths, Vapour Baths, Electric Baths, Peat, Turkish, Russian, &c. Additional Building recently erected, where the Treatment for Muco-Membranous Colitis, Chronic Appendicitis, &c., is administered.

Write for Illustrated Booklet, dealing with the Waters and Treatments. Address: HENRY JAMES BUCKLAND, Genera Superintendent, 2, Wells and Baths, Harrogate.

---

## BAD NAUHEIM. PARK HOTEL,

including Extra Premises known as PARK HOUSE.
OPEN ALL THE YEAR ROUND.

Both Houses furnished in the latest style and excellently situated in the Brunnen Park. Single rooms and suites with baths Military society. *Write for Prospectus.*

---

## ILFRACOMBE.

**Ilfracombe Hotel,** The only FIRST-CLASS HOTEL in Ilfracombe.

Five acres beautiful grounds on seashore. 250 rooms. Electric light. Lift. Golf Tennis; Croquet; Bowls. Splendid Seawater Swimming and Private Baths. Own Motor Garage in grounds. Very moderate tariff and inclusive rates. H. RUSSELL GROVER, Managing Director.

---

**Barton Court Hotel, New Milton,** Hants. Magnificent golf links adjoining hotel; facing sea; due south; bracing air; most picturesque hotel on south coast. Moderate winter terms; also Friday to Monday inclusive. Excellent cuisine. Highly recommended.
On main line from Waterloo; nine miles from Bournemouth, close to New Forest.

---

**Residence wanted for Gentleman** (neurasthenic) in house of Medical Man where no other case is taken, with garden, on Kent or Sussex Coast.—Full particulars and terms to W., 148, Old Church road, Hollington, Sussex.

---

**Bethel Hospital for Mental Diseases,** Norwich.—This endowed Hospital having recently been much enlarged and improved, is now replete with everything tending to promote the comfort and well-being of those suffering from Mental Diseases. Patients of both sexes are received.
Terms from 30s. weekly. Full particulars can be had from the Resident Medical Superintendent.

---

**Miss Goffe's Private Nursing and** CONVALESCENT HOME.
Stanmore, Woodside Park, North Finchley.
Medical, Surgical, Maternity, and Chronic Cases received. Resident Masseuse. Home comforts and skilled nursing.
Good garden, with pleasant country views. Bracing and healthy neighbourhood.

---

**Resident Patient, Invalid or Mental,** can be Received into married Doctor's house (within easy reach of London). Very comfortable home. Massage, &c. References to specialists. Doctor has had great experience with Nerve cases.—Address, No. 490, THE LANCET Office, 423, Strand, W.C.

---

## INTEMPERANCE.

**Physician (married), 15 years' experience** in the short term treatment, receives PATIENTS in his private house.
Garden. Billiards. References to former patients.
Terms, Physician, 145, Merton-road, Wimbledon.

---

**Clarence Lodge, Clarence - road,** Clapham Park.
A limited number of LADIES suffering from Mental and Nervous Disorders are received for treatment under a Specialist.
The house stands in large grounds.
For further particulars see illustrated prospectus from the proprietress, Miss F. Leech, B.A. Telephone: 494 Brixton.

---

**A Lady in Private house in Surrey** has accommodation for a MENTAL CASE or INVALID LADY requiring supervision. Bracing situation on open common, one mile station, forty minutes London. Terms 4 to 6 guineas.—Address, No. 103, THE LANCET Office, 423, Strand, W C.

---

**Resident Patient.—A Medical Man,** married, residing within easy reach of London, offers a comfortable, quiet HOME to a Lady or Gentleman. Mental case not objected to. Own nurse or servant could be accommodated if required. Highest references.—For terms, &c., address, No. 242, THE LANCET Office, 423, Strand, W.C.

---

**Resident Patients.—List of Doctors** in all parts receiving Resident Patients, with description of accommodation, terms, &c., can be had without charge from Mr. G. B. Stocker, 22, Craven-street, Strand, W.C., or selection will be made on statement of nature of case and means.—Telephone, No. 1854 Gerrard.

---

**Physician receives one Patient.** Cathedral City, near sea. Suite of rooms if desired. Full-sized billiard table. Moderate terms.—Address, No. 597, THE LANCET Office, 423, Strand, W.C.

**Loco-Ataxia —Wanted by Gentleman,** Treatment for above, particularly for incoördination, in Institute or Private Home. Reasonably low charges. — Address, No. 120, The Lancet Office, 423, Strand, W.C.

---

**A Medical Man addicted to the** Morphia Habit wishes to place himself for Treatment with someone who has had experience of such cases.—Address, stating terms, &c., to No. 114, The Lancet Office, 423, Strand, W.C.

---

**Private Home for the Care, Instruction,** and Training of Backward, Delicate, and Feeble-minded Children, under Medical management. Special Department for elder Girls and Boys. Resident Teachers. Home comforts. Cycling, gardening, out-door games, &c., taught. Twenty years' experience. Large secluded grounds.—Apply, Lady Superintendent or Medical Director, Woodfield, Streatham, Surrey.

---

**Resident Patient. — Invalid or** Mental Case received by experienced Doctor. Beautiful detached commodious house, situated in large sheltered lovely garden and lawns; tennis and croquet, &c. Easy distance from London. Delightful climate. Every home care and comfort. Driving and motoring.—Address, No. 537, The Lancet Office, 423, Strand, W.C.

---

**A Physician (married, no family)** has a Vacancy in his Country Home for a RESIDENT PATIENT. Detached house, garden, &c.; pretty neighbourhood. Gravel soil. Golf, boating, fishing, tennis, &c. Easy distance from London. Terms strictly moderate. Highest references.—Address, No. 116, The Lancet Office, 423, Strand, W.C.

---

**Slight Mental Case.—Home in a** Doctor's family required for Lady, certified. Good house in London and previous experience necessary. Lady willing to receive a certified case into her house would also do.—Address, stating terms, to No. 119, The Lancet Office, 423, Strand, W.C.

---

**Doctor wanted, West Coast of** Africa.—Wanted, a duly qualified SURGEON to take charge of a West African Mine. Agreement one year. Passage both ways and all found.—Apply, stating age and salary required, to B. P. B., care of Messrs. Streets, 30, Cornhill, E.C.

---

**Liverpool Infirmary for Children.—** There will be a vacancy on the 1st August for a HOUSE SURGEON. Salary £100 per annum, with board and lodging. Ladies not eligible.

Applications, with copies of testimonials, to be sent on or before the 17th July to Arnold J. Cleaver, Hon. Sec.

Liverpool Children's Infirmary, Myrtle-street, Liverpool.

---

**Royal Waterloo Hospital for** CHILDREN and WOMEN, S.E.—There is a vacancy for a JUNIOR RESIDENT MEDICAL OFFICER at this Hospital. Salary at the rate of £40 per annum, with board and washing. Applications, with three recent testimonials, should be sent to the Secretary at the Hospital on or before the 24th of July.

---

**Ayr County Hospital.—The** Directors invite applications from qualified men for the post of RESIDENT HOUSE SURGEON. The duties include dispensing. Salary £70 per annum, with board and residence. Appointment for one year from 1st August, 1907.

Applications, with testimonials, to be lodged before 15th July, 1907.

Wellington Chambers, Ayr. J. H. Goudie, Secretary.

---

**Hastings, St. Leonards, and East** SUSSEX HOSPITAL.—A vacancy has occurred in the Honorary Medical Staff of the Hastings, St. Leonards, and East Sussex Hospital for a PHYSICIAN. For particulars apply to the Secretary.

The Committee will receive applications for the appointment.

Applications and copies of testimonials should be sent to the Secretary on or before July 25th.

Canvassing disqualifies. H. Mc. A. Cutfield, Secretary.

---

**Assistant Pathologist. — Applications** for this post are invited from recently qualified Medical Men, having experience in Laboratory Work. Remuneration £150 a year, increasing by annual instalments of £50 up to £300. Candidates should apply by letter, giving full particulars as to age, qualifications, and experience, to the Secretary, The Clinical Research Association, Ltd., Watergate House, Adelphi, W.C.

---

**Norfolk and Norwich Hospital.—** MALE ASSISTANT HOUSE SURGEON required, to commence duty at once. Must possess a double qualification and be registered. Appointment for six months. Apartments, board, and laundry provided. Honorarium £20. Send applications, with testimonials, to the undersigned by 10th July, 1907. Frank G. Hazell, Secretary.

---

**Ayr District Asylum. — Wanted,** JUNIOR ASSISTANT PHYSICIAN, man, single, under thirty years. Salary £120, with board, apartments, and laundry. Applications, with particulars and testimonials, to be sent to the Medical Superintendent on or before the 14th July.

---

**West Suffolk General Hospital,** Bury St. Edmunds.—A HOUSE SURGEON wanted for this Hospital to commence duties immediately.

The House Surgeon must be a registered Medical Practitioner and not married.

Salary £100 per annum, with board and lodging.

Applications, stating age and previous experience, and accompanied by not more than four testimonials, should be delivered on or before 13th July to the Secretary, from whom copies of the Rules and any information may be obtained.

26th June, 1907. John H. Bonner, Secretary.

---

**The Royal Infirmary, Hull.—** Wanted, CASUALTY HOUSE SURGEON. Must be fully qualified, willing to hold office for not less than six months, and shall give and receive one month's notice to terminate engagement. His duties will be chiefly in the Casualty and Out-patient Department, where an exceptionally varied experience may be obtained, patients being drawn from a seagoing community as well as from a manufacturing and agricultural district. He will also have charge of beds in the Isolation Hospital. Salary £50, with board and lodging.

Applications, with copies of testimonials, to be sent in addressed Chairman, House Committee, at once.

Benjamin Brooks, Secretary.

---

**Northampton General Hospital.—** Wanted, a HOUSE SURGEON (Male). Salary £90 a year, increasing to £100 after one year's service, with apartments, board, washing, and attendance. Candidates must hold a registered Medical and a registered Surgical qualification, and be unmarried. Applications, stating age and qualifications, with copies of testimonials, must reach the undersigned not later than the 18th inst. The gentleman appointed will be expected to enter upon his duties on the 1st of August.

Candidates who have previously held a hospital appointment, apart from the hospital at which they received their medical and surgical training, should produce a testimonial from the Board of Management or other Governing Committee of the hospital.

Personal canvassing is not allowed.

5th July, 1907. C. S. Risbee, Secretary-Superintendent.

---

**Egypt.—Sub-Inspector of Ophthalmic** HOSPITALS.—Applications are invited from gentlemen experienced in Ophthalmic Surgery for a post as a Sub-Inspector of Ophthalmic Hospitals. Candidates must be registered medical practitioners and must be prepared to begin their duties (which are mainly clinical) in October, 1907. They must be thirty years of age or under and unmarried.

The salary is £500 a year, with two months' salary in lieu of travelling expenses to and from England. The appointment is for two years, during which three months' leave on full pay will be allowed.

Applications, stating experience and qualifications, should be posted in London to the Director-General, Department Public Health, Cairo, not later than June 14th, 1907, after which date applications will be received in London up to July 7th by A. F. MacCallan, Esq., 32, Bedford Gardens, Kensington, W., who will interview selected candidates at a time and place which will be intimated later. Further particulars will be sent on application. The successful candidate will be required to pass a medical examination.

---

**West Bromwich District Hospital.** —Wanted, a SENIOR HOUSE SURGEON for this Institution. He must be doubly qualified and unmarried. Salary £110 per annum, with board, residence, and laundry.

Applications, stating age, to be sent to T. Foley Bache, Esq., Churchill House, West Bromwich.

By order of the Board.

J. K. Millward, Secretary.

---

**West Bromwich District Hospital.** —An ASSISTANT HOUSE SURGEON wanted. He must be doubly qualified and unmarried. Salary £75 per annum, with board, residence, and laundry.

Applications, stating age, to be sent to T. Foley Bache, Esq., Churchill House, West Bromwich.

By order of the Board.

J. K. Millward, Secretary.

---

**Cancer Hospital (Free), Fulham-**road, London, S.W.—MEDICAL OFFICER in Charge of the Electrical Department.

Applications are invited for the above post.

Candidates, who must be duly qualified medical men, must send in their applications, with copies only of three recent testimonials, to the undersigned, on or before Monday, 8th July.

The appointment will be made for twelve months subject to renewal at the end of the period. An honorarium of £26 5s. is granted annually.

Fred W. Howell, Secretary.

**Royal Surrey County Hospital,** Guildford.—Wanted at once, a HOUSE SURGEON. Salary £100, with board, residence, and laundry. Selected candidates allowed third-class return fare. Applications, with testimonials (copies only), to be sent to the Hon. Secretary at the Hospital.

---

**Stockport Infirmary.—Wanted, an** ASSISTANT HOUSE and VISITING SURGEON. Must be fully qualified and registered. Salary £80 per annum, with board, washing, and residence. Applications, with testimonials, to be sent at once to the Secretary.

---

**Liverpool Stanley Hospital.—There** is a vacancy on the Staff for an ASSISTANT HONORARY OPHTHALMIC SURGEON (in the Out-Patient Department).

Full particulars as to qualifications, &c., may be obtained from the Honorary Secretary. Applications, enclosing testimonials, must be addressed to the undersigned before the 10th July.

FRANK WHITE, Hon. Sec.

---

**Essex and Colchester General** HOSPITAL.—Required, a HOUSE PHYSICIAN. Salary £80 per annum, with board, residence, and washing in the Hospital. Candidates must be duly qualified and registered. Applications, with copies of three recent testimonials to be sent on or before Tuesday, 16th July, to

ALFRED G. BUCK, Secretary.

The Hospital, Colchester, 1st July, 1907.

---

**Macclesfield General Infirmary.—** Wanted, JUNIOR HOUSE SURGEON. He must be doubly qualified, duly registered, and must have had experience in the administration of anæsthetics.

Salary £60 per annum, with board, residence, and washing.

Applications, with copies of testimonials, to be forwarded to the Chairman of the House Committee not later than Friday, July 12th, 1907.

---

**London Temperance Hospital. —** Applications are invited for the post of ASSISTANT HOUSE SURGEON, non-resident. The appointment will be for a period of six months and will be vacant on the 1st August, 1907. Honorarium at the rate of £75 per annum. Candidates must possess registrable qualifications in Medicine and Surgery, and will be required to appear before the Medical Committee on July 22nd. Applications, with testimonials, to be sent in to the undersigned by Thursday, July 18th.

A. W. BODGER, Secretary.

---

**Parish of Birmingham.—Workhouse** INFIRMARY.—ASSISTANT RESIDENT MEDICAL OFFICER wanted.—The Guardians of this Parish require the services of a properly qualified Practitioner as Assistant Resident Medical Officer at the Workhouse Infirmary. Salary £104 per annum, with furnished apartments, rations (which do not include alcoholic liquors), coal, gas, laundry, and attendance.

Gentlemen desirous of becoming candidates must possess the double qualification required by the Local Government Board, and be duly registered under the Medical Act. The gentleman appointed will have to devote his whole time to the office. The appointment will be made for one year only, but may be renewed by the Guardians.

Canvassing the Guardians by or on behalf of any candidate is prohibited, and will be held to be a disqualification.

Any fees received by the gentleman appointed will have to be paid by him to the Treasurer of the Board.

The appointment will be subject to the Poor-Law Officers' Superannuation Act, 1896.

Applications (with copies of testimonials) for the office to be sent to me at the earliest possible date.

CHARLES FLETCHER, Clerk to the Guardians.

Parish Offices, Edmund-street, July 1st, 1907.

---

**Wanted, at a Cottage Hospital, a** LADY with a registered qualification to Visit and Dispense. Salary £80 per annum, with furnished rooms, coals, lights, and attendance.—Address, No. 762, THE LANCET Office, 423, Strand, W.C.

---

**Leeds Union.—The Guardians of the** above Union invite applications for the appointment of ASSISTANT MATRON for their Union Infirmary.

Salary £45 per annum, together with apartments, rations, washing, and materials for uniform (subject to deduction under the Poor-Law Officers' Superannuation Act, 1896).

Candidates must be widows or single women, between the ages of twenty-five and forty years, duly trained and certified Nurses with experience, and must hold the certificate of the Central Midwives Board.

The Assistant Matron will be required to assist in the general work of the Institution under the Matron's direction, and in supervising a large nursing and domestic staff.

Forms of application will be sent on receipt of stamped addressed foolscap envelope, and must be received by me not later than Friday, the 19th day of July, 1907.

Canvassing the Guardians is strictly prohibited, and will disqualify a candidate.

Selected candidates will receive due notice to attend.

JAMES H. FORD, Clerk.

Poor-Law Offices, South Parade, Leeds,
June 28th, 1907.

---

**The Royal Institute of Public** HEALTH.

DEMONSTRATOR OF COMPARATIVE PATHOLOGY AND BACTERIOLOGY.

The above office will be vacant in September. Further particulars can be obtained on application.

JAMES CANTLIE, M.A., M.B., Hon. Secretary.

37, Russell-square, W.C.

---

**Manchester Royal Infirmary. —** SURGICAL REGISTRAR.—The office of Surgical Registrar (Non-resident) is vacant. Candidates, who must be duly registered medical practitioners, are required to send in their applications and testimonials, addressed to the Chairman of the Medical Board, on or before the 20th July next. Salary £80 per annum.

By order.

WALTER G. CARNT, General Superintendent and Secretary.

July 3rd, 1907.

---

**Teignmouth Hospital, S. Devon.—** Wanted, a HOUSE SURGEON for the above Institution. He will be required to Visit and Dispense and must be registered in Medicine and Surgery. Salary £70 a year, with board, lodging, and washing. No stimulants or mineral waters supplied, in lieu of which £6 per annum will be given. Applications, with testimonials, to the Hon. Secretary.

---

**Coventry and Warwickshire Hos-**PITAL (75 Beds).—Wanted, a JUNIOR HOUSE SURGEON.

Candidates must be duly qualified and registered. The appointment will be made for six months, subject to re-appointment and to three months' notice on either side. Salary £60 per annum, with rooms in the Hospital, board, washing, and attendance.

The gentleman elected will be required to enter upon his duties as early as possible.

Canvassing, either directly or indirectly, will be deemed a disqualification. Applications, stating age, with copies of recent testimonials and certificate of registration, must be sent to the undersigned.

Coventry, 1st July, 1907. ELLIS E. CRISP, Secretary.

---

**Newport and Monmouthshire Hos-**PITAL (100 Beds).—Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Registered Medical and Surgical qualifications. Knowledge of Röntgen Ray work desirable. The Hospital has an Out-Patient Department.

Salary £80 per annum, with board, residence, and laundry (no stimulants provided).

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the Hon. Secretary (from whom further particulars may be obtained) not later than first post on July 9th.

The successful candidate will be required to take office as soon as possible. Any candidate canvassing will be disqualified.

Applications from ladies not entertained, as there is no accommodation.

Newport, Mon. CHAS. T. WALLIS, Hon. Secretary.

---

**Loughborough and District General** HOSPITAL and DISPENSARY.—Wanted, RESIDENT HOUSE SURGEON, possessing a medical and surgical registered qualification. Some practical experience in the administration of anæsthetics and refraction work is desirable.

Salary £100 a year, with furnished rooms, attendance, board, and washing. The successful candidate will be required to enter on his duties about the 1st July and will be appointed for one year, but he will be eligible for appointment for a second year at an increase of £10.

Applications, stating age, &c., with copies of testimonials, to be sent to me, THOS. J. WEBB, Secretary.

Loughborough, 11th June, 1907.

---

**Bolton Infirmary and Dispensary.—** Wanted, for this Institution, containing 132 beds (including children's wards), a JUNIOR HOUSE SURGEON having a registered Medical and Surgical qualification. Age not to exceed thirty. Salary £100 per annum, with furnished apartments, board, and attendance. The gentleman elected must engage to serve the Institution for twelve months, and not to practise in the Borough of Bolton until five years from the date of appointment, unless he shall have served the Institution for three years. Canvassing the Committee directly or indirectly will disqualify any candidate.

Applications, stating age of candidate, with copy testimonials, to be addressed to the Hon. Secretary, W. W. Cannon, Esq., 20, Mawdsley street, Bolton, endorsed "Junior House Surgeon," not later than the 10th July, 1907. JAMES BRISCOE, Secretary.

---

**Derbyshire Royal Infirmary, Derby.** —The Elective Committee are prepared to receive applications for the post of ASSISTANT HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

The appointment will be for six months at a salary at the rate of £60 per annum, with board, residence, and washing.

Applications, with copies of not more than five testimonials, to be sent to me not later than noon on Wednesday, 10th July.

Duties to commence on 1st August.

By order,

EDMUND FORSTER, Superintendent and Secretary.

Royal Infirmary, Derby, 24th June, 1907.

**The Hospital for Epilepsy and PARALYSIS and OTHER DISEASES of the NERVOUS SYSTEM** (Incorporated), Maida Vale, W.—There is a vacancy for a **PHYSICIAN** for the Diseases of Women. Applications, with copies of testimonials, must reach the Secretary by July 31st, 1907.

H. W. BURLEIGH, Secretary.

---

**Taunton and Somerset Hospital,** Taunton.—A qualified **RESIDENT ASSISTANT HOUSE SURGEON** required at once. The appointment will be for six months, with salary at the rate of £50 per annum, board, lodging, and laundry. 100 beds. The appointment is not open to medical women. Apply, with copies of not more than three testimonials, to

REGINALD A. GOODMAN, Secretary.

---

**Victoria Hospital, Burnley.—The** Board of Management of this Institution are prepared to appoint a **RESIDENT MEDICAL OFFICER** for one year at a salary of £100, with residence, board and washing. Preference will be given to candidates having a knowledge of ophthalmology and bacteriology. The gentleman appointed will be required to commence duties as early as possible after July 26th .Applications, in writing, stating qualifications, with copies of testimonials, to be sent to me not later than first post, Tuesday, July 9th, endorsed "Medical Officer."

2, Grimshaw-street. F. A. HARGREAVES, Hon. Secy.

---

**Royal Eye Hospital, or Royal South LONDON OPHTHALMIC HOSPITAL,** St. George's-circus, S.E.—Qualified candidates skilled in Ophthalmoscopy and the estimation of Ametropia are invited to apply at once for the post of **REFRACTION ASSISTANT**, with attendance on Tuesday, Thursday, and Saturday mornings from 9 to 12 Honorarium £40 per annum. There are also vacancies for qualified unsalaried **CLINICAL ASSISTANTS** for both forenoon and afternoon duty. EDWIN EASTON, Secretary.

---

**Stockton and Thornaby Hospital,** Stockton-on Tees.—Wanted, a **HOUSE SURGEON.** Salary £180 per annum, with residence, board, and washing. Candidates must hold registered qualifications in medicine and surgery. One with previous hospital experience preferred. Age not to exceed thirty. Dispenser kept. The successful candidate will be required to take up his duties during August and to enter into a bond for compliance. Applications in writing, stating age, accompanied by copies of four recent testimonials, to be sent to me not later than July 18th. Canvassing prohibited.

H. G. SANDERSON, Secretary.

Exchange Offices, Stockton-on-Tees.

---

**Manchester Royal Infirmary.—The** Board of Management invite applications for the post of **LADY SUPERINTENDENT of NURSES.**

Commencing salary £150 per annum, with board, residence, and laundry.

Candidates must be trained Nurses in possession of a three years' certificate of efficiency, and must be qualified to train and lecture to probationers. They must have had previous experience in the management of a large general hospital and must be between twenty-eight and forty years of age.

The present Infirmary possesses 292 beds, but a new institution to commodate 600 patients will be completed in the autumn of 1908.

Candidates will receive on application to the undersigned a short list of questions to which replies are required. Any further information may be obtained on application.

Applications, accompanied by not more than four testimonials, and the printed form referred to above, must be sent to the undersigned by 9 A.M. on Friday, 12th July.

Duties to commence on 1st October, 1907.

Canvassing is strictly prohibited.

By order.

WALTER G. CARNT,
25th June, 1907. General Superintendent and Secretary.

---

**Seamen's Hospital Society.—The** Committee of Management, finding it necessary to increase their Honorary Medical Staff, invite applications for the following appointments, with duties at the Dreadnought Hospital, Greenwich, to which is attached the London School of Clinical Medicine:—

An ASSISTANT PHYSICIAN.
An ASSISTANT SURGEON.

Candidates for the office of Assistant Physician must be Bachelors or Doctors of Medicine of an University in the United Kingdom and Fellows or Members of the Royal College of Physicians of London.

Candidates for the office of Assistant Surgeon must be Bachelors or Masters in Surgery of an University in the United Kingdom or Fellows of the Royal College of Surgeons of England.

The appointments carry with them a seat upon the Medical Council.

The elected candidates will be appointed for twelve months but will be eligible for re-election.

Candidates are invited to attend a meeting of the Medical Council at the Society's Board Room, 13A, Cockspur-street, Pall Mall, S.W., on Tuesday, the 16th of July, 1907, at 5.30 P.M.

Applications, with copies of not more than three testimonials, which should be typewritten, to be sent in on or before the 15th July to the undersigned, from whom further particulars can be obtained.

By order.

P. MICHELLI, Secretary.

Seamen's Hospital Society, Greenwich, S.E., 2nd July, 1907.

---

**Dumfries and Galloway Royal INFIRMARY**—Wanted, an **ASSISTANT HOUSE SURGEON,** to commence duties immediately. Salary £25 per annum, with board and washing. Applications, with testimonials, to be lodged with Mr. Symons, Treasurer, on or before Monday, 15th curt.

3rd July, 1907.

---

**The Ingham Infirmary and South SHIELDS and WESTOE DISPENSARY.**—Wanted, **JUNIOR HOUSE SURGEON** (male). Salary £90 per annum, with residence, board, and washing.

Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by a month's notice.

Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JAMES R. WHELDON, Secretary.

74, King-street, South Shields, July 3rd, 1907.

---

**Poplar Hospital for Accidents.— ASSISTANT HOUSE SURGEON** required. Applications, with copies of not more than three recent testimonials, will be received by the Secretary not later than first post on Friday, July 19th, 1907.

The appointment will be made for six months He will have care of medical beds for three months. Re-appointment may be made for second six months Salary at the rate of £80 per annum, with board and residence. All applicants must be fully qualified. Duties to commence on August 6th, 1907.

PERCY ROGERS, Secretary and House Governor.

---

**Monmouthshire Asylum, Abergavenny.**—Wanted, a **SENIOR ASSISTANT MEDICAL OFFICER,** not over thirty years of age, and with not less than two years' Asylum experience. Salary £250 per annum, with board, furnished apartments, washing, and attendance. Applications, stating age, qualifications, &c, with copies of three recent testimonials, to be sent to the Medical Superintendent not later than Tuesday, the 23rd July next.

---

**Applications are invited for the** office of **MEDICAL OFFICER AND REGISTRAR** to the Cancer Department of the **MIDDLESEX HOSPITAL, W.** The salary of the appointment is £100 per annum, with board and residence.

Candidates, who must be fully qualified medical practitioners, are requested to send their applications to the undersigned not later than Friday, 19th July inst.

The appointment is an annual one and the gentleman appointed will be expected to take up the duties of the office on August 1st proximo.

By order of the Weekly Board.

F. CLARE MELHADO, Secretary-Superintendent.

---

**Rotherham Hospital and Dispensary.**—Wanted, an **ASSISTANT HOUSE SURGEON.** Ophthalmic experience a recommendation. Salary £80 per annum, with rooms, commons, and washing. Duties to commence early in August. Applications, with copies of four recent testimonials, to be sent to the Secretary, H. Kelson, Masonic Buildings, High-street, Rotherham, by July 17th.

---

**Rotherham Hospital and Dispensary.**—Wanted, a **SENIOR HOUSE SURGEON.** Candidates preferred who have had at least six months' previous experience as House Surgeon or Assistant House Surgeon. Knowledge of Eye Work and Refractions essential. Salary £110 per annum, with rooms, commons, and washing. Duties to commence on September 1st. Applications, with copies of four recent testimonials, to be sent to the Secretary, H. Kelson, Masonic Buildings, High-street, Rotherham, by July 17th.

---

**The General Infirmary at Gloucester and the GLOUCESTERSHIRE EYE INSTITUTION.—ASSISTANT HOUSE SURGEONCY.** Candidates must be registered and possess a Medical and Surgical qualification.

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Remuneration at the rate of £30 per annum, with board, residence, and washing.

Applications, stating age, and accompanied by testimonials, to be forwarded to the Secretary on or before Wednesday, the 17th July.

The elected candidate will be required to enter upon his duties on the 13th August.

This appointment is open to gentlemen only.

Gloucester, June 27th, 1907. HENRY P. PIKE, Secretary.

---

**Nottingham Children's Hospital.—** Wanted, a **LADY HOUSE SURGEON** for this Hospital on the 29th July next. The appointment will be for six months. Board, residence, and washing will be provided. Salary at the rate of £80 per annum. Canvassing for the appointment not allowed. Copies of the House Surgeon's bye laws can be obtained from the Secretary.

Applications, accompanied by four recent testimonials, from candidates holding some of the registrable qualifications, to be sent, addressed, to the undersigned, on or before Wednesday, July 17th.

Dated this 2nd day of July, 1907.

By order.

A. F. KIRBY, Secretary.

Albion Chambers, King-street, Nottingham.

**Bristol Royal Infirmary.—Wanted** immediately, Locum CASUALTY HOUSE SURGEON for six weeks.—Apply

W. B. BUDGETT,
Secretary and House Governor.

July 3rd, 1907.

---

**Radcliffe Infirmary and County** HOSPITAL, Oxford.—An election to the office of HONORARY ASSISTANT SURGEON is ordered to take place on Saturday, 27th July, 1907, at 2 o'clock. Candidates must be legally qualified to practise as surgeons in England. Testimonials to be sent on or before Wednesday, 24th July, to the Secretary-Superintendent, from whom further information may be obtained. By order.

G. C. RYND, Capt., Secretary-Superintendent.

3rd July, 1907.

---

**Royal Hampshire County Hospital,** Winchester.—Applications are invited for the post of HONORARY PHYSICIAN-IN-ORDINARY.

The qualifications are:—Fellow or Member of one of the Royal Colleges of Physicians of Great Britain or Ireland, or a Graduate in Medicine of one of the Universities of Great Britain or Ireland, and whose name is inserted in the Medical Register.

Applications, with testimonials, not exceeding five in number, must reach the undersigned not later than the 21st of July, 1907.

Canvassing is strictly prohibited

Selected candidates will be required to attend at the Hospital on the day of election.

July 3rd, 1907. T. M. RILEY, Major, Secretary.

---

**St. Luke's Hospital, Old street,** London.—Wanted, CLINICAL ASSISTANT (unmarried) recently qualified in medicine and surgery and registered.

The appointment is for six months from July 17th next, board, apartments, and washing being provided.

Candidates should present themselves to the Medical Superintendent previous to the date of election.

Application, with copies of testimonials, to be sent to the Secretary at the Hospital on or before Saturday, the 13th instant.

Candidates must attend at the Hospital on Wednesday, the 17th instant, at 11.30 A.M., when the House Committee will make the appointment.

---

**Second (Male) Assistant Medical** OFFICER wanted for the CHELSEA INFIRMARY, Cale-street, S.W.—Age not to exceed thirty years. Salary (subject to the sanction of the Local Government Board) £90, rising £10 to £100 a year, with board, furnished apartments coals, gas, and washing, and an allowance of £3 10s. a year (optional) in lieu of beer.

Salary and emoluments subject to the deduction prescribed by the Poor-law Officers' Superannuation Act, 1896.

He must be duly registered and must possess the qualifications required by the Local Government Board.

For particulars apply to the Medical Superintendent between the hours of 11 and 1 o'clock.

Canvassing the Guardians, either personally or otherwise, is prohibited.

Forms of application will be supplied by me, not later than 12th July inst., on receipt of a stamped and directed foolscap envelope.

By order.
C. W. SHEPHERD Clerk to the Guardians.

250, King's-road, Chelsea, S.W., 3rd July, 1907.

---

## THE MANCHESTER MEDICAL AGENCY.

9, ALBERT SQUARE.

Telegrams: "Medico, Manchester." Nat. Tel. No. 4800.

Secretary—CHARLES STEVENSON, F.C.I.S.

PROMPT AND PERSONAL ATTENTION TO THE REQUIREMENTS OF ALL CLIENTS.

---

## AKED & AKED,

***MEDICAL TRANSFER AGENTS,***

**43, Warwick Street, Regent Street, W.**

Telegraphic Address: "Akedian, London."

PRACTICES carefully Investigated and Valued for intending purchasers.

ASSISTANTS' BONDS Prepared; Fee, including stamp, 7s. 6d.

RELIABLE LOCUMS promptly supplied. No fee to Principals providing that three days' notice is given. In emergency cases a charge of 5s. will be made to cover cost of telegrams.

LONDON, W.C.—Large Mixed PRACTICE for sale. Receipts about £1500 per annum. Fees range from 6d. to 10s 6d. Midwifery 1 guinea upwards. This Practice is well known to us and can be recommended. Premium 2000 guineas.

STEADILY INCREASING PRACTICE near Manchester. Held by present incumbent nine years. Surgery fees 2s.; Visits 3s. Good house; rent £40. Receipts, 1904, £404; 1905, £445; 1906, £495. Moderate premium.

THROUGH ILL-HEALTH.—Suburban PRACTICE, must be sold immediately. Established five years. Receipts have been over £500 per annum. At present averaging £5 to £6 per week. Premium only £120 to immediate purchaser.

---

**MEDICAL TRANSFER AGENCY AND ACCOUNTANCY OFFICES. (Established 1868.)**

***19, Craven-street, Strand, W.C.***

**Messrs. Peacock & Hadley nego**TIATE the TRANSFER of PRACTICES and PARTNERSHIPS, also undertake ARBITRATIONS, INVESTIGATION, and VALUATION of Practices and all other business connected with MEDICAL AGENCY and ACCOUNTANCY.

LOCUM TENENS and ASSISTANTS with satisfactory testimonials can be engaged at very short notice.

BOOKS kept, ACCOUNTS made out, and DEBTS promptly collected in Town and Country.

No charge made to purchasers or for inquiries.

**Telegrams: "Herbaria, London." Telephone: 1112 Central.**

FOR SALE.

NORTH LONDON.—Long PARTNERSHIP Introduction given to a middle- and working-class Practice held by Vendor thirty years. Receipts average about £800 a year; no clubs. Expenses light. Good residence, with stabling; rent moderate. Premium one and a half years' purchase.

UNOPPOSED FOR SEVERAL MILES.—Country PRACTICE situated in a charming district of the West Midlands. Receipts last year £650, including nearly £200 from easily worked appointments. Well-built modern residence, with large garden, good stabling, and paddock. Good drainage and water-supply. Hunting, shooting, and fishing. Schools within easy reach. Station in village.

GOOD RESIDENTIAL SUBURB.—A Better- and Middle-class PRACTICE, established over fifty years. Receipts average about £1000 a year. Consultation and visiting fees are from 2s. 6d. to 10s. 6d., Midwifery from 1 to 10 guineas. Excellent family residence, with garden and stabling. Books have been audited.

PARTNER wanted for a Middle-class Practice in suburbs of a large Northern Town. Receipts are at the rate of £1200 a year. Working expenses light. Scope for surgery and for great increase in receipts. Half or smaller Share will be sold, with early Succession to whole if desired. Premium moderate.

JUNIOR PARTNER wanted for a Better- and Middle-class Practice in West London. Prospects for great increase, with the aid of an active Partner, are excellent. Receipts last year were about £1100, including over £200 from good appointments. Visiting fees range from 2s. 6d. to 10s. 6d. Working expenses are light. Third Share for disposal at first.

LONDON, W.—An old-established Cash and Private PRACTICE, easily and cheaply worked. Receipts average about £600 a year. Surgery fees from 1s. upwards; Visits from 2s. to 7s. 6d.; Midwifery 1 and 1½ guineas. No conveyance needed. Residence is situated in a good thoroughfare. It has four reception rooms, seven bedrooms, &c.; rent £65. Premium moderate.

MIDLAND COUNTY.—An Unopposed PRACTICE in good agricultural district. Receipts £800 a year, including £250 from appointments. Fees from 2s. 6d. to 10s 6d. Good house, with modern improvements, garden, and stabling; rent £40. Hunting, shooting, golf, &c. Station near.

SOUTHERN COUNTY.—A Town and Country PRACTICE, situated in a beautiful district where excellent hunting and other sport can be had. Receipts average £750 a year, including over £200 from clubs. Very good commodious residence, large garden, paddock, and stabling. Premium £950. Vendor retiring.

PARTNERSHIP.—The THIRD SHARE of an old-established mixed-class Practice, situated in a thickly populated suburban district, is for sale. Receipts are about £1800 a year. Expenses moderate. Good house available; rent £60. Premium one and a half years' purchase, part payable by instalments.

INLAND HEALTH RESORT.—A well-established Middle- and Working-class PRACTICE, yielding about £500 a year, about half being from appointments and clubs. Residence contains three reception-rooms, five bedrooms, and has good garden; rent £45. Vendor is retiring and will give long Partnership introduction if desired. Premium £750

PARTNERSHIP.—Cash Practice in a busy thoroughfare of East London. Receipts last year £850. No clubs. Working expenses very light. House, available for incoming partner, has good waiting and consulting-rooms, two sitting- and four bed-rooms; rent £55. Premium for Half Share £400. A young and active partner preferred.

MANCHESTER.—In a growing Suburb, a small Middle-class PRACTICE capable of great increase. Receipts average £400 a year. Visiting fees from 2s. 6d. to 10s. 6d. Eight-roomed residence; rent £26. Premium £300.

WANTED.

BEFORE OCTOBER NEXT, a Country or Country Town PRACTICE, preferably in Eastern or Southern Counties. Receipts from £500 to £1000 a year. Full value will be given for a suitable Practice.

PRACTICE in Brighton or other South Coast Town. Advertiser can invest up to £1500, but will consider small Practices with scope.

PARTNERSHIP in a well-established Practice in London or Provincial Town. Share to be worth from £400 to £800 a year. Advertiser is experienced and very energetic.

PRACTICE in London or Suburbs yielding from £500 to £1000 a year. Intending purchaser is free to negotiate at once and has the necessary capital.

Messrs. PEACOCK & HADLEY, 19, Craven-street, Strand, W.C.

---

**Bedford & Co., Auctioneers and** Surveyors, 10, Wigmore-street, Cavendish-square, W. (established 1860), make a special feature of letting and selling Houses and Consulting-rooms in the Cavendish-square, Grosvenor-square, Portman-square, and leading medical districts. Lists on application. Properties registered free of charge. Telephone: 2412 Paddington.

# FIELDHALL, LIMITED,

## MEDICAL TRANSFER AGENTS,

## LONDON and LEEDS.

**ADELPHI HOUSE, 71-72, STRAND, W.C.**
(Entrance: First door on right in Adam-street.)
Managing Director: J. FIELD HALL, M.B.
Telephone: 4667 GERRARD. Telegrams: "FIELDHALL, LONDON."

**HEPWORTH CHAMBERS, 148, BRIGGATE.**
(Within 5 minutes of the Stations.)
Manager: W. LANGWORTHY BAKER, M.R.C.S.
Telephone: 3753 CENTRAL. Telegrams: "FIELDHALL, LEEDS."

The London and Leeds Offices work in co-operation, thus affording Clients the advantages of two Agencies in different parts of the Kingdom.

**SALES of PRACTICES and PARTNERSHIPS** negotiated, and all **BUSINESS** connected with **TRANSFERS** undertaken. Investigation of Practices, Valuation, Medical Accountancy, Arbitrations, &c.

**NO CHARGE to PURCHASERS**, who are requested to send full details of requirements, for submitting particulars of Practices and Partnerships.

**RELIABLE LOCUMS and ASSISTANTS** introduced. An Annual Office Fee of 10/6 is charged to Principals for providing Locums. No charge for introducing Assistants.

A Schedule of Terms and Business undertaken will be sent on application to the Manager of either office.

## PRACTICES FOR SALE.

1. LONDON, E.—Partnership of about £300 per annum in a Cash Surgery. Rent £38. Easily worked and ample scope. Premium £300, part by instalments.

2. WEST KENSINGTON.—Nucleus of good General Practice in main thoroughfare. Prominent corner house, occupied by Medical Man for many years. Premium, for goodwill, book debts, fixtures, and fittings, £300.

3. LONDON, S.W. — Third Share in sound mixed General Practice. Income nearly £1200. Visits 2s. 6d. to 7s. 6d. Rent £45. Premium £650.

4. ESSEX SUBURB.—Steadily increasing PRACTICE. Income £677. Appointments £100. Fees mostly 1s. 6d.; Visits 2s. 6d. Rent £50. Premium £800.

5. LONDON, N.W. — Income £400. Visits 2s. 6d. to 7s. 6d. Good introduction. Premium for house and Practice £1300.

6. ESSEX.—Rapidly increasing mixed Practice. Income last year £550. Visits mostly 2s. 6d. and 3s. 6d. Double-fronted house. Premium £500.

7. SURREY.—Home for Inebriates and Nervous cases.—SHARE is offered in established Home to a Medical Man prepared to invest £300.

8. YORKSHIRE.—Suburb of large Town.—Old-established General Practice. Average income nearly £1200. Working expenses small. Large detached house. Premium £1500, or Half Share would be sold.

9. YORKSHIRE.—West Riding Town.—Sound Middle- and Working-class PRACTICE. Average income £700. Good house, in prominent position; rent £70. Premium £875.

10. LANCASHIRE.—Residential Coast Town.—Good Middle-class PRACTICE. Income last twelve months over £700. Excellent scope. Fees 2s. 6d. to 7s. 6d. Good house and garden. Premium for house and Practice £1750.

11. EASTERN COUNTIES. — Old-established unopposed PRACTICE. Income about £350 including appointments Exceptional prospect of increase. Visits 3s. 6d. to 1 guinea. Good detached house with large garden; rent £40. Premium £600.

12. SOUTH COAST.—Good-class Non-dispensing PRACTICE in favourite Health Resort. Average income £600. Well situated house. Premium £750.

13. MIDLANDS. — County Town. — Old-established good-class PRACTICE. Average income £1000. Fees 3s. 6d. to 1 guinea. Very little Midwifery. Good hunting and educational facilities. Convenient house; rent £50. Premium £1000.

14. LANCASHIRE, NEAR LARGE TOWN. — ONE THIRD or HALF SHARE in superior mixed Practice. Average income £1450, including over £200 from appointments. Visits 3s. 6d. to 5s Large scope for increase. Good house; rent £45. Premium two years' purchase.

15. LANCASHIRE.—Suburb of large Town.—HALF SHARE in old-established General Practice. Average income over £1200. Good house available at moderate rent. Premium £1200.

16. S.W. COUNTY TOWN. — Well-established PRACTICE. Income nearly £1000. Usual fee 5s. Good scope for Surgery. Large double-fronted house, with good garden; rent £75. Hunting, fishing, &c. Premium £1500.

17. YORKSHIRE.—COUNTRY PRACTICE.—Income £480. House built for the Practice; rent £32. Opposition weak. Premium £300, or house and Practice £750.

18. YORKSHIRE. — Seaside Town. — Small better-class Non-dispensing PRACTICE. Average income £240. Usual fee 5s. Excellent scope. Very convenient house in splendid position. Premium for house and Practice £1700.

19. DEVONSHIRE — Country Town. — Good General PRACTICE. Income £570. Visits 2s 6d. to 7s. 6d. Good house, with garden and tennis lawn; rent £48. Excellent sport. Premium £800.

20. YORKSHIRE. — Excellent old-established PRACTICE in rapidly increasing Country district. Income over £500. Good house. Exceptional scope. Premium £600.

21. SHROPSHIRE. — Unopposed Practice in very picturesque district. Average income nearly £650. Good fees. Nice house and garden. Hunting, fishing. Premium £1150.

22. CORNWALL. — Country Town. — Old-established General PRACTICE. Average income £600. Slight opposition. Premium £600. Ample scope.

23. CUMBERLAND. — Unopposed Practice in beautiful Country. Income £450. Fees 2s 6d. upwards. Excellent house; rent £25 Very safe investment Premium £675

24. NORTHERN CATHEDRAL CITY.—Income about £780. Middle- and Working-class. Good house; rent £40. Visits 3s. 6d. Premium £750.

## PRACTICES WANTED.

LONDON, W. or S.W.—M.B. Cambridge requires PARTNERSHIP with elderly man, or PRACTICE. Must be good-class. Any income from £500 upwards. Ample capital.

LONDON, WEST-END.—M.B., F.R.C.S., requires good-class PRACTICE or PARTNERSHIP. Preferably Non-dispensing. Capital up to £3000.

PARTNERSHIP in pleasant locality required by M.D. Income £800 to £1000. Ample capital.

COUNTRY TOWN. — M.B., M.R.C.S., requires PRACTICE of £600 to £1500. Must hunting. Capital £2000.

GOOD-CLASS PRACTICE, preferably in the South, required by M.B. Would purchase house, or rent about £50. Capital £2000.

LINCOLNSHIRE or North Midlands.—Country Town, or unopposed PRACTICE. Income £350 to £750. Capital £1600.

LONDON SUBURB.—General Practice or PARTNERSHIP. Income £400 to £900 Capital £1800.

KILBURN, MAIDA VALE, or Western Suburb. —PARTNERSHIP required by young practitioner in sound General Practice. Income £400 upwards. Capital £1500.

NORTH OF ENGLAND.—M.D. Victoria requires PRACTICE or PARTNERSHIP. Preferably near Manchester. Income £500 upwards. Capital £2000.

CASH SURGERY.—Either Practice or PARTNERSHIP, preferably in W.C. or Western districts. Good premium paid for sound investment. Capital up to £2000.

UNOPPOSED PRACTICE required by M.R.C.S. Income £400 upwards. House with good garden. Capital £1500.

# THE SCHOLASTIC, CLERICAL, & MEDICAL ASSOCIATION,

## LIMITED. ESTABLISHED 1880.

## 22, CRAVEN STREET, STRAND, W.C.

Telegraphic Address—"Triform, London." Telephone No. 1854 (Gerrard).

A Pamphlet relating to the MEDICAL DEPARTMENT, with the names of the DIRECTORS and the MEDICAL ADVISING BOARD, and terms will be sent on application to—Mr. G. B. STOCKER,* MANAGING DIRECTOR, 22, CRAVEN-STREET, STRAND, W.C.

The Association undertakes the SALE of PRACTICES and PARTNERSHIPS; the Introduction of LOCUM TENENS and ASSISTANTS; INTRODUCTION of RESIDENT PATIENTS; MEDICAL ACCOUNTANCY (by a duly qualified Medical Accountant); INVESTIGATION and VALUATION of PRACTICES, &c.; POSTING BOOKS and sending out Bills, INSURANCE OF ALL KINDS, &c., &c.

### FOR SALE.

(1) **PARTNERSHIP** in a Middle- and Better-class and rapidly increasing Practice in a residential neighbourhood in Surrey, under ten miles from London. Cash receipts for twelve months ending June 30th, 1907, £1670, including public appointments worth about £400. Premium for Two-thirds Share £2000. Good house and garden.

(2) **WEST RIDING OF YORK.**—A leading Good-class PRACTICE in a manufacturing town. Cash receipts average over £950 per annum, including an appointment worth £30 per annum. Visiting fees 5s. and 7s. 6d. No carriage required. Excellent detached house; rent £70. Introduction as may be arranged Premium £1000. Excellent opening for a well qualified man.

(3) **PARTNERSHIP** in a General Practice (including all classes of patients in a fashionable residential town. The cash receipts for twelve months ending May 31st, 1907, are over £940, are increasing very rapidly, and will continue to do so. Premium for Half Share £950.

(4) **WEST RIDING OF YORK.**—Suburb of a large Manufacturing Town. Middle- and Working-class PRACTICE of about £1800 per annum, including appointments worth about £200. Rent of house £65, or would be sold. Premium one year's purchase.

(5) **PARTNERSHIP** in a Practice (with Succession) in a small Town in the Midlands. Population under 20,000. Cash receipts average over £780, including appointments worth about £80 to £100. A One-third Share would be sold for one and a half years' purchase, with view to Succession to the whole in about two years' time or earlier.

(6) **PARTNERSHIP** in a Middle-class Practice in the North of London. Cash receipts average over £1100 per annum, including appointments of about £300. Premium for Half Share one and a half years' purchase Scope for increase. There has been no partner in the practice hitherto. Prospect of succession to the whole practice in a few years.

(7) **A THIRD PARTNER** is required in an old-established mixed Practice of over £3000 per annum, in a market Town beautifully situated in the North Midlands. Premium for One-fourth Share £1200, to include a one-fourth share of horses, traps, harness, surgery fittings, drugs, &c.

(8) **PARTNERSHIP** in a Country Practice in the Midlands, within easy reach of a large town. Cash receipts average over £1350 per annum, including appointments worth nearly £600. A One-half or One-third Share would be sold at two years' purchase. Purchaser should be a bachelor.

(9) **PARTNERSHIP** in a Practice in an attractive Country District in Hampshire not far from the Sea. Cash receipts for twelve months to April, 1907, over £1460, including appointments of over £600. Premium for One-third Share two and a half years' purchase.

(10) **SOUTH of ENGLAND.—PARTNERSHIP** (with view to Succession) in a first-rate Country Practice of over £2000 per annum in a small town. Price two years' purchase. Good society. Good sport.

(11) **WITHIN TEN MILES OF LONDON.**—A good opportunity offers for a Medical Man accustomed to good-class practice to succeed to an old Family CONNEXION of over £1000 per annum. Comfortable house, with stabling and garden, at moderate rent. Premium required about one and a half years' purchase.

(12) **INLAND HEALTH RESORT.**—Old-established good-class Special PRACTICE of over £1000 per annum. In present incumbent's hands thirty-five years. Commodious detached house, with stabling, standing in about two acres of grounds.

(13) **PARTNERSHIP WITH VIEW TO SUCCESSION** in about two years to a Practice in an outlying Suburb in Essex, close to Epping Forest. Cash receipts average over £1000 per annum. Premium required, £775 for Half Share and £775 for other Half at end of Partnership Part of premium for second half could be paid by instalments if security given.

### FOR SALE (*continued*).

(14) **LONDON.**—Residential Suburb South of the River.—Good Middle-class PRACTICE. Established by Vendor twenty years ago. Cash receipts average over £1080. No appointments. Detached house, with stabling and two to three acres of garden and meadow; rent £110. Educational advantages. Premium one and a half years' purchase.

(15) **HOME COUNTIES.**—Popular Seaside Resort.—Old-established PRACTICE.—Cash receipts average £349 per annum. The house is situated on sea front; rent £55. Premium one and a half years' purchase. Scope for increase. Vendor retiring.

(16) **EASTERN COUNTIES.**—Unopposed Country PRACTICE. Cash receipts for 1906 over £440, including an appointment worth £35 per annum. Capital house, with stabling, garden, and paddock; rent £40. Excellent hunting. Premium £650.

(17) **PARTNERSHIP** in a Practice in a Country Town in a favourite county in the South of England. Cash receipts for 1907 expected to reach £900 (1906 £775). A one-half or one-third share would be sold. Price two years' purchase; or less if only a third share purchased.

(18) **NORTH OF ENGLAND.**—Town of over 100,000. Old-established Middle- and better Working-class PRACTICE of between £1100 and £1200 per annum. No appointments. Well-situated house in the best residential part of the town; rent £45. Premium £1000. Scope for increase.

(19) **PARTNERSHIP** in a good Mixed Practice in an Industrial Town within 30 minutes by tram of large City in North of England. Average income £1450 per annum, including appointments worth between £200 and £250. Any share up to One-half would be sold for two years' purchase, to include share of book debts, drugs, &c.

(20) **PARTNERSHIP** in a Middle- and Working-class Practice in a South-Western Suburb of London. Cash receipts for 1906 nearly £1200, including club appointments worth over £400. Premium for One third Share £650, with option of purchase to One-half subsequently.

(21) **PARTNERSHIP (HALF SHARE)** with View to Succession to an old established Country Practice in the South Midlands. In the same hands forty years. Cash receipts average about £500, including appointments worth about £140. Premium one and a half years' purchase.

(22) **YORKSHIRE.**—An old-established PRACTICE of about £570 per annum in a large Manufacturing Town in the West Riding. No carriage required. The house is situated in a main street; rent £60. Premium one year's purchase.

(23) **NEAR THE SOUTH-WEST COAST.**—A PRACTICE in a small Country Town close to an important town. Cash receipts average over £550, including appointments of over £160. House is Vendor's freehold and would be let for £45 per annum or sold for £900. Picturesque country. Any reasonable length of introduction. Premium £850.

(24) **NORTH OF ENGLAND.**—Large City. High-class Non-dispensing PRACTICE, including many of the most influential residents in the district. Cash receipts for 1906 over £1700. Fees mostly 5s. to 10s. 6d. Excellent house, with stabling and garden. Rent £120 or would be sold. Twelve months partnership introduction. Premium for goodwill £2700.

(25) **WEST OF LONDON.**—Old established PRACTICE. Receipts average over £1500. No appointments. Excellently situated house. Rent £100. Good introduction. Premium one and a half years' purchase, or much less if purchaser would take over vendor's furniture, horse, and carriage. The Practice is capable of considerable increase.

(33) **SOUTH COAST.**—Large and fashionable Residential Town and Health Resort. Cash receipts average over £280 per annum. Detached house, with garden; rent £60. Premium £400.

(34) **SOUTH COAST.**—Large and fashionable Residential Town. Small good-class Non-dispensing PRACTICE. Cash receipts average over £280 per annum. Premium £400.

## COLONIAL PRACTICES FOR TRANSFER.

(35) **NEW ZEALAND (SOUTH ISLAND).**—Important Town near the Coast.—Cash receipts for twelve months to August 31st, 1906, over £960 per annum. Good house, with half an acre of garden; rent £100. Plenty of society. Excellent climate. Educational facilities.

(36) **BEST CLIMATE IN THE WORLD.**—Extremely attractive city. Leading PRACTICE worth £2000 per annum with long and thorough introduction. Fees range from 8s. to £1. Very light work. Good society and amusements of all kinds. Premium one year's purchase, of which part might possibly be paid by instalments, if secured. Vendor now in England.

(37) **TRANSVAAL.—PRACTICE** of between £700 and £800 per annum, in a small Town. Well-situated house, with good garden and stabling; rent £8 per month, or would be Sold. Excellent climate. Good society. Premium £400. Shooting, polo, and cricket.

(38) **BRITISH COLUMBIA.**—Old-established unopposed PRACTICE in a village 2500 feet above sea level. Cash receipts average over £590, including appointments worth £200. Twelve-roomed house, with stabling and excellent garden; rent £40. Beautiful climate. Sport of all kinds. Premium £600, to include horse, carriage, harness, and furniture of house, valued at £150.

(39) **AUSTRALIA.—A PRACTICE** in one of the chief Seaport Towns of over 15,000 population. Cash receipts for 1906 £1158. Visiting fees 7s. 6d. to £1 1s. Well situated house, with stabling and garden Good climate. Sport of all kinds. Premium only £500.

(40) **CAPE COLONY.**—Large and important Seaport Town. Cash receipts average £1150 per annum. Visiting fees 5s. to 10s. 6d. Working expenses light. No carriage. Good house available. Scope for increase, especially to a good Surgeon. Reasonable offer will be entertained.

(41) **AUSTRALIA.**—Pleasant Town within easy reach of large city. Non-dispensing PRACTICE. Cash receipts average over £1500 per annum, including appointments of about £650. Healthy climate. Premium for goodwill £1000.

ASSISTANTS & LOCUM TENENS SUPPLIED.

---

* Author (jointly with Wm. Barnard, M.A., LL.B.) of "Medical Partnerships, Transfers, and Assistantships," published by Steven & Sons, Ltd., 119, Chancery Lane, E.C. Price net 8s. 6d., or by post 9s.

MEDICAL TRANSFER AGENCY. ESTAB. 1875

# MR. PERCIVAL TURNER (OLD EPSOMIAN)

*(Son of a well-known Practitioner and Author of Guide to Medical and Dental Professions),*

## 4, ADAM STREET, ADELPHI, LONDON, W.C.

**Telegraphic Address, "EPSOMIAN, LONDON." Telephone, 3399 CENTRAL.**

**Transfer of Practices and Partnerships effected. Assistants and Locum Tenens provided. No fee to Principals. Investigation and Valuation of Practices, Accountancy, Bookkeeping, Arbitrations, &c. Insurances on Specially Reduced Terms to Medical Men only.**

---

**South Coast.—In a favourite and** fashionable Resort a General PRACTICE, at present returning about £300 a year, is for Disposal. Patients all classes. Easily worked. Good detached house and garden; rent £65. Premium £400. (No. 3901.)

---

**Northern County.– £1200 a year.—** A steadily increasing PRACTICE in one of the most prosperous Business Towns. Fees from 2s. 6d. upwards. No clubs. No horse necessary. Very good house, with garden and greenhouse, in Suburb of Town. Partnership introduction of six months or more. Premium £1500. Personally known and recommended. (No. 3900.)

---

**City Practice.—A well-established** and increasing NUCLEUS in heart of the City. Returns at present about £150. Excellent opportunity. Premium £200, including furniture, &c., of good rooms. (No. 3897.)

---

**£550 a year.—Unopposed Country** PRACTICE, including appointments of £200, in agricultural and fruit-growing district in Eastern county. Moderate sized house, small garden, greenhouse, &c.; rent £30. Premium one and a half years' purchase. Railway close. Personally known. (No. 3895.)

---

**£500 a year.—South Wales Coast,** suburbs of Large Town. Easily worked; no horse. Visits 3s. 6d. and 5s. Very good house, billiard room, &c. Small garden. Rent £75. Partnership introduction six months. Premium £800. (No. 3896.)

---

**North Midlands.—£1100 a year.—** Very old-established PRACTICE, over thirty years in same hands, in large Manufacturing Town. Vendor retiring. Appointments nearly £600 a year. Visits 3s. 6d. and 5s. Surgery fee 2s. 6d. One horse. Small house; rent £40. Premium one and a half years' purchase. Partnership introduction. Personally visited and recommended. (No. 3872.)

---

**On the Thames.—Immediate.—£500** a year.—An old-established increasing PRACTICE in a favourite Riverside Town. Lowest fee 2s. 6d. Good house with garden; rent £55. Residential town. Illness only reason for sale. Price one and a half years' purchase. (No. 3801.)

---

**Seaside Practice.—£500 a year.—** Middle class PRACTICE in a favourite resort in North of England. Visits from 2s. 6d. Small house; rent £25. Partnership introduction. Premium £600. Personally known to Mr. Turner. (No. 3894.)

---

**Midlands —£300 a year (nearly).—** In a good Business Town.—Fees from 2s. 6d. Excellent house with large garden, suited for Resident Patients and on outskirts of town; rent £80. Premium £250. (No 3881.)

---

**£900 a year.—Unopposed Practice,** within 100 miles. Established over 100 years, same hands thirty years On line of rail. Appointments £200. Very good house and well laid out grounds. Introduction long as desired. Premium two years' purchase. Personally known and recommended. (No. 3877.)

---

**South Coast.—£600 a year.—Good-**class General PRACTICE, mostly non-dispensing, in a favourite and fashionable Resort. Fees chiefly 5s. and 7s. No appointments taken. Choice of two houses. Easily worked; no horse required. Premium one and a half years' purchase. (No. 3888)

---

**Yorkshire.—£300 a year.—General** PRACTICE in a large City. Fees from 2s. to 7s. 6d. Convenient house and garden; rent £35. Transferable appointments £130. Premium £450. (No. 3887.)

---

**West Coast.—£350 a year.—Unop**posed PRACTICE in a favourite Summer Resort. Appointments £60. Fees 2s. 6d. to 10s. 6d. Good house, five bedrooms, bath, and good garden; rent £25. Easily worked; no horse; no dispensing. All kinds of sport. Price £500. (No. 3874.)

---

**Partnership and Succession, £1500** a year.—PARTNER wanted with view to Succession to a very old-established Practice within an hour of London in a good business and residential town. Fees 2s. 6d. to 7s 6d. Appointments £200. One horse required. Midwifery 1 to 5 guineas. Books certified by accountant. Half Share for Sale at two years' purchase. (No. 3890.)

---

**West of England.—£1000 a year** (nearly).—Increasing PRACTICE in good residential Town on main line. Visits 2s. 6d. to 7s. 6d. Good house; rent £85 One horse or motor sufficient. Partnership introduction. Premium one and a half years' purchase. (No. 3882.)

---

**London.—Partnership and Succes**sion.—Over £800 a year.—PRACTICE of over thirty years' standing in same hands in Northern district. Easily worked. Very accessible. Visits from 2s. 6d. Surgery from 1s. 6d. No appointments taken. Good corner house and stabling; rent £65. Premium one and a half years' purchase. Succession in twelve months or earlier if desired. (No. 3878.)

---

**Wales. — £400 a year. — On Coast.** Almost unopposed. Visits from 3s. 6d. Surgery 1s. 6d. Rent £35. No appointments. Agricultural locality. Fishing, shooting, yachting, &c. Premium £450. (No. 3875.)

---

**Lancashire. — £500 a year. — Old-**established PRACTICE in a Town of 30,000. Lowest fee 2s. 6d. No horse required. No appointments taken. Good family house, with large grounds; rent £75. Partnership introduction long as required. Premium only £500. Personally known. (No. 3864.)

---

**South Coast.—£250 a year.—Good-**class CONNEXION, with plenty of scope, in a favourite Resort. Good corner house; rent £60. Suit gentleman with small income wishing to partially retire. Price £300 (No. 3793.)

---

**£500 a year.—Northern City. Good** old-established PRACTICE, same hands nearly thirty years. Vendor retiring. Visits 3s. 6d. to 7s. Expenses small. No appointments taken. Good house. Rent £60. Great scope. Personally known. (No. 3848.)

---

**£600 a year (nearly).—Easy Terms.—** A Middle- and Working-class PRACTICE in Suburb of Manchester. Visits 2s. 6d. Surgery from 1s. 6d. No horse. Small house. Expenses small. Premium one year's purchase, £150 down, balance by monthly instalments. (No. 3833.)

---

**£600 a year. — Home County.—A** Middle-class PRACTICE in a residential Town within an hour of London for Disposal. Easily worked without horse or Assistant. Fees 2s. 6d. to 5s. Corner house; rent £60. Premium one and a quarter years' purchase. (No. 3822.)

---

**Lancashire.—£1150 a year.— Un**opposed Country PRACTICE on line of rail. Rapidly increasing country district. No opponent. Very safe money-making Practice. Clubs £150. One horse. Patients comprise mill hands, agricultural and colliery. Fees, 3s. 6d. to 5s. for visit and medicine. Surgery fee, 2s. Good modern house and garden; rent £55. Premium £1800. Personally investigated and recommended. (No. 3745.)

---

**£400 a year (nearly).—Residential** Northern Suburb. — General PRACTICE. Fees 2s. 6d. to 5s., some higher. Good double-fronted detached house, eight bedrooms. Good garden. Rent £75 or sell. No appointments taken. No horse. Light work. Premium £500. (No. 3826)

---

**£500 a year.—Increasing Practice** on outskirts of busy Manufacturing and residential Town, with excellent Hospital, in Midlands. Fees 2s. 6d. to 5s. Midwifery 21s. Small house; rent £25. Easily worked. No clubs taken. Partnership introduction. Premium £750. (No. 3751.)

***JUNE LIST of PARTNERSHIPS & PRACTICES post free on application.***

## MEDICAL PARTNERSHIP AND CONVEYANCING AGENCY.

1, ADAM-STREET, ADELPHI, W.C.

The SALE of PRACTICES and PARTNERSHIPS NEGOTIATED.

Trustworthy LOCUM TENENS and ASSISTANTS can be had at a few hours' notice. N.B.—No charge made to Purchasers.

---

Notice.—Mr. J. C. Needes, with an experience of over a quarter of a century, is in an exceptional position to give intending purchasers independent information concerning most PRACTICES and PARTNERSHIPS. Those investments in the following List marked with an asterisk are well known to him, having been purchased through his Office by the present Incumbents years ago, and in many other cases an introduction can be given to gentlemen who have taken charge of the Practices during the absence of the Incumbents.

GOOD-CLASS SUBURBAN PRACTICE, yielding about £1050 per annum. Very old established. Fees 2s. 6d. to 10s. 6d. Midwifery 1 to 10 guineas. Thirty cases yearly. Excellent family residence, very pleasantly situated, with garden, tennis lawn, &c., attached. Premium one and a half years' purchase.

RESIDENTIAL TOWN AND WATERING-PLACE ON SOUTH COAST.—A small PRACTICE, the cash receipts of which average over £300 per annum and capable of increase. Principally prescribing; very little dispensing. Visits 2s. 6d. to £1 1s. Midwifery 1 guinea upwards. Detached house (three reception rooms, five bedrooms, dressing-room, &c.), with fairly large garden; rent £65. Premium £400. Educational facilities, good society, &c.

MIDLANDS.—In an important Town of 200,000 inhabitants, within 100 miles of London, an old-established PRACTICE, the cash receipts of which last year were £617, including £250 from appointments. Work done on a cycle. Drug bill about £30 per annum. Corner residence, with ample accommodation for a family. An introduction to meet wishes of purchaser. Premium £850.

COUNTRY TOWN PRACTICE in the South of England, averaging £760 per annum, including clubs, &c., £200. Patients gentry, clergy. farmers, tradespeople, &c. Visits 2s. 6d. to 10s. 6d. Large family residence (eight bedrooms, dressing-room, &c.), with stabling and garden attached; rent £109 a year. Educational facilities. Three to six months' introduction given. Premium 900 guineas.

*LONDON.—Easy terms. An old-established PRACTICE in a main thoroughfare about a mile from Liverpool-street Station. Cash receipts for last two years average £673 per annum, about two-thirds of which is taken in ready money. Fifty cases of Midwifery, fees 1 to 2 guineas. Expenses very light, drug bill under £14, rent of house £55. Premium £550, £350 down and balance by instalments. Clubs yield about £50 per annum.

IN A PLEASANT SEMI-RURAL DISTRICT (rapidly increasing) ten miles from London, an easily worked PRACTICE, held over twenty years by the present incumbent. The cash receipts for the last three years average £651 per annum. No clubs or appointments. Practice worked without a conveyance. About forty cases of Midwifery yearly. Detached modern residence standing in its own grounds and containing three sitting-rooms, six bedrooms, bathroom, &c. Premium one and a half years' purchase. Ample scope for increase.

PARTNERSHIP.—WESTERN AUSTRALIA. Easy terms. A suitable Partner required in a Practice worth £1700 to £1800 a year, with ample scope for increase. Appointments produce over £500 per annum. No dispensing, no long journeys, expenses light. Ordinary visits £1 1s., consultations with another practitioner £2 2s., Midwifery £10 10s., operations £5 5s. to £25. Price for Third Share (to commence with) £750, £250 down and balance by instalments. This Partnership can be recommended.

A PARTNERSHIP INTRODUCTION of twelve months will be given to a Practice in a Hospital Town within 80 miles of London. The receipts for the past four years average £1368 per annum. Working expenses very light, amounting to only £120 a year. Visiting fees 2s. 6d. to 6s. Well-situated house (five bedrooms, bathroom, &c.); rent £50. Vendor is on the hospital staff, and is morally certain of transferring this appointment to a suitable successor.

SEASIDE.—An old-established partly Non-dispensing PRACTICE in a Seaside and Rssidential Town within 100 miles of London. The cash receipts for the past three years average £1000 to £1100 a year, including transferable appointments. Held by Vendor ten years. Fees good. Thirty-five to forty cases of Midwifery yearly. Large well-built family residence (eight bedrooms, &c.) which can be leased or purchased. Six months' introduction given. Social and educational advantages.

**Apply to J. C. NEEDES, 1, Adam-street, Adelphi. W.C.**

---

Wanted, a Country Practice (unopposed preferred) of at least £500 a year in the South or West of England or not more than seventy miles North of London. The house must possess sufficient accommodation for a family and have a garden attached. A liberal price paid and immediate arrangements entered into.—Particulars in confidence to J. C. Needes, 1, Adam-street, Adelphi, W.C.

---

Locum Tenens and Temporary ASSISTANTS.—Practitioners requiring the above can immediately obtain thoroughly reliable qualified Gentlemen upon application to 1, Adam-street, Adelphi, W.C. Every Gentleman engaged by the Office in either of the above capacities is personally known to Mr. J. C. Needes. An office fee of half a guinea is paid by the Principal.

**Telegrams—"Acquirement, London."**
**Telephone—No. "1743 Central."**

---

## Messrs. H. Wilson and Son,

26, CHARLES STREET, ST. JAMES'S SQUARE, S.W.
(HAYMARKET).

ESTABLISHED 1845.

MEDICAL REFEREES, VALUERS, AND ARBITRATORS.
LOCUM TENENS AND ASSISTANTS PROVIDED.

Telegrams: "Medicemur. London." Telephone: 11632 Central.

---

## REYNOLDS & BRANSON, LTD. (ESTAB. 1816.)

*Medical Transfer Agents,*

**LEEDS.**

*Telegrams:* "REYNOLDS, LEEDS."

1. Good-class but Small Practice with excellent convenient house in healthy and residential suburb of large prosperous West Riding City. Price £2500, including freehold of residence, surgery, and adjacent house, the latter sublet for £35 per annum. Residence and surgery may be rented, if preferred, at £65 per annum.

2. Cheshire.—Country Town PRACTICE, cash receipts £534, including appointments £380. Rent £46 per annum. £350 premium.

3. Old-established Country Practice in picturesque locality one mile from first-class golf links. West Riding Yorks. Low working expenses. Premium about one year's returns, £550.

4. Progressive Country Practice in pleasant locality, East Yorks. Working expenses about £160. Would suit bachelor. Cash returns about £500. Premium £600, £400 down and £200 in twelve months.

5. Yorkshire. — Country Practice doing £500 cash. Picturesque country. Good house and garden; rent £27 10s. Premium £450.

6. West Riding, Yorks. — Sound Middle and better class. Large convenient house; rent £40. Average receipts £578; one appointment, transferable. Premium one year's purchase.

7. Prosperous Town, West Riding.—Old-established PRACTICE, doing about £2000. Large, well-situated house. Practice could be easily transferred. Premium about £1500.

8. Lancs.—Prosperous Town. Receipts about £1000. Book debts value £1500 extra (optional). Premium £1000.

9. West Riding.— Cash Practice. Cash receipts about £850. Good house, garden. Premium £850, two-thirds down and the balance by half-yearly instalments

10. Yorks.—Country Practice, unopposed. Returns about £300. Cash purchase, £250.

11. Death Vacancy.—West Riding Town.—Old-established. Convenient house, garden; rent £20. Doing about £500 cash. One appointment £70. Could be increased by active man. Scope for surgery work.

12. Wanted.—Country Practice returning about £1000. Please state particulars to X., care of Reynolds & Branson, Ltd., Leeds.

Also several Town PRACTICES for Sale, about £500 per annum.
PARTICULARS ON APPLICATION.

---

Gentlemen desirous of purchasing may enter their names on our Register free of charge. Particulars of Practices will be sent from time to time.

---

Vacancies for reliable Locums.

---

## THE MANCHESTER MEDICAL ASSOCIATION.

The oldest Agency in Manchester. 8, KING STREET.

*Telegraphic Address:* "STUDENT, MANCHESTER."

TRANSFERS and PARTNERSHIPS arranged, and Investigations, Valuations, &c., undertaken. ASSISTANTS and LOCUM TENENS SUPPLIED. PRACTICES for Sale. Particulars on application.

# THE MEDICAL AGENCY,

WATERGATE HOUSE,
15, York Buildings, Adelphi, W.C.

Consulting Director: C. H. WELLS.
Managing Director: J. A. REASIDE.

Telegrams: "Tubercle, London." Telephone: Gerrard, 8954.

THE ABOVE AGENCY UNDERTAKES the TRANSFER of PRACTICES, the INTRODUCTION of PARTNERS, INVESTIGATIONS for PURCHASERS, VALUATIONS, NEGOTIATION of TERMS, the SUPPLY of LOCUM TENENS and ASSISTANTS, and MEDICAL ACCOUNTANCY.

1. WEST END.—Old-established, high-class Family PRACTICE of £2000 p.a. Full introduction. Premium £3000.
2. NOTTS.—Sound and compact Country PRACTICE. Receipts 1906, £540, increasing. Desirable house. with attractive gardens and grounds; rent £25. Premium £600.
3. YORKS.—In large first class Town. Rapidly Increasing Middle- and Working-class PRACTICE. Income 1906, £1210. No clubs. Moderate expenses. Excellent house. Premium £1500.
4. FAVOURITE NORTHERN RESIDENTIAL SUBURB.—General PRACTICE of about £550 p.a. Good corner house. Ample scope. Premium one and a half years' purchase.
5. YORKS.—PLEASANT COUNTRY TOWN.—Young well-qualified PARTNER required in Practice of £1200, capable of being doubled. One-fourth or One-third Share would be sold after preliminary Assistantship.
6. NORTH OF ENGLAND.—PARTNERSHIP, up to Half Share, in an increasing Practice in a good town. Present receipts between £1200 and £1300 p.a., should increase to £2000. Premium two years' purchase, with guarantee of income.
7. SOUTH COAST.—IMPORTANT CENTRE.—Small PRACTICE, with excellent prospects, to a young and well-qualified gentleman. Comfortable house. Premium £425.
8. NORTH LONDON.—Desirable outlying suburb. Sound Middle-class PRACTICE. Average receipts £621 p.a. Good house, nice garden. scope. One and a half years' purchase.
9. CAPE COLONY.—In important and desirable Coast Town. Good mixed-class PRACTICE, non dispensing. Limited to white community. Receipts average £950 p.a. Good house. Very moderate premium for prompt sale.

ASSISTANTSHIPS VACANT.—Hampshire, country; out-door; possible view. London, S.E., in-door, £150 p.a. Shropshire, out-door, £180 p.a., with rooms. Hampshire, in-door, £130 p.a.; light work; cyclist. South Devon, out-door, £160 to £170 p.a., with rooms; light work; cyclist.

WANTED.—(1) In Country or Country Town, PRACTICE or Partnership in W., S.W., England or Wales, preferably with scope for surgery. Premium £600 to £1000. (2) Small PRACTICE or Nucleus in Country Town; large house and educational facilities for girls essential. Premium up to £700. (3) PRACTICE possessing scope suitable for two experienced practitioners.

---

**Physician's House to Let, Marble** Arch (Upper Berkeley-street). Exceptionally cheap; moderate size. Suitable for small family, physician, or surgeon. Three rooms on ground floor.—Address, No. 754, THE LANCET Office, 423, Strand, W.C.

---

**Wimpole-street. — First-floor Flat,** suitable for Professional Man, to be Let, unfurnished, with early possession. Three bedrooms, two reception-rooms, bathroom, kitchen, &c. Passenger and goods lift.—Apply to Elliott, Son & Boyton, 6, Vere-street. W.

---

**Cavendish-square.—An exceptional** RESIDENTIAL FLAT to be Let on Lease, particularly well fitted with oak panelling, and containing nine rooms and hall; delightfully situate, with a full view of the Square; most suitable for a doctor. —For particulars apply to Messrs. Frank Newman and Blunt, Surveyors, 34, Savile-row, W.

---

**To Doctors.—Flat to be Let in most** convenient position on main road, being opposite Olympia and surrounded by over 400 good-class flats. Situate on entrance floor, and contains four bedrooms, two reception-rooms, bathroom, kitchen, and offices. Rent only £100 per annum on agreement with option of lease.—For particulars, apply Estate Office, Glyn Mansions, Addison Bridge, W.

---

**Sanatorium. — Dartmoor, Devon.** 1200 feet above the sea. Freehold ESTATE of 360 acres for Sale. Large residence and buildings. All admirably adapted in every way for the establishment of an up-to-date Sanatorium. Only five miles from station.—Particulars of A. C. Loveys & Son, Estate Offices, Moretonhampstead.

---

SALE OF VALUABLE FREEHOLD LAND, FRONTING LEYLAND-ROAD, SOUTHPORT.

**To be Sold by Private Contract, a** PLOT of LAND in Leyland-road, Southport. containing 2375 square yards or thereabouts. The frontage to Leyland road is 42 yards.

The Land is Freehold of inheritance and free from chief rent.

It is in a very good situation on the sunny side of Leyland-road and only five minutes' walk from the Promenade.

The Plot is suitable for a good hydropathic establishment.

Further particulars may be obtained from Messrs. William Bottomley and Son, Solicitors, 120, Stamford-street, Ashton-under-Lyne; 78, King-street, Manchester.

---

MEDICAL CONVEYANCING AGENCY (ESTAB. 1860).
CLOCK HOUSE, ARUNDEL-STREET, STRAND, W.C. (ONLY).

**Mr. Herbert Needes (who has had** over 25 years' experience in this well-known Agency) negotiates the TRANSFER of PRACTICES and PARTNERSHIPS and the adjustment of all matters connected therewith. No charge to PURCHASERS.

ASSISTANT MANAGER—Mr. F. C. NEEDES, B.A.

TO PRINCIPALS.—Reliable LOCUM TENENS available at the shortest notice. Office fee, 10s. 6d. ASSISTANTS provided free.

Telegrams: "CURANDUS, LONDON."
Telephone: 4791 (GERRARD).

1. SUFFOLK.—Unopposed PRACTICE of over £400 a year for Sale at £600. Transferable union and clubs of £140. One horse required only in winter. Good prospect of further increase. Very convenient house, with stabling, well-stocked garden, &c.; rent £40. Personally recommended by Mr. Needes.
2. FOR SALE, a LEASEHOLD and Good-class PRACTICE of £750 a year in a most charming elevated suburb six miles from Charing Cross The house was specially built for a doctor and commands extensive views, with gardens, stabling, &c. Suitable for a family man with means. Held by Vendor 20 years.
3. UNOPPOSED COUNTRY PRACTICE of about £500 a year in a beautiful district in the West of England. Transferable union and clubs of £200. Excellent scope. Hunting and fishing. Very pretty residence with gardens, stabling, and eight acres of land. Premium £800.
4. YORKS.—Old-established PRIVATE PRACTICE in Hospital Town. Receipts for last twelve months over £1000. No assistant required. Suit man fond of surgery. Convenient well-built residence, with stabling, &c.; rent £120. Premium, with six months introduction, £1300.
5. NORTH-EASTERN SUBURB.—Well-established PRACTICE in pleasant middle- and working-class locality. Receipts 1906 over £900, including appointments. Fees good. Handsome private residence within easy access of the Forest; rent £67. Premium, with an efficient introduction, £1100.
6. WORCESTERSHIRE.—Middle-class PRACTICE in flourishing Hospital Town. Average receipts over £700, including £200 from insurances and clubs. Working expenses small. Good scope. Convenient family residence, with garden and stabling rent £50. Premium £850.
7. PARTNERSHIP in a working-class River-Suburban Practice. Share worth about £300. Good scope. Rent of premises £38. Premium £300.
8. PRIVATE CONVALESCENT HOME on South Coast for Sale. Winter and Summer season. Receipts last year over £800. Profits good. Price, to include furniture, &c., £550.
9. GOOD MIDDLE-CLASS PRACTICE of over £900 a year within easy reach of the City and West-End. Fees 3s. 6d. to 21s. No Midwifery. Convenient corner residence in main road; rent £100. Vendor, who has held the Practice eighteen years, will accept a premium of 1000 guineas.
10. ATTRACTIVE SUBURB, N.—Mixed PRACTICE in residential healthy district. Income £400 and increasing. Charming open locality. Rent £60. Price £320.
11. PARTNERSHIP IN CITY PRACTICE.—For Sale, the FOURTH SHARE of a very old-established Practice returning during the past twelve months over £2500, including good appointments of £300. Preference given to a man fond of surgery, for which there is ample opportunity. Premium two years' purchase.

---

**Exceptional Opportunity for Medical** Practitioner. No Premium. RESIDENCE to be Let or Sold in thickly populated district, S.E. Proprietor will build necessary rooms for Dispensary.—S. J. Aldridge & Co., 56, Cannon-street, E.C.

---

**Dentists.—Exceptional opportunity** to establish a High-class Dental Practice.—To be Let, the FIRST FLOOR in an imposing Block of Flats situated in main thoroughfare of an important South-East residential Suburb. The ground floor is occupied by an old-established medical practitioner. No qualified dentist near. Flat has all modern requisites for residence and sufficient room for professional purposes. Rent £70, inclusive of all rates. Has only to be seen to realise possibilities.—Apply, Geen, 155, High-street, Lewisham, S.E.

---

**Nursing Home in Belgravia to be** Sold. Excellent accommodation, including nine rooms for patients, also Staff rooms and operating theatre. Lease about twenty-four years. Ground rent only £14 per annum. Price £900. Furniture, operating table, and all latest appliances at valuation.—Glasier & Sons, Surveyors, 7, St. James's-street, S.W.

---

**To Doctors. — House, with three** entrances, for Sale, in main road (very suitable for a Doctor), containing drawing-room, 21 ft., dining-room, 18 ft., morning-room with front door, suitable for a surgery; kitchen on ground floor; six large bedrooms, bathroom (h. and c), &c. Fair well-stocked garden. Freehold £1275. Cost more. £725 cash only required. Balance can remain at 4¼ per cent. Viewed by appointment.—Avranches, 17, Addiscombe-road, Croydon.

---

**To Medical Men and Others.—For** Sale, as a going concern, the London Branch of well-established ELECTRO-MEDICAL TREATMENT BUSINESS in the West-End, supported by many leading professional men, consisting of Hot Air "Patented System," High-frequency Vibrating Massage, with all appliances, furniture, and property, at present conducted by Manager, two nurses, and male attendant. Suitable opening for young doctor or surgeon.—Apply, A. E. G., 2, Staple Inn, Holborn, London, W.C.

**Chemists or Doctor requiring** SURGERY.—A good Opening for such premises, situated main road, busy thoroughfare. Front would be altered or shop put in to suit requirements of incoming tenant.—Apply, Hyman, 135, Caledonian-road, King's Cross.

**Wanted, in Harley-street or neighbourhood,** the Use of CONSULTING ROOM and attendance on Wednesday afternoons. Brass plate.—Reply, stating terms, to No. 100, THE LANCET Office, 423, Strand, W.C.

**Consulting and Residential Rooms** to Let, New Cavendish-street, W. Excellent Ground Floor and Basement comprising six rooms, kitchen, and bath. Recently vacated by Doctor. Rent low to approved tenant.—Apply, Robins, Gore & Mercer, 205, Wardour-street, Oxford-street, W.

**Consulting-room to Let, a few doors** from Cavendish-square, with light, attendance, &c.—15, Harley-street.

**Ground-floor Consulting-room to** Let in Welbeck-street; handsome, exceptionally well lighted, with use of Waiting-room, or separate room if required. Terms moderate and inclusive light, attendance, and telephone.—Address, No. 112, THE LANCET Office, 423, Strand, W.C.

**Wanted, in West-End district, Use** of CONSULTING-ROOM and WAITING-ROOM, Electric light, Attendance, and use of Telephone. Terms must be strictly moderate.—Address, No. 107, THE LANCET Office, 423, Strand, W.C.

**Wanted, Practice, with House,** seven bed-, three reception-rooms, surgery, and good garden.—Beta, 12, Nelson-crescent, Ramsgate, Kent.

**Genuine Practice or Partnership** required in Yorkshire or Lancashire. No agents.—Address, No. 786, THE LANCET Office, 423, Strand, W.C.

**Wanted, early in 1908, unopposed** Country PRACTICE, S. or S.W. County. £500 to £700 a year. Premium moderate. Some hunting.—Address, No. 729, THE LANCET Office, 423, Strand, W.C.

**Wanted, small Practice in pleasant** Town or Residential Suburb with educational advantages. If Vendor's house is small another containing at least eight bedrooms, with matured garden, must be procurable.—Address, No. 649, THE LANCET Office, 423, Strand, London, W.C.

**A Partnership is offered to an** energetic and capable Man only in a large, remunerative, and private Practice in North o England. Must be hard working, English or Scotch, and under thirty-five. Very exceptional opening. Succession in few years.—Address, No. 764, THE LANCET Office, 423, Strand, W.C.

**Nucleus for immediate Disposal,** situate on busy high road, N. New neighbourhood opening opposite. Good house; entrance to surgery on street, very prominent. Easy terms.—M., 33, St. Bride-street, E.C.

**For immediate Disposal.—Mixed** Country PRACTICE. Average cash receipts for past three years £450. Double-fronted house; rent £30 per annum. One horse required in winter. Good fishing, boating, shooting, and coursing. Premium £500 or nearest offer. Good reasons for leaving. Three months' introduction. No agents.—Address, No. 689, THE LANCET Office, 423, Strand, W.C.

**For Disposal, Resident City Practice,** established over sixty years, corner house in main thoroughfare, within ten minutes' walk of Mansion House, at exceptionally favourable terms. Premium £300. Income £340; appointments £80. Fees 2s. 6d. to 7s. 6d.; confinements, twelve a year, at £2 2s., easily increased at somewhat lower fees. Excellent reason for disposal. Full introduction given.—Address, No. 101, THE LANCET Office, 423, Strand, W.C.

**Sound Middle-class Suburban** General PRACTICE for Sale. In Vendor's hands for many years and easily transferable. Good house and garden. Income about £400 with exceptional facilities for increase. Three or six months' introduction. No agents.—Address, No. 568, THE LANCET Office, 423, Strand, W.C.

**West-End Practice for Sale.—** Receipts for the first year totalled £130. Good neighbourhood. Plenty of scope for increase. Good reasons for selling. A bargain. Fees ½ to 2 guineas; Midwifery, 3 guineas and upwards.—Particulars, apply to Le Brasseur & Oakley, 40, Carey-street, Lincoln's Inn, W.C.

**To Purchasers of Practices.—Before** concluding arrangements the books should be examined and the numerous necessary inquiries as to bonâ fides made by a Medical Accountant specially versed in such matters. With 30 years experience and special facilities for making such inquiries Mr. Percival Turner will be happy to act for purchasers at short notice. Terms and full particulars on application.—4, Adam-street, Strand, London, W.C.

**For Sale, excellent Corner House** in residential district of prosperous Manufacturing Town. Small but increasing Practice. No clubs.—Address, No. 108, THE LANCET Office, 423, Strand, W.C.

**Near Cardiff.—For Sale, excellent** NUCLEUS, all cash. Easy. Inexpensive. Very little night work. Works, plants, &c., largest and most up-to-date. Fresh 1000 men about to be employed. Great and rapid developments.—Address, No. 102, THE LANCET Office, 423, Strand, W.C.

**Death Vacancy.—Cash Practice in** N.W. district. Average yearly receipts for last three years £155. Visiting fees 1s. 6d. to 2s. 6d. Confinements (about seventeen a year) 16s. to £1 1s. Rent £55. Also an appointment. Excellent prospects of increasing income for a young man. Premium about one year's purchase.—Address, No. 104, THE LANCET Office, 423, Strand, W.C.

**For Disposal, old-established Practice** in good-class neighbourhood, North London. Income £450 per annum. Premium one and a half years' purchase. Every investigation courted. Introduction as required.—Address, No. 106, THE LANCET Office, 423, Strand, W.C.

**For immediate Disposal, small** Working class PRACTICE in outlying Suburb. Value about £300, including appointments value about £45. Small house; rent £38. Only other expense 5s. 6d. a week for Branch Surgery. Moderate premium.—Apply, in first instance by letter, to Q. S., 143, Oakhill-road, East Putney, S.W.

**For Disposal, sound rapidly increasing** Middle- and Working-class PRACTICE in one of the best Yorkshire manufacturing towns. Present value £1300 per annum. No clubs. Excellent house. Unlimited scope. Premium £1500. No agents.—Address, No. 118, THE LANCET Office, 423, Strand, W.C.

**Excellent Practice for Sale in** Lancs. Town, doing at rate of £700 per annum, Vendor going into partnership elsewhere. Middle- and good working-class patients. Great scope for increase. Good house, with waiting- and consulting-rooms, dining-rooms, &c.; kitchens, three bedrooms, bathroom, w.c., &c. Premium for Practice and house £800.—Manchester Medical Association, 8, King-street.

**The Paradise of the Pacific.—A** leading PRACTICE, average receipts £2300 per year. Opposition nominal. Present incumbent, F.R.C.S., retiring from general practice. Six months' Partnership Introduction. Established sixteen years; eight years in vendor's hands. Price one year's purchase. A Doctor thoroughly familiar with the above practice at present on a visit to England. This is a unique opportunity of obtaining an ideal practice in a delightful climate. Purchaser must be a competent Surgeon. Highest references are offered and required. Applications will only be entertained from bonâ fide purchasers. No agents.—Address, No. 744, THE LANCET Office, 423, Strand, W.C.

**West End Practice, £2000 a year.—** Old-established high-class CONNEXION in best part for disposal to suitable experienced man with necessary means. Fees from 7s. 6d. upwards. Good house. Partnership introduction. Premium £3000.—Address, No. 121, THE LANCET Office, 423, Strand, W.C.

**For Sale. — An old-established** PRACTICE in main road, S.W., near South Kensington. Fees good. Few confinements. No clubs. Easily worked. Income about £600. Small convenient house, bath, electric light, small garden. Valuable direct lease, low rent. Short but efficient introduction.—Applicants must kindly enclose banker's or solicitor's reference.—Address, No. 122, THE LANCET Office, 423, Strand, W.C.

**Notting Hill Gate.—Partnership** wanted by a gentleman with capital and connexion and prepared to purchase a Share worth £600 a year or more within half a mile of above.—Address, M.B., &c., care of Mr. Percival Turner, 4, Adam-street, Adelphi, London, W.C.

**Partnership. — Resident Patients,** Private Practice, &c.—RESIDENT PARTNER wanted in rapidly growing residential Suburb, to assist in conduct of Home for Patients and also be at liberty to carry on private practice on his own account. Returns from Home at present over £800 a year. Incomer must be single and not too young.—Apply to Mr. Percival Turner, 4, Adam-street, Adelphi, W.C.

# APPOINTMENTS VACANT.

## WARNING NOTICE.

Medical practitioners are requested NOT to apply for appointments in connexion with Clubs and other forms of Contract Practice in any of the towns and districts named in the following table, or for the Poor-Law appointment named, without first communicating with the medical gentlemen whose names are appended.

## CONTRACT PRACTICE APPOINTMENTS.

### ENGLAND.

**BARNSLEY.**—Dr. J. H. Fryer, 2, Eastgate, Barnsley.

**BARROW-IN-FURNESS** *(regarding special appointments connected with the National Deposit Friendly Society)*.—F. E. Daniel, Esq., 141, Abbey-road, Barrow-in-Furness.

**CHESTERFIELD.**—W. St. A. St. John, Esq., 16, Duffield-road, Derby.

**COLCHESTER** *(appointment to the Liverpool Victoria Legal Friendly Society)*.—Dr. Leigh Day, Head-street, Colchester.

**COVENTRY** *(as regards Dispensary Appointments)*.—Dr. Milner Moore, The Quadrant, Coventry.

**EAST HETTON.**—Dr. J. H. Hunter, Havelock-street, South Shields.

**HALSTEAD, EARLS COLNE, and HEDINGHAM** *(appointments to Friendly Societies)*.—Dr. Leigh Day, Head-street, Colchester.

**LOWESTOFT.**—Dr. W. Tyson, The Beeches, Lowestoft.

**MACCLESFIELD.**—B. W. Housman, Esq., F.R.C.S., Lygon House, Cale Green, Stockport.

**NORTHFLEET, SWANSCOMBE, GREENHITHE, AND GRAVESEND.**—Dr. A. S. Greenway, Belvedere, Kent.

**NORTHUMBERLAND AND DURHAM** *(as regards appointments in connexion with collieries, bodies of miners, or medical aid associations)*.—Dr. J. H. Hunter, Havelock-st., South Shields.

**PETWORTH.**—L. M. Snow, Esq., The Chantry, Horsham.

**RUSHOLME, MANCHESTER.**—Dr. Milson R. Rhodes, Bridge House, Wilmslow-road, Didsbury, Manchester.

**SHEFFIELD.**—Dr. A. C. Turner, 287, Glossop-road, Sheffield.

**SOUTHAMPTON, BITTERNE, and neighbourhood.**—Dr. A. A. MacKeith, Howard-road, Southampton.

**STOCKPORT.**—B. W. Housman, Esq, F.R.C.S., "Lygon House," Cale Green, Stockport.

**TOW LAW and WOLSINGHAM.**—Dr. J. H. Hunter, Havelock-street, South Shields.

**UPPER and LOWER GORNAL, GORNAL WOOD, STAFFS.**—Dr. J. A. Codd, 57, Darlington-street, Wolverhampton.

**WORCESTER.**—Dr. Mabyn Read, 42, Foregate-street, Worcester.

### WALES.

**ABERAMAN, GLAMORGAN.**—C. J. Weichert, Esq., Pen-y-graig, Pontypridd.

**ABERTYSSWG.**—W. J. Greer, Esq.. F.R.C.S.I., 19, Gold Tops, Newport, Mon.

**AMMANFORD, CARMARTHENSHIRE.**—Dr. J. E. P. Davies, Castle Hill, Llanelly.

**BLAENAVON, MONMOUTHSHIRE.**—W. J. Greer, Esq., F.R.C.S.I., 19, Gold Tops, Newport, Mon.

**CWMBACH, ABERDARE.**—C. J. Weichert, Esq., Penygraig, Pontypridd.

**EBBW VALE, MONMOUTH.**—W. J. Greer, Esq., F.R.C.S.I., 19, Gold Tops, Newport, Mon.

### SCOTLAND.

**MOTHERWELL, LANARKSHIRE.**—Dr. J. Livingstone Loudon, Linnwood, Hamilton, N.B.

### IRELAND.

**CORK.**—Dr. P. G. Lee, St. Patrick's Hill, Cork, Ireland.

### COLONIAL.

**AUCKLAND, NEW ZEALAND.**—Dr. Tracy R. Inglis, Ponsonby road, Auckland, New Zealand.

**ORANGE RIVER COLONY, SOUTH AFRICA.**—Dr. C. Thiselton Urquhart, Box 308, Bloemfontein.

**PRETORIA, SOUTH AFRICA.**—Dr. W. B. Woodhouse, Box 708, Pretoria, South Africa.

**YOUNG AND MARENGO (NEW SOUTH WALES).**—W. H. Crago, Esq., 121, Bathurst-street, Sydney.

## POOR-LAW APPOINTMENT.

### ENGLAND.

**HALIFAX.**—Dr. D. J. Macaulay, Benbecula, Halifax.

**WIMBORNE, DORSET.**—Dr. E. Kaye Le Fleming, Wimborne, Dorset.

## POST OFFICE APPOINTMENT.

**NORTH TOTTENHAM.**—Dr. H. F. Staunton, 88, High-road, Wood Green, N.

Locum Tenens.—No fee to Principals. Mr. Percival Turner has a large staff of trustworthy Gentlemen acting as Locum Tenentes and will be happy to send them as required at short notice on application. Fees from £4 4s. a week.—Address, 4, Adam-street, Adelphi, London, W.C. Telegrams, "Epsomian, London." Telephone, 3399 Central.

---

Occasional Locum.—A well-qualified and experienced Practitioner, living in a very accessible Suburb, would Assist City or Suburban practitioner in spare time. Moderate terms.—Address, No. 113, THE LANCET Office, 423. Strand, W.C

---

Locum Tenens in August.—Hospitality offered to Medical Man and Wife. Work light. Beautiful country.—Address. No 111, THE LANCET Office. 423. Strand. W.C.

---

Locum Tenentship wanted by an experienced Man with good testimonials and references. Disengaged July 16th.—Address, Locum, care of Dr. De Gruyther, 621, Seven Sisters-road, South Tottenham, N.

---

Day, Morning, Evening, Week-end, or full Locum Tenentship wanted by trebly-qualified Graduate. Experienced in lunacy. Recent references.—J. H., 18, St. Thomas's-road, N.

---

Locum Tenens, doubly qualified, Disengaged July 9th. Village or Coast preferred. — Terms moderate.—Locum, Ogwen Lake Cottage, Nantfrancon Pass, Bethesda, N. Wales.

---

Locum, Disengaged. Experienced qualified man, accustomed to all kinds of Practice, would like to undertake Temporary Duty. Strictly temperate.—Address, No. 109, THE LANCET Office, 423, Strand. W.C.

---

Locum Tenens.—Messrs. Peacock and Hadley can supply reliable, competent, and suitable Gentlemen as Locum Tenens to take charge of Town or Country Practices upon short notice if necessary. Usual terms £4 4s. per week and travelling expenses.—Address, 19, Craven-street, Strand, W.C. Telephone: 1112 Central. Telegrams: Herbaria, London.

---

Locum Tenens wanted with view to purchase Practice in West Riding Manufacturing Town. Usual bond required.—Address, No. 105, THE LANCET Office, 423, Strand, W.C.

---

Hospitality to wife and self offered to Gentleman willing to act as LOCUM TENENS in light Country Practice within easy distance of Oxford during August.—Address, A. Vere Oakley, The Grove, Seston, Devon.

---

Wanted immediately, Locum or otherwise by active man over sixty, whose gentlemanly appearance, manner, skill, and address has long won for him the confidence of all classes. Moderate terms.—Address, B. M., 1, Kelsey-square, Beckenham, Kent.

---

Wanted, Gentleman to take Charge of Surgery nine to one and seven to nine daily for about twelve days, commencing July 11th.—Write, with reference, and stating terms, Dr. J., 62, Church-street, Edgware road.

---

Locum Tenens supplied by the Scholastic, Clerical, and Medical Association, Limited, 22, Craven-street, Trafalgar-square, W.C. No Locum Tenens is recommended unless personally known or until direct inquiries have been made as to his character and competence.—Telegraphic address: "Triform," London. Telephone: No. 1854 Gerrard.

---

M.R.C.S., L.R.C.P., reading for exam., desires Whole or Part-time ASSISTANTSHIP in or near London. Reliable. Excellent testimonials. Some experience. Abstainer.—Address, No. 117. THE LANCET Office, 423, Strand, W.C.

---

Out-door Assistantship or Management of BRANCH wanted in Country Practice, within about eighty miles of London, by experienced Man, twenty-eight. Good anæsthetist and accoucheur. Ride drive, and cycle. Place with some prospects preferred.—Address, No. 115, THE LANCET Office, 423, Strand, W.C.

---

Wanted, Assistantship, with view to PARTNERSHIP, in good-class Practice in or near Liverpool, by Graduate of Edinburgh and Conjoint London. Has held hospital appointments and several years in private practice.—Address, No. 783, THE LANCET Office, 423, Strand, W.C.

---

Assistants wanted.—(1) Cheshire, £200, and rooms; (2) London, N.E., £140, in-; (3) Norfolk. £132, in-; (4) Cardiff, £130, in-; (5) Somerset, £200, out-, an unmarried Assistant wanted; (6) Herefordshire, £160, in-; (7) Glam., £200, out-; (8) Essex, £200, out-; (9) Cheshire, £150, in.—Apply to the Scholastic, Clerical, and Medical Assn., Ltd., 22, Craven-street, Trafalgar-square, W.C

**Wanted, experienced in-door Assistant**, able to drive and cycle, on August 1st. £11 per month.—Apply, Dr. Hamill, Burnham Market, Norfolk.

---

**Wanted, a Medical Man of experience** in the use of Mineral Waters to advise in the Introduction into England of the "Virchow-Quelle" of Kiedrich, near Wiesbaden.

The Virchow is an isotonic natural mineral water, and is nearly identical with the "Wiesbadener Kochbrunnen." It differs only in temperature (Kochbrunnen 65, Virchow 24 Celsius) and in the amount of chloride of lithia (Kochbrunnen 23, Virchow 55 milligrammes).

The Virchow spring is as clear as crystal, and its capacity of supply is 170,000 litres a day—equal to 225,000 bottles.

The well-known effect of Wiesbaden in cases of gout, arterio-sclerosis, gastric and intestinal complaints, and obesity are claimed to the full extent for the Virchow.

It is desired to introduce this ideal water into England, and to secure the services of a Medical Man with regard to all steps to be taken.

Apply to the Virchow-Quelle, Kiedrich, near Wiesbaden.

---

**Wanted immediately, a fully qualified SURGEON** whose duties will be to examine and report on all cases of accidents to workmen with reference to compensation claims. No other duties. Salary £500 per annum.—Applications, stating age, qualifications, and experience, to be addressed to T. Griffiths, Cymmer Collieries, Porth, Rhondda Valley.

---

**Dispensers supplied for Locum or** Permanent appointments.—No fee to Principals.—We have a number of thoroughly reliable Dispensers (either sex) desiring engagements. References thoroughly investigated before recommendation. Dispensers requiring appointments should call if possible.—Aked & Aked, 43, Warwick-street, Regent-street, W.

---

**Postcards.—P.O.P., 2s. 6d.; Gas-**Light, 3s. 6d.; Self Toning, 3s. 6d. 100. Post free. Try a sample packet, six stamps. P.O.P. sample tube, 1s. gross, cabt. 3s. 6d. ½-plate sets Triple Extension, 50s.; ¼-plate Hand Cameras, 5s. and 7s. 6d. Developing Kodak Films, 6d. six expos. Enquiries solicited.—MARTIN, Chemist, Southampton.

---

**P. & O. Surgeon's Uniform;** almost complete; practically new.—Address, No. 110, THE LANCET Office, 423, Strand, W.C.

---

## PAPER. SPECIAL OFFER.

*WHY PAY HIGH PRICES?*

3 Reams White Demy, 17½ × 22½, 480 Sheets, 3/6 per Ream; or 6 ditto ditto cut free of charge to any sizes at 3/6 per Ream. Both sent carriage paid upon receipt Cheque or P.O.

Sample Ream, 3/6, 480 Sheets. Cut to size, 4/-.

HANCOCK'S Paper Factory, Hanover St., Shudehill, Manchester.

---

### Received too late for Classification.

## GOATS' MILK

FOR INFANT FEEDING

(vide THE LANCET, May 25th, 1907)

Forwarded on receipt of letters or telegram direct from the Farm.

Mrs. J. H. Verini, Hope Villa, Birkbeck-road, Beckenham.

---

## CARBONIC ACID & OXYGEN BATHS

WITH THE

**AEOSAN BATH ATTACHMENT**

NON-CORROSIVE

ECONOMICAL

FITS EVERY BATH

Patent No. 24195.

WRITE FOR BOOKLET A TO THE

AEOSAN CO.,
102, CHARLOTTE STREET,
BIRMINGHAM.

RESPONSIBLE AGENTS WANTED.

---

# THE LANCET

## FOREIGN & COLONIAL EDITION

**An Edition printed on THIN PAPER can be obtained from any Bookseller or Newsvendor, or from the following Special Agents, who can also supply the ordinary Thick Paper Edition:—**

EDINBURGH—J. THIN, Bookseller, South Bridge.
,, YOUNG J. PENTLAND, 11, Teviot-place.
DUBLIN—FANNIN & CO., Grafton-street.
ADELAIDE—GEORGE ROBERTSON & CO.
,, W. C. RIGBY.
ARGENTINA—F. BURGIS, 541, Cangallo, Buenos Aires.
AUCKLAND, N.Z.—GORDON & GOTCH, Prop., Ltd.
BALTIMORE, U.S.A.—KELLY, PIET, & CO.
BERLIN—SPEYER & PETERS.
,, S. KARGER.
BLOEMFONTEIN—CENTRAL NEWS AGENCY, Ltd.
BOMBAY—W. THACKER & CO.
BRISBANE—GEORGE ROBERTSON & CO.
,, GORDON & GOTCH.
CAIRO—F. DIEMER.
CALCUTTA—THACKER, SPINK, & CO.
,, W. NEWMAN & CO., Dalhousie-square
CAPETOWN—CENTRAL NEWS AGENCY, Ltd.
CHRISTCHURCH, N.Z.—A. SIMPSON.
,, ,, GORDON & GOTCH.
DUNEDIN, N.Z.—J. HORSBURGH.
,, W. J. PRICTOR & CO.
DURBAN—CENTRAL NEWS AGENCY, Ltd.
FLORENCE—B. SEEBER, 20, Via Tornabuoni.
HOBART, TASMANIA—GORDON & GOTCH, Prop., Ltd.
JOHANNESBURG—CENTRAL NEWS AGENCY, Ltd.
LAUNCESTON, TASMANIA—GORDON & GOTCH, Prop., Ltd.
MADRID—SR. MARIANO BELMAS, 9, Puerto del Sol
MELBOURNE—GEORGE ROBERTSON & CO.
,, GORDON & GOTCH, Prop., Ltd.
,, W. RAMSAY, 80, Swanston-street.
MONTREAL—W. FOSTER BROWN, St. Catherine-street.
,, A. T. CHAPMAN, 2407, St. Catherine-street.
NAPLES—LIBRERIA DETKEN & ROCHOLL.
NEW YORK—W. WOOD & CO., 51, Fifth Avenue.
,, WILLMER & ROGERS, 31, Beekman-street
PARIS—F. ALCAN, 108, Boulevard St. Germain.
,, O. BERTHIER, 104, Boulevard St. Germain.
,, H. LE SOUDIER, 174, Boulevard St. Germain.
,, A. DONNAMETTE, 30, Rue des Saints-Pères
PERTH, AUSTRALIA—GORDON & GOTCH, Prop., Ltd
PORT ELIZABETH—CENTRAL NEWS AGENCY, Ltd.
PRETORIA—CENTRAL NEWS AGENCY, Ltd.
ROME—LOESCHER & CO., Corso N., 307.
ST. PETERSBURG—C. RICKER, Newsky Prosp., No. 1
SYDNEY—GEORGE ROBERTSON & CO.
,, GORDON & GOTCH.
,, ANGUS & ROBERTSON, 89, Castlereagh-street,
TOKYO, JAPAN—Z. P. MARUYA & CO., 14, Nihonbashi Tori Sanchome.
WELLINGTON, N.Z.—GORDON & GOTCH, Prop., Ltd.
YOKOHAMA—Z. P. MARUYA & CO., 28, Benten Dori Nichome.

THREE MINUTES' WALK NORTH ALDERSGATE STREET STATION.

**PRICE LIST**, quoting many things of interest to Doctors, sent **POST FREE.**

*PROFESSION ONLY SUPPLIED. Mention "KNIFE."*

**ABSORBENT TISSUE** (as Gamgee), superior quality, 1/1 per lb. Sample free on application.

**COTTON WOOLS.** Absorbent, Loose, 1/1 and 1/3 per lb. Sheet, rolled, 9d. per lb. Sheet, rolled & tissued, 10d. and 1/1 per lb.

**GAMGEE TISSUE.** 1/-, 1/4, 2/- per lb.

**LINTS,** 1/6, 1/7, 1/9, 2/- per lb.

**WATERPROOF SHEETINGS.** Proofed one side, 36 in., 1/6 per yard. Proofed both sides, 36 in., 2/2; 54 in., 3/3 per yard. Double texture, 36 in., 2/10; 72 in., 5/- per yard.

**MAY, ROBERTS & CO.,** 9 & 11, CLERKENWELL ROAD, LONDON, E.C.
And 16, Westmoreland St., Dublin. *(Tramcars—East and West—pass the door.)*

**KELENE**

**PURE ETHYL CHLORIDE.**

For LOCAL ANÆSTHESIA and GENERAL NARCOSIS

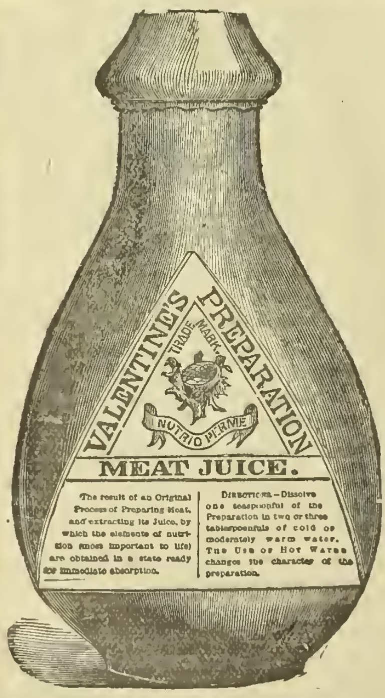
In Glass Tubes of 30 and 60 grammes, with Automatic Spray, and in Glass Capsules of 3 c.c. and 5 c.c. with break-off points.

MANUFACTURED BY THE SOCIÉTE CHIMIQUE DES USINES DU RHÔNE, PARIS

*For Latest information and Literature, apply to the Sole Wholesale Agents for Great Britain and the Colonies:—*

**R. W. GREEFF & CO. 20, Eastcheap, London, E.C.**

TO BE OBTAINED THROUGH WHOLESALE CHEMISTS AND DRUGGISTS.


VALENTINE'S PREPARATION
TRADE MARK
NUTRIO PERME
MEAT JUICE.
The result of an Original Process of Preparing Meat, and extracting its Juice, by which the elements of nutrition (most important to life) are obtained in a state ready for immediate absorption.
DIRECTIONS.—Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or moderately warm water. The Use of Hot Water changes the character of the preparation.

**Valentine's Meat-Juice**

In **Diarrhoea, Dysentery** and **Cholera Infantum,** where a **Powerful Nutrient, Easily Assimilated, Palatable** and giving no inconvenience to the Intestinal Tract is indicated, **Valentine's Meat-Juice** is recommended by eminent medical practitioners.

**Dr. RODE,** *Medical Director of the Empress Frederick Seaside Hospital, Norderney, Germany:* "I have used Valentine's Meat-Juice with most excellent results, with Anæmic and Debilitated Children, especially those who suffer from severe disorders of the digestive organs. Without an exception, the Meat-Juice was greatly relished by the children and well digested."

**H. H. POWELL, M. D.,** *Professor of Diseases of Children, Western Reserve University, Cleveland, Ohio:* "If I were asked in what class of cases Valentine's Meat-Juice had proved of most value in my hands, I should say Cholera Infantum and the Dysenteries of Children. Nutritious and stimulating, it is not refused by any infant, however sick, and is so entirely assimilated as to leave nothing to irritate the lower bowels."

For sale by European and American Chemists and Druggists.

**VALENTINE'S MEAT-JUICE COMPANY,**
**Richmond, Virginia, U. S. A.**

PRINTED and PUBLISHED by the REGISTERED PROPRIETORS, at No. 423, Strand, and Nos. 1 and 2, Bedford-street, adjoining, in the Parish of St. Martin-in-the-Fields, Westminster, in the County of London, and sold by all Booksellers and Newsvendors in Great Britain and Ireland and the Colonies.—Saturday, July 6th, 1907.

# OXYGEN

Of GUARANTEED PURITY extracted from the Atmosphere.

## THE BRITISH OXYGEN COMPANY, LIMITED

(Formerly BRIN'S OXYGEN COMPANY, LIMITED).

**LONDON: ELVERTON ST., WESTMINSTER, S.W.** (Telephone: 111 Westminster).
**MANCHESTER: GREAT MARLBOROUGH ST.** ( „ 2538.)
**BIRMINGHAM: SALTLEY WORKS.** ( „ 2587.)

---

SPECIALLY INTRODUCED AT THE REQUEST OF THE MEDICAL FACULTY.

# FRY'S MALTED COCOA

A Combination of FRY'S Pure Cocoa and
ALLEN & HANBURYS' Extract of Malt.

THE value of Extract of Malt as a nutritive and restorative agent for delicate and exhausted constitutions is now fully acknowledged by the Profession, the Extract being rich in muscle and fat-forming elements. It promotes, moreover, in a special and peculiar manner, the solution and digestion of all farinaceous foods, and is therefore a valuable remedy in those diseases which arise from an imperfect assimilation of these substances. The presence of the active and valuable constituents of the Malt, unimpaired and in a concentrated form, is secured in **ALLEN & HANBURYS'** Extract by a very careful selection of the Malt used, and the greatest attention to the temperatures at which the processes of the mashing and subsequent evaporation in vacuo are carried out.

An ordinary dose contains more of the active properties of Malt than a pint of the best ale or porter.

The combination, therefore, of **ALLEN & HANBURYS'** Extract of Malt with **FRY'S** Pure Cocoa Extract supplies to Invalids and all those possessed of weak digestive powers a delicious, refreshing, and invigorating beverage for breakfast, luncheon, or supper.

Both of its constituents being highly concentrated, the **MALTED COCOA** is economical in use, and possesses highly nutritive properties, and on this account can be recommended with great confidence to the public.

**MEMBERS** of the **PROFESSION** are cordially invited to **WRITE** for **SAMPLES.**

---

# EVIAN

# SOURCE "CACHAT"

This world-famous French Spring is largely prescribed for Chronic Gout, Gouty Diabetes, Arterio-sclerosis, Hepatic or Nephritic Colic, Albuminuria, and Chronic Urinary complaints.

It constitutes also the best and purest *TABLE WATER*, as it promotes digestion and counteracts sick headache.

Samples will be sent gratis and carriage paid to members of the Medical Profession on application to the Agents for the Spring—

**INGRAM & ROYLE, LTD., EAST PAUL'S WHARF,**
**26 UPPER THAMES ST., LONDON, E.C.**
And at LIVERPOOL (19, South John St.) and BRISTOL (Bath Bridge).

# "APENTA"

## NATURAL HUNGARIAN APERIENT WATER.

*Bottled at the Springs, Budapest, Hungary.*

**These Springs and their exploitation are under scientific supervision.**

---

## APPROVED BY THE ACADÉMIE DE MÉDECINE, PARIS.

---

The LANCET says: "Its composition is constant."

The BRITISH MEDICAL JOURNAL says: "A most useful aperient."

The PRACTITIONER says: "An ideal purgative."

---

"An excellent, very active purgative."—DR. E. LANCEREAUX,

*Professeur à la Faculté de Médecine, Paris; Médecin honoraire des Hôpitaux;*
*President de l'Académie de Médecine.*

"The water is constant in its composition."—DR. G. POUCHET,

*Professor of Pharmacology in the Faculty of Medicine of Paris.*

"Its use does not give rise to subsequent constipation."
PROFESSOR W. S. BOGOSLOWSKY,
*Director of the Pharmacological Institute of the Moscow University.*

---

**SOLE IMPORTERS:** **THE APOLLINARIS COMPANY, LTD., LONDON, W.**

UNIVERSITY OF ILLINOIS-URBANA
3 0112 114890665